Data Article

Soil carbon and nitrogen data during eight years of cover crop and compost treatments in organic vegetable production

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ABSTRACT

Data presented are on carbon (C) and nitrogen (N) inputs, and changes in soil C and N in eight systems during the first eight years of a tillage-intensive organic vegetable systems study that was focused on romaine lettuce and broccoli production in Salinas Valley on the central coast region of California. The eight systems differed in organic matter inputs from cover crops and urban yard-waste compost. The cover crops included cereal rye, a legume-rye mixture, and a mustard mixture planted at two seeding rates (standard rate 1x versus high rate 3x). There were three legume-rye 3x systems that differed in compost inputs (0 versus 7.6 Mg ha\(^{-1}\) vegetable crop\(^{-1}\)) and cover cropping frequency (every winter versus every fourth winter). The data include: (1) changes in soil total organic C and total N concentrations and stocks and nitrate N (\(\text{NO}_3^–\)N) concentrations over 8 years, (2) cumulative above ground and estimated below ground C and N inputs, cover crop and crop N uptake, and harvested crop N export over 8 years, (3) soil permanganate oxidizable carbon (POX-C) concentrations and stocks at time 0, 6 and 8 years, and (4) cumulative, estimated yields of lettuce and broccoli (using total biomass and harvest index values) over the 8 years. The C inputs from the vegetables and cover crops included estimates of below ground inputs based on shoot biomass and literature values for shoot:root. The data in this

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Specifications Table

| Subject                      | Agriculture                                                                 |
|------------------------------|-----------------------------------------------------------------------------|
| Specific subject area        | Soil carbon and nitrogen, soil carbon sequestration, carbon and nitrogen     |
|                              | budgets, nutrient management, vegetable production, long-term organic systems |
| research                     |                                                                            |
| Type of data                 | Table                                                                       |
|                              | Figure                                                                      |
| How data were acquired       | Samples of cover crop and vegetable shoots were collected in the field       |
|                              | and oven-dried to obtain dry matter. Soil samples were collected in the field |
|                              | and air dried. All samples were analyzed in a laboratory for total carbon    |
|                              | and nitrogen using a TruSpec CN analyzer (LECO Corp., Saint Joseph, MI).    |
|                              | Soil nitrate concentrations were determined by flow injection photometric    |
|                              | analysis of 2.0 N KCl extracts.                                             |
| Data format                  | Raw                                                                          |
|                              | Descriptive                                                                 |
|                              | Inferential                                                                  |
| Parameters for data collection | Factors that vary among systems are cover cropping frequency, cover crop   |
| Description of data collection | type, cover crop seeding rate, and compost application rate.                 |
|                              | Eight intensive organic vegetable cropping systems were evaluated over an   |
|                              | eight year period. Cover crop biomass was sampled in spring prior to        |
|                              | incorporation. Vegetables were harvested at maturity by commercial crews.   |
|                              | Soils were sampled prior to cover crop planting in fall.                    |
| Data source location         | Salinas, California, United States of America. lat. 36.622658, long.        |
|                              | -121.549172, elevation 37m above sea level.                                 |
| Data accessibility           | With the article                                                            |
| Related research article     | White K.E., E.B. Brennan, M.A. Cavigelli, R.F. Smith. 2020. Winter cover    |
|                              | crops increase readily decomposable soil carbon, but compost drives          |
|                              | total soil carbon during eight years of intensive, organic vegetable        |
|                              | production in California. PLoS ONE 15:e0228677.                              |

Value of the Data

- The data are from the first eight years of the longest running organic systems study in the U.S. that is focused on high-value, high-input, tillage-intensive, organic vegetable production. Salinas, CA is the most important region of the U.S. for high-value, cool season vegetable production.
- The impact of intensively tilled vegetable systems with cover crop and compost inputs on soil C and N stocks is poorly understood. This data could be valuable in future meta-analyses that seek to understand the complex effects of compost and cover crops on soil properties in vegetable systems. The data augment our related publications that only included data from 5 of the 8 systems with cover crop seeding rates that provided optimum weed suppression in the long-term study. The additional systems include the same cover crops at different seeding rates.
- The data may serve as a benchmark for future studies of soil organic C and total N changes in a loamy sand soil in California and other regions with a Mediterranean climate.
• This data may be useful to develop more sustainable organic and conventional vegetable systems in many regions of the world. For example, it may serve as a benchmark in the development of reduced tillage systems and improved nutrient management for vegetable production in this region and elsewhere.

• This data enables others to independently evaluate or extend the statistical analyses presented in the related articles. This may be useful to help researchers and students understand the statistical analysis approach that focused on point and interval estimates in the related articles. This statistical analysis approach used the Exploratory Software for Confidence Intervals (ESCI) software that is freely available online (see link below).

1. Data Description

This article includes the raw data, descriptive data (means) and inferential statistics (95% confidence intervals) on the effects of compost and cover cropping over an 8 year period in the Salinas Organic Cropping Systems (SOCS) experiment including: (1) changes in soil total organic carbon (C) and total nitrogen (N) concentrations and stocks and nitrate N (NO₃-N) concentrations over 8 years (Table 2, Figs 1–3), (2) cumulative above and estimated below ground C and N inputs, cover crop and crop N uptake, and harvested crop N export (Table 3, Figs 4–12), (3) soil permanganate oxidizable carbon (POX-C) concentrations, stocks and changes in POX-C between the beginning of the study and after 6 and 8 years (Table 4), and (4) cumulative, estimated yields of lettuce and broccoli over the eight years (Table 4, Figs 13 and 14) that were removed from the field by commercial crews. Tables 2–5 are available in a spreadsheet in the supplementary material (Supplemental Tables 1–4). Yields are estimated based on measured crop biomass and typical harvest indices. This important long-term study is located at the USDA-ARS (United States Department of Agriculture – Agricultural Research Service) organic research farm in Salinas, California and is approximately 24 km inland from Monterey Bay in a region commonly referred to as the ‘Salad Bowl of America’. This ongoing systems study was designed to provide information on the impact of urban yard waste compost and cover crops (type, frequency, and seeding rate) on a variety measures of sustainability (ex., soil health, yields, weeds) of vegetable production.

2. Experimental Design, Materials and Methods

The ongoing SOCS experiment began in 2003 and is located in a 0.9 ha field that includes 32 plots, organized in 4 blocks of 8 systems plots per block. The first eight years of this study were focused on vegetable production (lettuce followed by broccoli most years) in 8 systems that differed in compost inputs and cover crop (type, seeding rate and frequency) (Table 1). The annual rotation began in October or November each year and included either a winter fallow or winter cover crop that grew until February or March and was usually followed by the two vegetable crops. Winter weed growth in systems 1 and 2 that were fallow most winters were managed with shallow tillage as needed, to minimize weed growth and prevent weed seed production; otherwise, tillage was consistent across all systems. Other than the differences in cover crop and compost inputs among systems, all management (i.e. pest control, tillage, harvest schedules) and inputs (i.e. irrigation, fertilizers) were equivalent across all systems for the vegetable crops [1–4].

Cover crop shoot C and N inputs were calculated based on previously published shoot biomass [2] and C concentration [5] data collected just prior to termination from this study. The vegetable post-harvest residues were estimated based on mature lettuce and broccoli oven-dry shoot biomass assuming harvest indices of 0.26 and 0.24, respectively. To estimate the N exported from the field in the harvested vegetables we multiplied the total shoot N content by the harvest index for lettuce, whereas for broccoli the total shoot N content was multiplied by
Fig. 1. Total organic carbon stocks for the 0 to 30 cm depth in all eight systems (A)–(H) over eight years in the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6 Mg ha\(^{-1}\) before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x = standard rate versus 3x = high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster.
Fig. 2. Total nitrogen stocks for the 0 to 30 cm depth in all eight systems (A)–(H) over eight years in the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6Mg ha⁻¹ before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster.
Fig. 3. Nitrate nitrogen concentrations for the 0 to 30 cm depth prior to cover crop planting in all eight systems (A-H) over eight years in the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6 Mg ha\(^{-1}\) before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster.
Fig. 4. Cumulative carbon inputs from cover crop shoots, roots and root exudates in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6 Mg ha\(^{-1}\) before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 5. Cumulative carbon inputs from vegetable roots, root exudates and shoot residues in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6 Mg ha\textsuperscript{-1}, before each vegetable crop, oven-dry basis) cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 6. Cumulative nitrogen uptake by cover crop shoots and roots in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. Nitrogen uptake in the legume-rye systems does not include legume nitrogen fixation. Nitrogen uptake by roots is based on estimated root biomass and assuming a 20% lower N concentration in roots compared to shoots [9]. The systems differed in compost additions (none versus 7.6 Mg ha$^{-1}$ before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 7. Cumulative, estimated nitrogen fixation by legumes in all four systems with legume-rye cover crops (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) during eight years of the Salinas Organic Cropping Systems experiment in Salinas, California. Nitrogen in roots is based on estimated root biomass and assuming a 20% lower N concentration in roots compared to shoots [9]. The systems differed in compost additions (none versus 7.6 Mg ha⁻¹ before each vegetable crop, oven-dry basis), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x = standard rate versus 3x = high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost and cover crop frequency.
Fig. 8. Cumulative nitrogen inputs returned to the soil from vegetable roots and residue shoots following harvest in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. Nitrogen input by roots is based on estimated root biomass and assuming a 20% lower N concentration in roots compared to shoots [9]. The systems differed in compost additions (none versus 7.6 Mg ha⁻¹ 1 before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 9. Cumulative nitrogen uptake by lettuce shoots and roots in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. Nitrogen uptake by roots is based on estimated root biomass and assuming a 20% lower N concentration in roots compared to shoots [9]. The systems differed in compost additions (none versus 7.6 Mg ha$^{-1}$ before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 10. Cumulative nitrogen export in lettuce harvest in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6 Mg ha\(^{-1}\) before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 11. Cumulative nitrogen uptake by broccoli shoots and roots in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. Nitrogen uptake by roots is based on estimated root biomass and assuming a 20% lower N concentration in roots compared to shoots [9]. The systems differed in compost additions (none versus 7.6 Mg ha⁻¹ before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x = standard rate versus 3x = high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 12. Cumulative nitrogen export in broccoli harvest in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California. The systems differed in compost additions (none versus 7.6 Mg ha\(^{-1}\) before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 13. Cumulative lettuce yields in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California; yields are on an oven-dry basis. The systems differed in compost additions (none versus 7.6 Mg ha$^{-1}$ before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x= standard rate versus 3x= high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Fig. 14. Cumulative broccoli yields in all eight systems (A) and averaged across the 1x and 3x seeding rates (SR) in the annually cover cropped systems (B) following 8 years of the Salinas Organic Cropping Systems experiment in Salinas, California; yields are on an oven-dry basis. The systems differed in compost additions (none versus 7.6 Mg ha\(^{-1}\) before each vegetable crop, oven-dry basis), cover crop type (legume-rye, mustard, or rye), cover cropping frequency (every 4th winter versus annually) and cover crop seeding rate (1x = standard rate versus 3x = high rate); see Table 1 for more seeding rate details. Symbols are raw data in order of replicates 1 to 4 with mean and 95% confidence interval (CI) in the center of each data cluster. The rectangular boxes below the system labels on the x-axis in plot B show the systems that can be compared to evaluate the effects of compost, cover crop frequency, and cover crop type.
Table 1
Descriptions of systems in the Salinas Organic Cropping Systems experiment in Salinas, California.

| System ID used in this Data in Brief article | System ID in PLoS One article | Typea | Frequencyb | Seeding ratec | Compost inputd |
|---------------------------------------------|-----------------------------|-------|------------|--------------|----------------|
| 1*                                          | 1                           | Legume-rye | 4th Winter | 3x           | No             |
| 2*                                          | 2                           | Legume-rye | 4th Winter | 3x           | Yes            |
| 3*                                          | 3                           | Legume-rye | Every Winter | 1x         | Yes            |
| 4*                                          | 4                           | Legume-rye | Every Winter | 3x         | Yes            |
| 5*                                          | 5                           | Mustard    | Every Winter | 1x         | Yes            |
| 6*                                          | 6                           | Mustard    | Every Winter | 3x         | Yes            |
| 7*                                          | 7                           | Rye        | Every Winter | 1x         | Yes            |
| 8*                                          | 8                           | Rye        | Every Winter | 3x         | Yes            |

1 System ID code used in the related article [1].
2 By seed weight, the legume-rye mixture included 10% ‘Rye’ (‘Merced’ Secale cereale L.), 35% Faba bean, (Vicia faba L.; small-seeded type known as ‘bell bean’), 25% Pea, ‘Magnus’ Pisum sativum L., 15% common vetch, V. sativa L., and 15% purple vetch, V. benghalensis L. By seed weight mustard included 61% white mustard, ‘IdaGold’ Sinapis alba L., and 39% India mustard, ‘Pacific Gold’ Brassica juncea Czern.
3 Systems 1 and 2 were fallow all winters except the winter of year 4 and 8. All other systems were cover cropped every winter.
4 The 1x and 3x rates in kg ha−1 were 11 and 33 for mustard (61% ‘Ida Gold’ white mustard (Sinapis alba L.), 39% ‘Pacific Gold’ Indian mustard (Brassica juncea Czern.) by seed weight), 90 and 270 for rye (‘Merced’ rye (Secale cereale L.), and 140 and 420 for the legume-rye mixture (10% ‘Merced’ rye, 35% faba bean, 25% ‘Magnus’ pea, 15% common vetch and 15% purple vetch by seed weight).
5 The compost was made from urban yard waste and the application rate (oven dry basis) prior to each vegetable crop was 7.6 Mg ha−1. Two vegetable crops were grown annually in all years except year 8 when only one vegetable was grown.

0.31 based on Smith et al. [6]. Lettuce and broccoli biomass were calculated based on 32 and 20 plants, respectively, harvested from each plot. We estimated below ground C inputs from cover crop and vegetable roots and root exudates based on above ground biomass as described in detail in White et al. [1].

Soil C and N data were measured in a composite soil sample of 20 subsamples collected from the 0 to 30 cm depth in each plot prior to cover crop planting or winter fallow each year. Total soil C and N were determined on all air-dried ground (<0.5 mm) soil samples by combustion and inorganic soil C by titration of carbonate and bicarbonate. Soil organic C was calculated as the difference between total and inorganic soil C. Soil NO3-N was measured on air-dried ground (<0.5 mm) soil samples by flow injection photometric analysis of 2.0 N KCl extracts. Soil bulk density was used to convert soil organic C and total N concentrations to stocks (kg ha−1) [1,7].

The POX-C analysis was conducted on soil samples collected to a depth of 0 to 6.5 cm from 6 to 8 core samples per plot from time zero and after 6 years that were frozen (-25 C) until analysis. POX-C analysis for year 8 was conducted on air-dried soil collected from the 0 to 30 cm depth. Permanganate oxidizable C was determined using spectrophotometry as described in [1], and converted to POX-C stock using soil bulk density.

The data presented here include the raw data for all eight systems in the experiment (Table 2), whereas the data for only five systems were used in the analyses in the related articles [1,4,8]. Figs 1–14 illustrate major data patterns with the raw data plotted with means and 95% confidence intervals. We refer readers to our recent related article [8] for an explanation of how to compare systems using 95% confidence intervals in this study and how the ESCI software (available at https://thenewstatistics.com/itns/esci/) can help with these comparisons.
Table 2

Raw data of soil total organic carbon concentrations, total nitrogen concentrations, nitrate nitrogen concentrations, total organic carbon stocks, and total nitrogen stocks over 8 years from the Salinas Organic Cropping Systems experiment in Salinas, California. This includes data from all eight systems in the experiment. The related article in PLoS ONE [1] only included data from five of the eight systems with optimal seeding rates for weed suppression. A Microsoft Excel version of the table is available in the supplementary material (Supplementary Table 1).

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures | System ID in Data in Brief article | Overview of the data | Soil Carbon and Nitrogen Concentrations | Soil Carbon and Nitrogen Stocks |
|------------------------|------|-------------------------------------------------|-----------------------------------|----------------------|----------------------------------------|--------------------------------|
|                        |      |                                                  | 1                                 |                      | mg kg\(^{-1}\) soil                     | Mg ha\(^{-1}\)                  |
|                        |      |                                                  | NA                                |                      |                                        |                                |
|                        |      |                                                  | 2                                 |                      |                                        |                                |
|                        |      |                                                  | 3                                 |                      |                                        |                                |
|                        |      |                                                  | 4                                 |                      |                                        |                                |
| 1                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 2                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 3                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 4                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 1                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 2                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 3                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 4                      | 0    | ■                                               | NA                                |                      |                                        |                                |
| 1                      | 0    | NA                                              | 3                                 |                      |                                        |                                |
| 2                      | 0    | NA                                              | 3                                 |                      |                                        |                                |

(continued on next page)
Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PloS One figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|-----------------------|------|------------------------------------------|-----------------------------------|-------------------------------------------------------------|---------------|-------------------------------|----------------|------------------------|----------------|---------|------------|----------------|---------|
| 3                     | 0    | NA                                       | 3                                 | NA                                                          | Yes           | Every winter                 | Leg-rye        | 1x                     | 10,000         | 1100    | 37         | 42             | 4.6     |
| 4                     | 0    | NA                                       | 3                                 | NA                                                          | Yes           | Every winter                 | Leg-rye        | 1x                     | 11,953         | 1300    | 41         | 50             | 5.4     |
| 1                     | 0    | ■                                        | 4                                 | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                     | 13,760         | 1400    | 35         | 57             | 5.8     |
| 2                     | 0    | ■                                        | 4                                 | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                     | 12,147         | 1300    | 35         | 50             | 5.4     |
| 3                     | 0    | ■                                        | 4                                 | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                     | 14,151         | 1500    | 48         | 59             | 6.2     |
| 4                     | 0    | ■                                        | 4                                 | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                     | 10,874         | 1200    | 35         | 45             | 5.0     |
| 1                     | 0    | ◆                                        | 5                                 | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                     | 9547           | 1100    | 24         | 40             | 4.6     |
| 2                     | 0    | ◆                                        | 5                                 | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                     | 10,660         | 1200    | 32         | 44             | 5.0     |
| 3                     | 0    | ◆                                        | 5                                 | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                     | 10,700         | 1200    | 34         | 44             | 5.0     |
| 4                     | 0    | ◆                                        | 5                                 | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                     | 11,888         | 1300    | 46         | 49             | 5.4     |
| 1                     | 0    | NA                                       | 6                                 | NA                                                          | Yes           | Every winter                 | Mustard        | 3x                     | 13,588         | 1400    | 44         | 56             | 5.8     |
| 2                     | 0    | NA                                       | 6                                 | NA                                                          | Yes           | Every winter                 | Mustard        | 3x                     | 11,115         | 1200    | 50         | 46             | 5.0     |
| 3                     | 0    | NA                                       | 6                                 | NA                                                          | Yes           | Every winter                 | Mustard        | 3x                     | 11,783         | 1300    | 33         | 49             | 5.4     |

(continued on next page)
| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in *Data in Brief* article | System ID & description used in associated article in *PloS ONE* | Compost added | Winem cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C mg kg⁻¹ soil | Total N | Nitrate N | Total Organic C Mg ha⁻¹ | Total N |
|-----------------------|------|-----------------------------------------------|------------------------------------|-------------------------------------------------|---------------|----------------------------|----------------|------------------------|----------------------------|--------|----------|----------------------|--------|
| 4                     | 0    | NA                                            | 6*                                 | NA                                              | Yes           | Every winter               | Mustard        | 3x                     | 12,079                                    | 46     | 50        | 5.8                  |        |
| 1                     | 0    | ▲                                              | 7*                                 | 5-Compost + Rye annually                       | Yes           | Every winter               | Rye            | 1x                     | 13,067                                    | 53     | 54        | 5.8                  |        |
| 2                     | 0    | ▲                                              | 7*                                 | 5-Compost + Rye annually                       | Yes           | Every winter               | Rye            | 1x                     | 10,367                                    | 26     | 43        | 4.6                  |        |
| 3                     | 0    | ▲                                              | 7*                                 | 5-Compost + Rye annually                       | Yes           | Every winter               | Rye            | 1x                     | 12,033                                    | 33     | 50        | 5.4                  |        |
| 4                     | 0    | ▲                                              | 7*                                 | 5-Compost + Rye annually                       | Yes           | Every winter               | Rye            | 1x                     | 12,167                                    | 54     | 51        | 5.4                  |        |
| 1                     | 0    | NA                                            | 8*                                 | NA                                              | Yes           | Every winter               | Rye            | 3x                     | 12,660                                    | 41     | 53        | 5.4                  |        |
| 2                     | 0    | NA                                            | 8*                                 | NA                                              | Yes           | Every winter               | Rye            | 3x                     | 12,253                                    | 37     | 51        | 5.4                  |        |
| 3                     | 0    | NA                                            | 8*                                 | NA                                              | Yes           | Every winter               | Rye            | 3x                     | 10,233                                    | 30     | 43        | 4.6                  |        |
| 4                     | 0    | NA                                            | 8*                                 | NA                                              | Yes           | Every winter               | Rye            | 3x                     | 9533                                     | 36     | 40        | 4.2                  |        |
| 1                     | 1    | ■                                              | 1*                                 | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter          | Leg-rye        | 3x                     | 4975                                     | 20     | 21        | 2.9                  |        |
| 2                     | 1    | ■                                              | 1*                                 | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter          | Leg-rye        | 3x                     | 2894                                     | 600    | 12        | 2.5                  |        |
| 3                     | 1    | ■                                              | 1*                                 | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter          | Leg-rye        | 3x                     | 2132                                     | 500    | 13        | 2.1                  |        |
| 4                     | 1    | ■                                              | 1*                                 | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter          | Leg-rye        | 3x                     | 4018                                     | 600    | 17        | 2.5                  |        |

(continued on next page)
| Block (i.e. replicate) | Year | Symbol color & shape in PloS One figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrates | Total Organic C | Total N |
|-----------------------|------|------------------------------------------|-----------------------------------|---------------------------------------------------------------|---------------|--------------------------------|---------------|---------------------|----------------|---------|----------|----------------|--------|
| 1                     | 1    | ■                                        | 2*                                | 2-Compost + Legume-rye 4th Year                               | Yes           | Every 4th winter               | Leg-rye       | 3x                  | 6053           | 700     | 16       | 26             | 3.0    |
| 2                     | 1    | ■                                        | 2*                                | 2-Compost + Legume-rye 4th Year                               | Yes           | Every 4th winter               | Leg-rye       | 3x                  | 4432           | 600     | 14       | 19             | 2.6    |
| 3                     | 1    | ■                                        | 2*                                | 2-Compost + Legume-rye 4th Year                               | Yes           | Every 4th winter               | Leg-rye       | 3x                  | 2794           | 600     | 22       | 13             | 2.6    |
| 4                     | 1    | ■                                        | 2*                                | 2-Compost + Legume-rye 4th Year                               | Yes           | Every 4th winter               | Leg-rye       | 3x                  | 6348           | 800     | 20       | 27             | 3.4    |
| 1                     | 1    | NA                                       | 3*                                | NA                                                             | Yes           | Every winter                   | Leg-rye       | 1x                  | 4611           | 600     | 32       | 20             | 2.6    |
| 2                     | 1    | NA                                       | 3*                                | NA                                                             | Yes           | Every winter                   | Leg-rye       | 1x                  | 2793           | 500     | 13       | 12             | 2.1    |
| 3                     | 1    | NA                                       | 3*                                | NA                                                             | Yes           | Every winter                   | Leg-rye       | 1x                  | 3756           | 700     | 17       | 16             | 3.0    |
| 4                     | 1    | NA                                       | 3*                                | NA                                                             | Yes           | Every winter                   | Leg-rye       | 1x                  | 8157           | 1000    | 41       | 34             | 4.2    |
| 1                     | 1    | ■                                        | 4*                                | 3-Compost + Legume-rye annually                               | Yes           | Every winter                   | Leg-rye       | 3x                  | 3957           | 600     | 25       | 18             | 2.6    |
| 2                     | 1    | ■                                        | 4*                                | 3-Compost + Legume-rye annually                               | Yes           | Every winter                   | Leg-rye       | 3x                  | 3570           | 600     | 20       | 16             | 2.6    |
| 3                     | 1    | ■                                        | 4*                                | 3-Compost + Legume-rye annually                               | Yes           | Every winter                   | Leg-rye       | 3x                  | 3312           | 600     | 21       | 14             | 2.6    |
| 4                     | 1    | ■                                        | 4*                                | 3-Compost + Legume-rye annually                               | Yes           | Every winter                   | Leg-rye       | 3x                  | 7557           | 1000    | 26       | 32             | 4.2    |
| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover type | Cover crop seeding rate | Total Organic C mg kg⁻¹ soil | Total N Mg ha⁻¹ | Nitrate N mg kg⁻¹ soil | Total Organic C Mg ha⁻¹ | Total N Mg ha⁻¹ |
|-----------------------|------|-----------------------------------------------|----------------------------------|-------------------------------------------------------------|---------------|-----------------------------|-----------|------------------------|--------------------------|----------------|----------------------|---------------------------|----------------|
| 1                     | 1    | ✷                                            | 5*                               | 4-Compost + Mustard annually                                 | Yes           | Every winter                | Mustard   | 1x                     | 2484                     | 500            | 10                   | 12                        | 2.1            |
| 2                     | 1    | ✷                                            | 5*                               | 4-Compost + Mustard annually                                 | Yes           | Every winter                | Mustard   | 1x                     | 4093                     | 600            | 26                   | 18                        | 2.6            |
| 3                     | 1    | ✷                                            | 5*                               | 4-Compost + Mustard annually                                 | Yes           | Every winter                | Mustard   | 1x                     | 2894                     | 600            | 23                   | 13                        | 2.6            |
| 4                     | 1    | ✷                                            | 5*                               | 4-Compost + Mustard annually                                 | Yes           | Every winter                | Mustard   | 1x                     | 5667                     | 900            | 19                   | 24                        | 3.8            |
| 1                     | 1    | NA                                           | 6*                               | NA                                                          | Yes           | Every winter                | Mustard   | 3x                     | 5057                     | 600            | 42                   | 22                        | 2.6            |
| 2                     | 1    | NA                                           | 6*                               | NA                                                          | Yes           | Every winter                | Mustard   | 3x                     | 3948                     | 600            | 19                   | 17                        | 2.6            |
| 3                     | 1    | NA                                           | 6*                               | NA                                                          | Yes           | Every winter                | Mustard   | 3x                     | 3256                     | 600            | 12                   | 14                        | 2.6            |
| 4                     | 1    | NA                                           | 6*                               | NA                                                          | Yes           | Every winter                | Mustard   | 3x                     | 4720                     | 600            | 16                   | 20                        | 2.6            |
| 1                     | 1    | ▲                                            | 7*                               | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye       | 1x                     | 4312                     | 600            | 21                   | 18                        | 2.6            |
| 2                     | 1    | ▲                                            | 7*                               | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye       | 1x                     | 4394                     | 700            | 10                   | 19                        | 3.0            |
| 3                     | 1    | ▲                                            | 7*                               | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye       | 1x                     | 4120                     | 600            | 32                   | 18                        | 2.6            |
| 4                     | 1    | ▲                                            | 7*                               | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye       | 1x                     | 6020                     | 800            | 29                   | 26                        | 3.4            |
| 1                     | 1    | NA                                           | 8*                               | NA                                                          | Yes           | Every winter                | Rye       | 3x                     | 4329                     | 600            | 30                   | 19                        | 2.6            |
| 2                     | 1    | NA                                           | 8*                               | NA                                                          | Yes           | Every winter                | Rye       | 3x                     | 2684                     | 500            | 15                   | 12                        | 2.2            |
| 3                     | 1    | NA                                           | 8*                               | NA                                                          | Yes           | Every winter                | Rye       | 3x                     | 2894                     | 600            | 9                    | 13                        | 2.5            |

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| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in *Data in Brief* article | System ID & description used in associated article in *PLoS ONE* | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C mg kg⁻¹ soil | Total N | Nitrate N | Total Organic C Mg ha⁻¹ | Total N |  |
|-----------------------|------|-----------------------------------------------|-----------------------------------|------------------------------------------------|---------------|-----------------------------|---------------|--------------------------|----------------------------|--------|----------|--------------------------|--------|----|
| 4                     | 1    | NA                                            | NA                                | NA                                             | Yes           | Every winter                | Rye           | 3x                       | 5494                                     | 700 | 12       | 23                                      | 2.9    |    |
| 1                     | 2    | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter            | Leg-rye       | 3x                       | 8267                                      | 800 | 15       | 34                                      | 3.3    |    |
| 2                     | 2    | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter            | Leg-rye       | 3x                       | 7327                                      | 700 | 16       | 30                                      | 2.9    |    |
| 3                     | 2    | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter            | Leg-rye       | 3x                       | 5446                                      | 600 | 19       | 23                                      | 2.5    |    |
| 4                     | 2    | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter            | Leg-rye       | 3x                       | 6065                                      | 600 | 15       | 25                                      | 2.5    |    |
| 1                     | 2    | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year               | Yes           | Every 4th winter            | Leg-rye       | 3x                       | 9967                                      | 900 | 15       | 42                                      | 3.8    |    |
| 2                     | 2    | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year               | Yes           | Every 4th winter            | Leg-rye       | 3x                       | 6227                                      | 600 | 21       | 27                                      | 2.6    |    |
| 3                     | 2    | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year               | Yes           | Every 4th winter            | Leg-rye       | 3x                       | 8148                                      | 800 | 22       | 34                                      | 3.4    |    |
| 4                     | 2    | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year               | Yes           | Every 4th winter            | Leg-rye       | 3x                       | 10,371                                    | 1100 | 26       | 43                                      | 4.6    |    |
| 1                     | 2    | NA                                            | 3*                                | NA                                             | Yes           | Every winter                | Leg-rye       | 1x                       | 10,367                                    | 1000 | 27       | 44                                      | 4.2    |    |
| 2                     | 2    | NA                                            | 3*                                | NA                                             | Yes           | Every winter                | Leg-rye       | 1x                       | 9105                                      | 900 | 22       | 38                                      | 3.8    |    |

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Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|------------------------|------|-------------------------------------------------|-----------------------------------|-------------------------------------------------------------|---------------|-------------------------------|----------------|-----------------------|----------------|---------|---------|----------------|---------|
| 3                      | 2    | NA                                              | 3*                               | NA                                                          | Yes           | Every winter                 | Leg-rye        | 1x                    | 7375           | 700     | 27      | 31             | 3.0     |
| 4                      | 2    | NA                                              | 3*                               | NA                                                          | Yes           | Every winter                 | Leg-rye        | 1x                    | 9912           | 900     | 32      | 42             | 3.8     |
| 1                      | 2    | ■                                               | 4*                               | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                    | 9439           | 900     | 33      | 40             | 3.8     |
| 2                      | 2    | ■                                               | 4*                               | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                    | 9839           | 900     | 26      | 41             | 3.8     |
| 3                      | 2    | ■                                               | 4*                               | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                    | 8130           | 800     | 28      | 34             | 3.5     |
| 4                      | 2    | ■                                               | 4*                               | 3-Compost + Legume-rye annually                             | Yes           | Every winter                 | Leg-rye        | 3x                    | 12418          | 1200    | 39      | 52             | 5.0     |
| 1                      | 2    | ◆                                               | 5*                               | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                    | 6746           | 600     | 18      | 29             | 2.6     |
| 2                      | 2    | ◆                                               | 5*                               | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                    | 8342           | 800     | 31      | 35             | 3.4     |
| 3                      | 2    | ◆                                               | 5*                               | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                    | 10,467         | 1000    | 23      | 44             | 4.2     |
| 4                      | 2    | ◆                                               | 5*                               | 4-Compost + Mustard annually                               | Yes           | Every winter                 | Mustard        | 1x                    | 12,539         | 1300    | 29      | 52             | 5.4     |
| 1                      | 2    | NA                                              | 6*                               | NA                                                          | Yes           | Every winter                 | Mustard        | 3x                    | 10,275         | 1000    | 26      | 43             | 4.2     |
| 2                      | 2    | NA                                              | 6*                               | NA                                                          | Yes           | Every winter                 | Mustard        | 3x                    | 11,167         | 1200    | 28      | 46             | 5.0     |

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| Block (i.e. replicate) | Year | Symbol color & shape in PloS One figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C mg kg$^{-1}$ soil | Total N mg kg$^{-1}$ soil | Nitrate N mg kg$^{-1}$ soil | Total Organic C Mg ha$^{-1}$ | Total N Mg ha$^{-1}$ |
|------------------------|------|------------------------------------------|-----------------------------------|---------------------------------------------------------------|--------------|-----------------------------|----------------|------------------|---------------------------|-------------------|---------------------|---------------------|-------------------|
| 3                      | 2    | NA                                       | 6*                                | NA                                                            | Yes           | Every winter                | Mustard       | 3x               | 7891                      | 800               | 21                  | 34                  | 3.4               |
| 4                      | 2    | NA                                       | 6*                                | NA                                                            | Yes           | Every winter                | Mustard       | 3x               | 11,280                    | 800               | 28                  | 47                  | 5.0               |
| 1                      | 2    | ▲                                         | 7*                                | 5-Compost + Rye annually                                      | Yes           | Every winter                | Rye           | 1x               | 8705                      | 800               | 25                  | 36                  | 3.5               |
| 2                      | 2    | ▲                                         | 7*                                | 5-Compost + Rye annually                                      | Yes           | Every winter                | Rye           | 1x               | 7342                      | 700               | 24                  | 31                  | 3.0               |
| 3                      | 2    | ▲                                         | 7*                                | 5-Compost + Rye annually                                      | Yes           | Every winter                | Rye           | 1x               | 9980                      | 900               | 24                  | 42                  | 3.9               |
| 4                      | 2    | ▲                                         | 7*                                | 5-Compost + Rye annually                                      | Yes           | Every winter                | Rye           | 1x               | 8705                      | 900               | 36                  | 37                  | 3.9               |
| 1                      | 2    | NA                                       | 8*                                | NA                                                            | Yes           | Every winter                | Rye           | 3x               | 10,675                    | 1000              | 24                  | 45                  | 4.2               |
| 2                      | 2    | NA                                       | 8*                                | NA                                                            | Yes           | Every winter                | Rye           | 3x               | 8030                      | 700               | 26                  | 34                  | 3.0               |
| 3                      | 2    | NA                                       | 8*                                | NA                                                            | Yes           | Every winter                | Rye           | 3x               | 9139                      | 700               | 20                  | 38                  | 3.0               |
| 4                      | 2    | NA                                       | 8*                                | NA                                                            | Yes           | Every winter                | Rye           | 3x               | 8748                      | 900               | 23                  | 37                  | 3.8               |
| 1                      | 3    | ■                                         | 1*                                | 1-No Compost + Legume-rye 4th Year                            | No            | Every 4th winter            | Leg-rye       | 3x               | 6700                      | 700               | 13                  | 28                  | 2.9               |
| 2                      | 3    | ■                                         | 1*                                | 1-No Compost + Legume-rye 4th Year                            | No            | Every 4th winter            | Leg-rye       | 3x               | 6895                      | 600               | 7                   | 29                  | 2.5               |
| 3                      | 3    | ■                                         | 1*                                | 1-No Compost + Legume-rye 4th Year                            | No            | Every 4th winter            | Leg-rye       | 3x               | 5267                      | 500               | 6                   | 22                  | 2.1               |

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| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrates N | Total Organic C | Total N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 3 | 1* | 1-No Compost + Legume-rye 4th Year | No | Every 4th winter | Leg-rye | 3x | 6344 | 500 | 3 | 26 | 2.1 |
| 1 | 3 | 2* | 2-Compost + Legume-rye 4th Year | Yes | Every 4th winter | Leg-rye | 3x | 8275 | 600 | 5 | 35 | 2.6 |
| 2 | 3 | 2* | 2-Compost + Legume-rye 4th Year | Yes | Every 4th winter | Leg-rye | 3x | 7933 | 700 | 6 | 34 | 3.0 |
| 3 | 3 | 2* | 2-Compost + Legume-rye 4th Year | Yes | Every 4th winter | Leg-rye | 3x | 9263 | 800 | 8 | 39 | 3.4 |
| 4 | 3 | 2* | 2-Compost + Legume-rye 4th Year | Yes | Every 4th winter | Leg-rye | 3x | 8067 | 700 | 9 | 34 | 3.0 |
| 1 | 3 | NA | 3* | Yes | Every winter | Leg-rye | 1x | 9075 | 800 | 17 | 38 | 3.4 |
| 2 | 3 | NA | 3* | Yes | Every winter | Leg-rye | 1x | 7459 | 800 | 8 | 32 | 3.4 |
| 3 | 3 | NA | 3* | Yes | Every winter | Leg-rye | 1x | 9427 | 800 | 8 | 40 | 3.4 |
| 4 | 3 | NA | 3* | Yes | Every winter | Leg-rye | 1x | 8486 | 700 | 14 | 36 | 3.0 |
| 1 | 3 | 4* | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 9826 | 800 | 11 | 42 | 3.4 |
| 2 | 3 | 4* | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 8337 | 700 | 9 | 35 | 3.0 |
| 3 | 3 | 4* | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 8398 | 700 | 10 | 35 | 3.1 |
| 4 | 3 | 4* | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 6483 | 600 | 10 | 28 | 2.6 |

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Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures | System ID in Data in Brief | System ID & description used in associated article in PLoS ONE | Compost added | Cover crop cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|------------------------|------|-----------------------------------------------|---------------------------|----------------------------------------------------------------|----------------|-------------------------------|----------------|------------------------|----------------|--------|----------|----------------|--------|
| 1                      | 3    | ◆                                             | 5*                        | 4-Compost + Mustard annually                                    | Yes            | Every winter                  | Mustard        | 1x                     | 7500           | 700    | 7        | 32             | 3.0    |
| 2                      | 3    | ◆                                             | 5*                        | 4-Compost + Mustard annually                                    | Yes            | Every winter                  | Mustard        | 1x                     | 9156           | 800    | 12       | 39             | 3.4    |
| 3                      | 3    | ◆                                             | 5*                        | 4-Compost + Mustard annually                                    | Yes            | Every winter                  | Mustard        | 1x                     | 7500           | 600    | 11       | 32             | 2.6    |
| 4                      | 3    | ◆                                             | 5*                        | 4-Compost + Mustard annually                                    | Yes            | Every winter                  | Mustard        | 1x                     | 10,105          | 900    | 17       | 42             | 3.8    |
| 1                      | 3    | NA                                            | 6*                        | NA                                                              | Yes            | Every winter                  | Mustard        | 3x                     | 9663           | 800    | 13       | 41             | 3.4    |
| 2                      | 3    | NA                                            | 6*                        | NA                                                              | Yes            | Every winter                  | Mustard        | 3x                     | 10,463          | 900    | 18       | 43             | 3.8    |
| 3                      | 3    | NA                                            | 6*                        | NA                                                              | Yes            | Every winter                  | Mustard        | 3x                     | 8935           | 800    | 11       | 38             | 3.4    |
| 4                      | 3    | NA                                            | 6*                        | NA                                                              | Yes            | Every winter                  | Mustard        | 3x                     | 8695           | 700    | 12       | 37             | 3.0    |
| 1                      | 3    | ▲                                             | 7*                        | 5-Compost + Rye annually                                        | Yes            | Every winter                  | Rye            | 1x                     | 7683           | 700    | 8        | 32             | 3.1    |
| 2                      | 3    | ▲                                             | 7*                        | 5-Compost + Rye annually                                        | Yes            | Every winter                  | Rye            | 1x                     | 8035           | 700    | 9        | 34             | 3.0    |
| 3                      | 3    | ▲                                             | 7*                        | 5-Compost + Rye annually                                        | Yes            | Every winter                  | Rye            | 1x                     | 9139           | 800    | 12       | 38             | 3.5    |
| 4                      | 3    | ▲                                             | 7*                        | 5-Compost + Rye annually                                        | Yes            | Every winter                  | Rye            | 1x                     | 9333           | 800    | 14       | 40             | 3.5    |
| 1                      | 3    | NA                                            | 8*                        | NA                                                              | Yes            | Every winter                  | Rye            | 3x                     | 9521           | 800    | 12       | 40             | 3.4    |
| 2                      | 3    | NA                                            | 8*                        | NA                                                              | Yes            | Every winter                  | Rye            | 3x                     | 9595           | 900    | 8        | 41             | 3.8    |

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| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type<sup>8</sup> | Cover crop seeding rate<sup>8</sup> | Total Organic C<sup>mg kg<sup>-1</sup> soil</sup> | Total N | Nitrate N | Total Organic C<sup>Mg ha<sup>-1</sup></sup> | Total N |  
|----------------------|------|-----------------------------------------------|-----------------------------------------------------|---------------|-----------------------------|----------------|-----------------------------|-------------------|-------|-------|-----------------|-------|  
| 3                    | 3    | NA                                            | 8<sup>*</sup>                                         | NA            | Yes                         | Every winter Rye | 3x              | 8696              | 800   | 13    | 37              | 3.4   |  
| 4                    | 3    | NA                                            | 8<sup>*</sup>                                         | NA            | Yes                         | Every winter Rye | 3x              | 8652              | 700   | 15    | 36              | 3.0   |  
| 1                    | 4    | □                                             | 1<sup>*</sup>                                          | 1-No Compost + Legume-rye 4th Year | No             | Every 4th winter Leg-rye | 3x              | 5171              | 500   | 12    | 22              | 2.1   |  
| 2                    | 4    | □                                             | 1<sup>*</sup>                                          | 1-No Compost + Legume-rye 4th Year | No             | Every 4th winter Leg-rye | 3x              | 4333              | 500   | 11    | 18              | 2.1   |  
| 3                    | 4    | □                                             | 1<sup>*</sup>                                          | 1-No Compost + Legume-rye 4th Year | No             | Every 4th winter Leg-rye | 3x              | 4274              | 500   | 8     | 18              | 2.1   |  
| 4                    | 4    | □                                             | 1<sup>*</sup>                                          | 1-No Compost + Legume-rye 4th Year | No             | Every 4th winter Leg-rye | 3x              | 5799              | 600   | 8     | 24              | 2.5   |  
| 1                    | 4    | □                                             | 2<sup>*</sup>                                          | 2-Compost + Legume-rye 4th Year | Yes            | Every 4th winter Leg-rye | 3x              | 7178              | 800   | 10    | 31              | 3.4   |  
| 2                    | 4    | □                                             | 2<sup>*</sup>                                          | 2-Compost + Legume-rye 4th Year | Yes            | Every 4th winter Leg-rye | 3x              | 5758              | 600   | 15    | 26              | 2.7   |  
| 3                    | 4    | □                                             | 2<sup>*</sup>                                          | 2-Compost + Legume-rye 4th Year | Yes            | Every 4th winter Leg-rye | 3x              | 5127              | 500   | 22    | 23              | 2.2   |  
| 4                    | 4    | □                                             | 2<sup>*</sup>                                          | 2-Compost + Legume-rye 4th Year | Yes            | Every 4th winter Leg-rye | 3x              | 6807              | 700   | 15    | 29              | 3.0   |  
| 1                    | 4    | NA                                            | 3<sup>*</sup>                                          | NA            | Yes                         | Every winter Leg-rye | 1x              | 5888              | 600   | 27    | 26              | 2.6   |  
| 2                    | 4    | NA                                            | 3<sup>*</sup>                                          | NA            | Yes                         | Every winter Leg-rye | 1x              | 5051              | 600   | 10    | 22              | 2.6   |  

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Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|------------------------|------|-----------------------------------------------|------------------------------------|-------------------------------------------------------------|---------------|-------------------------------|----------------|------------------------|----------------|--------|-----------|----------------|--------|
| 3                      | 4    | NA                                            | 3*                                 | NA                                                          | Yes           | Every winter                  | Leg-rye        | 1x                     | 5327           | 600    | 11        | 23             | 2.6    |
| 4                      | 4    | NA                                            | 3*                                 | NA                                                          | Yes           | Every winter                  | Leg-rye        | 1x                     | 8022           | 800    | 19        | 34             | 3.4    |
| 1                      | 4    | ■                                             | 4*                                 | 3-Compost + Legume-rye annually                               | Yes           | Every winter                  | Leg-rye        | 3x                     | 6188           | 600    | 22        | 28             | 2.7    |
| 2                      | 4    | ■                                             | 4*                                 | 3-Compost + Legume-rye annually                               | Yes           | Every winter                  | Leg-rye        | 3x                     | 6410           | 700    | 19        | 28             | 3.1    |
| 3                      | 4    | ■                                             | 4*                                 | 3-Compost + Legume-rye annually                               | Yes           | Every winter                  | Leg-rye        | 3x                     | 6599           | 700    | 19        | 28             | 3.1    |
| 4                      | 4    | ■                                             | 4*                                 | 3-Compost + Legume-rye annually                               | Yes           | Every winter                  | Leg-rye        | 3x                     | 7067           | 700    | 34        | 31             | 3.1    |
| 1                      | 4    | ◆                                             | 5*                                 | 4-Compost + Mustard annually                                 | Yes           | Every winter                  | Mustard        | 1x                     | 4420           | 400    | 11        | 21             | 1.9    |
| 2                      | 4    | ◆                                             | 5*                                 | 4-Compost + Mustard annually                                 | Yes           | Every winter                  | Mustard        | 1x                     | 7323           | 700    | 17        | 32             | 3.1    |
| 3                      | 4    | ◆                                             | 5*                                 | 4-Compost + Mustard annually                                 | Yes           | Every winter                  | Mustard        | 1x                     | 6781           | 700    | 11        | 30             | 3.1    |
| 4                      | 4    | ◆                                             | 5*                                 | 4-Compost + Mustard annually                                 | Yes           | Every winter                  | Mustard        | 1x                     | 7638           | 800    | 17        | 33             | 3.5    |
| 1                      | 4    | NA                                            | 6*                                 | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                     | 6629           | 600    | 20        | 29             | 2.6    |
| 2                      | 4    | NA                                            | 6*                                 | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                     | 5735           | 600    | 10        | 25             | 2.6    |
| 3                      | 4    | NA                                            | 6*                                 | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                     | 5389           | 600    | 13        | 24             | 2.6    |

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| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures³ | System ID in Data in Brief article⁴ | System ID & description used in associated article in PLoS ONE⁵ | Compost added⁶ | Winer cover cropping frequency⁷ | Cover crop type⁸ | Cover crop seeding rate⁹ | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|-----------------------|------|-----------------------------------------------|----------------------------------|-------------------------------------------------|---------------|-------------------------------|----------------|---------------------------|---------------|-------|----------|---------------|-------|
| 4                     | 4    | NA                                            | 6*                              | NA                                              | Yes           | Every winter                  | Mustard        | 3x                         | 7483          | 700  | 16       | 32            | 3.0   |
| 1                     | 4    | ▲                                              | 7*                              | 5-Compost + Rye annually                       | Yes           | Every winter                  | Rye            | 1x                         | 4537          | 500  | 12       | 21            | 2.4   |
| 2                     | 4    | ▲                                              | 7*                              | 5-Compost + Rye annually                       | Yes           | Every winter                  | Rye            | 1x                         | 5629          | 600  | 7        | 25            | 2.7   |
| 3                     | 4    | ▲                                              | 7*                              | 5-Compost + Rye annually                       | Yes           | Every winter                  | Rye            | 1x                         | 5210          | 600  | 16       | 24            | 2.7   |
| 4                     | 4    | ▲                                              | 7*                              | 5-Compost + Rye annually                       | Yes           | Every winter                  | Rye            | 1x                         | 8720          | 800  | 15       | 37            | 3.5   |
| 1                     | 4    | NA                                            | 8*                              | NA                                              | Yes           | Every winter                  | Rye            | 3x                         | 8740          | 800  | 17       | 37            | 3.4   |
| 2                     | 4    | NA                                            | 8*                              | NA                                              | Yes           | Every winter                  | Rye            | 3x                         | 7023          | 700  | 15       | 30            | 3.0   |
| 3                     | 4    | NA                                            | 8*                              | NA                                              | Yes           | Every winter                  | Rye            | 3x                         | 5858          | 600  | 12       | 25            | 2.6   |
| 4                     | 4    | NA                                            | 8*                              | NA                                              | Yes           | Every winter                  | Rye            | 3x                         | 7395          | 700  | 8        | 31            | 3.0   |
| 1                     | 5    | ■                                              | 1*                              | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter              | Leg-rye        | 3x                         | 5756          | 600  | 10       | 24            | 2.5   |
| 2                     | 5    | ■                                              | 1*                              | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter              | Leg-rye        | 3x                         | 4798          | 500  | 9        | 20            | 2.1   |
| 3                     | 5    | ■                                              | 1*                              | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter              | Leg-rye        | 3x                         | 3867          | 400  | 7        | 16            | 1.7   |
| 4                     | 5    | ■                                              | 1*                              | 1-No Compost + Legume-rye 4th Year             | No            | Every 4th winter              | Leg-rye        | 3x                         | 7110          | 700  | 27       | 30            | 2.9   |
| 1                     | 5    | ■                                              | 2*                              | 2-Compost + Legume-rye 4th Year                | Yes           | Every 4th winter              | Leg-rye        | 3x                         | 6136          | 600  | 9        | 27            | 2.6   |

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| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures | System ID in Data in Brief article | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|-----------------------|------|-------------------------------------------------|-----------------------------------|--------------|-------------------------------|---------------|-----------------------|----------------|--------|----------|----------------|--------|
| 2                     | 5    | ■                                               | 2*                                | Yes          | Every 4th winter              | Leg-rye       | 3x                    | 6496           | 600    | 12       | 29             | 2.7    |
| 3                     | 5    | ■                                               | 2*                                | Yes          | Every 4th winter              | Leg-rye       | 3x                    | 7139           | 700    | 13       | 31             | 3.0    |
| 4                     | 5    | ■                                               | 2*                                | Yes          | Every 4th winter              | Leg-rye       | 3x                    | 7158           | 700    | 15       | 31             | 3.0    |
| 1                     | 5    | NA                                              | 3*                                | Yes          | Every winter                  | Leg-rye       | 1x                    | 7809           | 700    | 21       | 33             | 3.0    |
| 2                     | 5    | NA                                              | 3*                                | Yes          | Every winter                  | Leg-rye       | 1x                    | 8936           | 900    | 19       | 37             | 3.8    |
| 3                     | 5    | NA                                              | 3*                                | Yes          | Every winter                  | Leg-rye       | 1x                    | 6725           | 600    | 17       | 29             | 2.6    |
| 4                     | 5    | NA                                              | 3*                                | Yes          | Every winter                  | Leg-rye       | 1x                    | 6456           | 600    | 29       | 28             | 2.6    |
| 1                     | 5    | ■                                               | 4*                                | Yes          | Every winter                  | Leg-rye       | 3x                    | 8686           | 800    | 23       | 38             | 3.5    |
| 2                     | 5    | ■                                               | 4*                                | Yes          | Every winter                  | Leg-rye       | 3x                    | 7383           | 700    | 26       | 32             | 3.1    |
| 3                     | 5    | ■                                               | 4*                                | Yes          | Every winter                  | Leg-rye       | 3x                    | 6394           | 600    | 20       | 28             | 2.8    |
| 4                     | 5    | ■                                               | 4*                                | Yes          | Every winter                  | Leg-rye       | 3x                    | 8839           | 800    | 26       | 38             | 3.4    |
| 1                     | 5    | ◆                                               | 5*                                | Yes          | Every winter                  | Mustard       | 1x                    | 6577           | 600    | 13       | 29             | 2.6    |
| 2                     | 5    | ◆                                               | 5*                                | Yes          | Every winter                  | Mustard       | 1x                    | 5958           | 600    | 21       | 27             | 2.7    |
| 3                     | 5    | ◆                                               | 5*                                | Yes          | Every winter                  | Mustard       | 1x                    | 5835           | 500    | 18       | 27             | 2.3    |

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| Block (i.e. replicate) | Year | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C (mg kg⁻¹ soil) | Total N (Mg ha⁻¹) | Nitrate N (Mg ha⁻¹) | Total Organic C (Mg ha⁻¹) | Total N (Mg ha⁻¹) |
|-----------------------|------|-------------------------------------------------------------|---------------|-------------------------------|----------------|------------------------|-------------------------------|----------------|------------------|-------------------------|----------------|
| 4                     | 5    | 4-Compost + Mustard annually | Yes           | Every winter                  | Mustard        | 1x                      | 9744                          | 900            | 17               | 41                      | 3.9  |
| 1                     | 5    | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                      | 9494                          | 900            | 23               | 40                      | 3.8  |
| 2                     | 5    | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                      | 7856                          | 700            | 20               | 33                      | 3.0  |
| 3                     | 5    | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                      | 6058                          | 600            | 14               | 26                      | 2.6  |
| 4                     | 5    | NA                                                          | Yes           | Every winter                  | Mustard        | 3x                      | 4567                          | 500            | 12               | 20                      | 2.2  |
| 1                     | 5    | 5-Compost + Rye annually | Yes           | Every winter                  | Rye            | 1x                      | 7528                          | 700            | 20               | 32                      | 3.2  |
| 2                     | 5    | 5-Compost + Rye annually | Yes           | Every winter                  | Rye            | 1x                      | 9609                          | 900            | 15               | 40                      | 3.8  |
| 3                     | 5    | 5-Compost + Rye annually | Yes           | Every winter                  | Rye            | 1x                      | 7289                          | 700            | 18               | 31                      | 3.1  |
| 4                     | 5    | 5-Compost + Rye annually | Yes           | Every winter                  | Rye            | 1x                      | 8553                          | 800            | 20               | 37                      | 3.5  |
| 1                     | 5    | NA                                                          | Yes           | Every winter                  | Rye            | 3x                      | 8232                          | 800            | 22               | 35                      | 3.4  |
| 2                     | 5    | NA                                                          | Yes           | Every winter                  | Rye            | 3x                      | 8372                          | 800            | 15               | 36                      | 3.4  |
| 3                     | 5    | NA                                                          | Yes           | Every winter                  | Rye            | 3x                      | 5880                          | 500            | 10               | 25                      | 2.2  |
| 4                     | 5    | NA                                                          | Yes           | Every winter                  | Rye            | 3x                      | 7194                          | 700            | 13               | 30                      | 3.0  |
| 1                     | 6    | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter              | Leg-rye        | 3x                      | 6167                          | 550            | 19               | 26                      | 2.3  |
| 2                     | 6    | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter              | Leg-rye        | 3x                      | 6983                          | 650            | 21               | 29                      | 2.7  |
| 3                     | 6    | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter              | Leg-rye        | 3x                      | 5508                          | 510            | 16               | 23                      | 2.1  |
Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Soil Carbon and Nitrogen Concentrations | Soil Carbon and Nitrogen Stocks |
|------------------------|------|-------------------------------------------------|------------------------------------------------------------|---------------|-------------------------------|----------------|------------------------|--------------------------------------|--------------------------------|
|                        |      |                                                 |                                                            |               |                               |                |                        | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|                        |      |                                                 |                                                            |               |                               |                |                        | mg kg⁻¹ soil | Mg ha⁻¹ |           | mg ha⁻¹ |         |
| 4                      | 6    | ■                                               | 1*                                                         | No            | Every 4th winter              | Leg-rye        | 3x                     | 6029           | 550    | 15        | 25     | 2.3     |
| 1                      | 6    | ■                                               | 2*                                                         | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 7633           | 670    | 25        | 33     | 2.9     |
| 2                      | 6    | ■                                               | 2*                                                         | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 11,747         | 31     | 49        | 49     | 4.4     |
| 3                      | 6    | ■                                               | 2*                                                         | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 9579           | 890    | 29        | 40     | 3.8     |
| 4                      | 6    | ■                                               | 2*                                                         | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 9093           | 820    | 22        | 39     | 3.5     |
| 1                      | 6    | NA                                              | 3*                                                         | Yes           | Every winter                  | Leg-rye        | 1x                     | 9387           | 820    | 37        | 40     | 3.5     |
| 2                      | 6    | NA                                              | 3*                                                         | Yes           | Every winter                  | Leg-rye        | 1x                     | 9874           | 880    | 64        | 41     | 3.7     |
| 3                      | 6    | NA                                              | 3*                                                         | Yes           | Every winter                  | Leg-rye        | 1x                     | 7800           | 710    | 37        | 33     | 3.0     |
| 4                      | 6    | NA                                              | 3*                                                         | Yes           | Every winter                  | Leg-rye        | 1x                     | 9006           | 820    | 33        | 38     | 3.5     |
| 1                      | 6    | ■                                               | 4*                                                         | Yes           | Every winter                  | Leg-rye        | 3x                     | 11,102         | 1010   | 38        | 47     | 4.3     |
| 2                      | 6    | ■                                               | 4*                                                         | Yes           | Every winter                  | Leg-rye        | 3x                     | 10,614         | 980    | 44        | 44     | 4.2     |

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| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|-----------------------|------|-----------------------------------------------|-----------------------------------|---------------------------------------------------------------|---------------|-----------------------------|----------------|--------------------------|----------------|----------|----------|----------------|--------|
| 3                     | 6    | ■                                             | 3-Compost + Legume-rye annually   | Yes                                                            | Every winter  | Leg-rye                     | 3x             |                          | 9018           | 810      | 57       | 38             | 3.6    |
| 4                     | 6    | ■                                             | 3-Compost + Legume-rye annually   | Yes                                                            | Every winter  | Leg-rye                     | 3x             |                          | 7619           | 700      | 37       | 33             | 3.1    |
| 1                     | 6    | ◆                                             | 4-Compost + Mustard annually      | Yes                                                            | Every winter  | Mustard                     | 1x             |                          | 7133           | 630      | 40       | 32             | 2.8    |
| 2                     | 6    | ◆                                             | 4-Compost + Mustard annually      | Yes                                                            | Every winter  | Mustard                     | 1x             |                          | 11,433         | 1030     | 36       | 48             | 4.3    |
| 3                     | 6    | ◆                                             | 4-Compost + Mustard annually      | Yes                                                            | Every winter  | Mustard                     | 1x             |                          | 7900           | 740      | 44       | 35             | 3.2    |
| 4                     | 6    | ◆                                             | 4-Compost + Mustard annually      | Yes                                                            | Every winter  | Mustard                     | 1x             |                          | 9444           | 880      | 37       | 40             | 3.8    |
| 1                     | 6    | NA                                            | NA                                | Yes                                                            | Every winter  | Mustard                     | 3x             |                          | 9383           | 830      | 33       | 40             | 3.6    |
| 2                     | 6    | NA                                            | NA                                | Yes                                                            | Every winter  | Mustard                     | 3x             |                          | 9174           | 820      | 55       | 38             | 3.5    |
| 3                     | 6    | NA                                            | NA                                | Yes                                                            | Every winter  | Mustard                     | 3x             |                          | 8344           | 790      | 38       | 35             | 3.4    |
| 4                     | 6    | NA                                            | NA                                | Yes                                                            | Every winter  | Mustard                     | 3x             |                          | 8129           | 770      | 54       | 35             | 3.3    |
| 1                     | 6    | ▲                                             | 5-Compost + Rye annually          | Yes                                                            | Every winter  | Rye                         | 1x             |                          | 8160           | 720      | 41       | 34             | 3.2    |
| 2                     | 6    | ▲                                             | 5-Compost + Rye annually          | Yes                                                            | Every winter  | Rye                         | 1x             |                          | 11,218         | 1010     | 32       | 46             | 4.2    |
| 3                     | 6    | ▲                                             | 5-Compost + Rye annually          | Yes                                                            | Every winter  | Rye                         | 1x             |                          | 7914           | 730      | 35       | 34             | 3.2    |

Table 2 (continued)
| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C mg kg⁻¹ soil | Total N mg ha⁻¹ | Nitrates N Mg ha⁻¹ | Total Organic C Mg ha⁻¹ | Total N Mg ha⁻¹ |
|------------------------|------|-----------------------------------------------|-----------------------------------|-------------------------------------------------------------|---------------|-----------------------------|----------------|-------------------------|--------------------------|----------------|----------------|-----------------------|----------------|---|
| 4                      | 6    | ▲                                             | 7*                               | 5-Compost + Rye annually                                    | Yes           | Every winter                | Rye            | 1x                      | 7900                     | 740            | 40             | 34                    | 3.3            |---|
| 1                      | 6    | NA                                            | 8*                               | NA                                                          | Yes           | Every winter                | Rye            | 3x                      | 9960                     | 880            | 44             | 42                    | 3.8            |---|
| 2                      | 6    | NA                                            | 8*                               | NA                                                          | Yes           | Every winter                | Rye            | 3x                      | 9667                     | 880            | 35             | 41                    | 3.8            |---|
| 3                      | 6    | NA                                            | 8*                               | NA                                                          | Yes           | Every winter                | Rye            | 3x                      | 8744                     | 810            | 34             | 37                    | 3.4            |---|
| 4                      | 6    | NA                                            | 8*                               | NA                                                          | Yes           | Every winter                | Rye            | 3x                      | 8918                     | 820            | 32             | 37                    | 3.5            |---|
| 1                      | 7    | ■                                             | 1*                               | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye        | 3x                      | 3414                     | 320            | 5              | 15                    | 1.4            |---|
| 2                      | 7    | ■                                             | 1*                               | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye        | 3x                      | 4732                     | 460            | 5              | 20                    | 2.0            |---|
| 3                      | 7    | ■                                             | 1*                               | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye        | 3x                      | 5125                     | 500            | 5              | 22                    | 2.1            |---|
| 4                      | 7    | ■                                             | 1*                               | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye        | 3x                      | 6484                     | 610            | 9              | 27                    | 2.6            |---|
| 1                      | 7    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter            | Leg-rye        | 3x                      | 4439                     | 420            | 5              | 21                    | 2.0            |---|
| 2                      | 7    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter            | Leg-rye        | 3x                      | 7944                     | 720            | 8              | 35                    | 3.2            |---|
| 3                      | 7    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter            | Leg-rye        | 3x                      | 7740                     | 710            | 9              | 33                    | 3.1            |---|
| 4                      | 7    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter            | Leg-rye        | 3x                      | 8667                     | 790            | 7              | 37                    | 3.5            |---|

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Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures/$^3$ | System ID in Data in Brief article/$^4$ | System ID & description used in associated article in PloS ONE/$^5$ | Compost added/$^6$ | Winer cover cropping frequency/$^7$ | Cover crop type/$^8$ | Cover crop seeding rate/$^8$ | Soil Carbon and Nitrogen Concentrations | Soil Carbon and Nitrogen Stocks/$^2$ |
|-----------------------|------|------------------------------------------------------|----------------------------------------|----------------------------------------------------------|------------------|----------------------------|----------------------|----------------------------|---------------------------------|---------------------------------------------|
|                       |      |                                                      |                                        |                                                          |                  |                          |                      |                          |       |             |
| 1                     | 7    | NA                                                   | 3*/                                     | NA                                                       | Yes              | Every winter             | Leg-rye              | 1x                         | 8475              | 750   | 20  | 37      | 3.4                      |
| 2                     | 7    | NA                                                   | 3*/                                     | NA                                                       | Yes              | Every winter             | Leg-rye              | 1x                         | 9133              | 860   | 18  | 39      | 3.7                      |
| 3                     | 7    | NA                                                   | 3*/                                     | NA                                                       | Yes              | Every winter             | Leg-rye              | 1x                         | 7123              | 650   | 14  | 31      | 2.9                      |
| 4                     | 7    | NA                                                   | 3*/                                     | NA                                                       | Yes              | Every winter             | Leg-rye              | 1x                         | 8767              | 840   | 27  | 38      | 3.7                      |
| 1                     | 7    | ■                                                   | 4*/                                     | 3-Compost + Legume-rye annually                     | Yes              | Every winter             | Leg-rye              | 3x                         | 7801              | 740   | 21  | 35      | 3.3                      |
| 2                     | 7    | ■                                                   | 4*/                                     | 3-Compost + Legume-rye annually                     | Yes              | Every winter             | Leg-rye              | 3x                         | 7710              | 740   | 23  | 33      | 3.3                      |
| 3                     | 7    | ■                                                   | 4*/                                     | 3-Compost + Legume-rye annually                     | Yes              | Every winter             | Leg-rye              | 3x                         | 12,294 | 1170 | 22 | 50      | 5.0                      |
| 4                     | 7    | ■                                                   | 4*/                                     | 3-Compost + Legume-rye annually                     | Yes              | Every winter             | Leg-rye              | 3x                         | 9367              | 870   | 20  | 40      | 3.7                      |
| 1                     | 7    | ◆                                                   | 5*/                                     | 4-Compost + Mustard annually                         | Yes              | Every winter             | Mustard              | 1x                         | 6497              | 630   | 21  | 30      | 2.8                      |
| 2                     | 7    | ◆                                                   | 5*/                                     | 4-Compost + Mustard annually                         | Yes              | Every winter             | Mustard              | 1x                         | 14,927 | 1400 | 23 | 61      | 5.7                      |
| 3                     | 7    | ◆                                                   | 5*/                                     | 4-Compost + Mustard annually                         | Yes              | Every winter             | Mustard              | 1x                         | 7410              | 690   | 18  | 33      | 3.1                      |
| 4                     | 7    | ◆                                                   | 5*/                                     | 4-Compost + Mustard annually                         | Yes              | Every winter             | Mustard              | 1x                         | 7567              | 700   | 20  | 33      | 3.1                      |
| Block (i.e. replicate) | Year | Symbol color & shape in PLoS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C mg kg⁻¹ soil | Total N Mg ha⁻¹ | Nitrate N mg kg⁻¹ soil | Total Organic C Mg ha⁻¹ | Total N Mg ha⁻¹ |
|-----------------------|------|-------------------------------------------------|-----------------------------------|---------------------------------------------------------------|---------------|--------------------------------|----------------|-----------------------|-----------------------------|----------------|---------------------|---------------------|----------------|
| 1                     | 7    | NA                                              | 6*                                | NA                                                            | Yes           | Every winter                   | Mustard        | 3x                    | 10,775                      | 980            | 17                  | 46                  | 4.2            |
| 2                     | 7    | NA                                              | 6*                                | NA                                                            | Yes           | Every winter                   | Mustard        | 3x                    | 8755                       | 810            | 16                  | 37                  | 3.5            |
| 3                     | 7    | NA                                              | 6*                                | NA                                                            | Yes           | Every winter                   | Mustard        | 3x                    | 8633                       | 820            | 16                  | 37                  | 3.6            |
| 4                     | 7    | NA                                              | 6*                                | NA                                                            | Yes           | Every winter                   | Mustard        | 3x                    | 9333                       | 870            | 25                  | 40                  | 3.8            |
| 1                     | 7    | ▲                                                | 7*                                | 5-Compost + Rye annually                                       | Yes           | Every winter                   | Rye            | 1x                    | 8630                       | 800            | 17                  | 36                  | 3.6            |
| 2                     | 7    | ▲                                                | 7*                                | 5-Compost + Rye annually                                       | Yes           | Every winter                   | Rye            | 1x                    | 11,406                      | 1060           | 16                  | 47                  | 4.4            |
| 3                     | 7    | ▲                                                | 7*                                | 5-Compost + Rye annually                                       | Yes           | Every winter                   | Rye            | 1x                    | 10171                      | 970            | 12                  | 42                  | 4.2            |
| 4                     | 7    | ▲                                                | 7*                                | 5-Compost + Rye annually                                       | Yes           | Every winter                   | Rye            | 1x                    | 8600                       | 850            | 14                  | 37                  | 3.7            |
| 1                     | 7    | NA                                              | 8*                                | NA                                                            | Yes           | Every winter                   | Rye            | 3x                    | 12,400                      | 1160           | 21                  | 52                  | 4.9            |
| 2                     | 7    | NA                                              | 8*                                | NA                                                            | Yes           | Every winter                   | Rye            | 3x                    | 11,006                      | 1020           | 19                  | 46                  | 4.4            |
| 3                     | 7    | NA                                              | 8*                                | NA                                                            | Yes           | Every winter                   | Rye            | 3x                    | 7839                       | 720            | 15                  | 34                  | 3.1            |
| 4                     | 7    | NA                                              | 8*                                | NA                                                            | Yes           | Every winter                   | Rye            | 3x                    | 8075                       | 720            | 9                   | 34                  | 3.1            |
| 1                     | 8    | ■                                               | 1*                                | 1-No Compost + Legume-rye 4th Year                             | No            | Every 4th winter               | Leg-rye        | 3x                    | 5186                       | 510            | 27                  | 22                  | 2.2            |
| 2                     | 8    | ■                                               | 1*                                | 1-No Compost + Legume-rye 4th Year                             | No            | Every 4th winter               | Leg-rye        | 3x                    | 4006                       | 440            | 29                  | 17                  | 1.9            |

(continued on next page)
| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C | Total N | Nitrate N | Total Organic C | Total N |
|-----------------------|------|-----------------------------------------------|----------------------------------|-------------------------------------------------|---------------|-------------------------------|----------------|---------------------|----------------|--------|----------|----------------|--------|
| 3                     | 8    | ■                                             | 1*                               | 1-No Compost + Legume-rye 4th Year               | No            | Every 4th winter              | Leg-rye        | 3x                  | 4279           | 440    | 21       | 18            | 1.9    |
| 4                     | 8    | ■                                             | 1*                               | 1-No Compost + Legume-rye 4th Year               | No            | Every 4th winter              | Leg-rye        | 3x                  | 5833           | 590    | 30       | 24            | 2.5    |
| 1                     | 8    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                 | Yes           | Every 4th winter              | Leg-rye        | 3x                  | 5433           | 530    | 30       | 24            | 2.4    |
| 2                     | 8    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                 | Yes           | Every 4th winter              | Leg-rye        | 3x                  | 8475           | 850    | 36       | 37            | 3.7    |
| 3                     | 8    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                 | Yes           | Every 4th winter              | Leg-rye        | 3x                  | 5733           | 540    | 26       | 26            | 2.5    |
| 4                     | 8    | ■                                             | 2*                               | 2-Compost + Legume-rye 4th Year                 | Yes           | Every 4th winter              | Leg-rye        | 3x                  | 7623           | 760    | 33       | 33            | 3.3    |
| 1                     | 8    | NA                                            | 3*                               | NA                                              | Yes           | Every winter                  | Leg-rye        | 1x                  | 8110           | 780    | 38       | 36            | 3.5    |
| 2                     | 8    | NA                                            | 3*                               | NA                                              | Yes           | Every winter                  | Leg-rye        | 1x                  | 6867           | 670    | 35       | 30            | 3.0    |
| 3                     | 8    | NA                                            | 3*                               | NA                                              | Yes           | Every winter                  | Leg-rye        | 1x                  | 6971           | 690    | 35       | 31            | 3.0    |
| 4                     | 8    | NA                                            | 3*                               | NA                                              | Yes           | Every winter                  | Leg-rye        | 1x                  | 7359           | 720    | 32       | 32            | 3.2    |
| 1                     | 8    | ■                                             | 4*                               | 3-Compost + Legume-rye annually                 | Yes           | Every winter                  | Leg-rye        | 3x                  | 9210           | 880    | 50       | 40            | 3.9    |

(continued on next page)
Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in *Data in Brief* article | System ID & description used in associated article in *PLoS One* | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Total Organic C mg kg\(^{-1}\) soil | Total N Mg ha\(^{-1}\) | Nitrate N Mg ha\(^{-1}\) |
|------------------------|------|-----------------------------------------------|-----------------------------------|-------------------------------------------------|--------------|-------------------------------|-----------------|------------------------|--------------------------------|----------------|------------------|
| 2                      | 8    | [ ] 4*                                         | 3-Compost + Legume-rye annually   | Yes                                             | Every winter | Leg-rye                       | 3x              |                        | 6395                                    | 640             | 39               |
| 3                      | 8    | [ ] 4*                                         | 3-Compost + Legume-rye annually   | Yes                                             | Every winter | Leg-rye                       | 3x              |                        | 7090                                    | 710             | 48               |
| 4                      | 8    | [ ] 4*                                         | 3-Compost + Legume-rye annually   | Yes                                             | Every winter | Leg-rye                       | 3x              |                        | 7359                                    | 730             | 42               |
| 1                      | 8    | [ ] 5*                                         | 4-Compost + Mustard annually      | Yes                                             | Every winter | Mustard                       | 1x              |                        | 7520                                    | 730             | 37               |
| 2                      | 8    | [ ] 5*                                         | 4-Compost + Mustard annually      | Yes                                             | Every winter | Mustard                       | 1x              |                        | 8871                                    | 830             | 37               |
| 3                      | 8    | [ ] 5*                                         | 4-Compost + Mustard annually      | Yes                                             | Every winter | Mustard                       | 1x              |                        | 6001                                    | 600             | 30               |
| 4                      | 8    | [ ] 5*                                         | 4-Compost + Mustard annually      | Yes                                             | Every winter | Mustard                       | 1x              |                        | 7267                                    | 700             | 47               |
| 1                      | 8    | NA 6*                                         | NA                                | Yes                                             | Every winter | Mustard                       | 3x              |                        | 8627                                    | 780             | 33               |
| 2                      | 8    | NA 6*                                         | NA                                | Yes                                             | Every winter | Mustard                       | 3x              |                        | 7603                                    | 760             | 35               |
| 3                      | 8    | NA 6*                                         | NA                                | Yes                                             | Every winter | Mustard                       | 3x              |                        | 6767                                    | 690             | 40               |
| 4                      | 8    | NA 6*                                         | NA                                | Yes                                             | Every winter | Mustard                       | 3x              |                        | 6991                                    | 680             | 35               |
| 1                      | 8    | [ ] 7*                                         | 5-Compost + Rye annually          | Yes                                             | Every winter | Rye                           | 1x              |                        | 6448                                    | 610             | 36               |
| 2                      | 8    | [ ] 7*                                         | 5-Compost + Rye annually          | Yes                                             | Every winter | Rye                           | 1x              |                        | 6903                                    | 680             | 38               |

(continued on next page)
### Table 2 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winter cover cropping frequency | Cover crop type | Cover crop seeding rate | Soil Carbon and Nitrogen Concentrations | Soil Carbon and Nitrogen Stocks |
|------------------------|------|-------------------------------------------------|-----------------------------------|---------------------------------------------------------------|---------------|---------------------------------|----------------|------------------------|--------------------------------------|------------------------------|
|                        |      |                                                 |                                   |                                                               |               |                                 |                |                        | mg kg⁻¹ soil                                      | Mg ha⁻¹ |
| 3                      | 8    | ▲                                               | 7*                                | 5-Compost + Rye annually                                      | Yes           | Every winter                    | Rye            | 1x                     | 36                                                                  | 3.5  |
| 4                      | 8    | ▲                                               | 7*                                | 5-Compost + Rye annually                                      | Yes           | Every winter                    | Rye            | 1x                     | 10,200                                                             | 43   |
| 1                      | 8    | NA                                             | 8*                                | NA                                                            | Yes           | Every winter                    | Rye            | 3x                     | 7855                                                               | 35   |
| 2                      | 8    | NA                                             | 8*                                | NA                                                            | Yes           | Every winter                    | Rye            | 3x                     | 6348                                                               | 29   |
| 3                      | 8    | NA                                             | 8*                                | NA                                                            | Yes           | Every winter                    | Rye            | 3x                     | 7401                                                               | 32   |
| 4                      | 8    | NA                                             | 8*                                | NA                                                            | Yes           | Every winter                    | Rye            | 3x                     | 7567                                                               | 32   |

1 The data provided in this table is from the Salinas Organic Cropping Systems (SOCS) study in Salinas, California. This includes soil total organic carbon, total nitrogen and nitrate-N data for all 8 systems in the SOCS study at the beginning of the study (year 0) and for subsequent 8 years. However, the analysis for only 5 systems with optimal seeding rates for weed suppression were included in the related article in PLoS ONE [1]. The experimental design was a randomized complete block with 4 blocks (i.e., replicates). These data are provided to give readers an opportunity to use the data for future meta-analyses, or analysis of confidence intervals, effect sizes, etc. in the Explanatory Software for Confidence Intervals (ESCI) produced by Geoff Cumming. ESCI is freely available at [https://thenewstatistics.com/its/esci/](https://thenewstatistics.com/its/esci/).

2 To account for changes in soil bulk density over time, organic carbon and nitrogen stocks were calculated using the Maximum Equivalent Soil Mass Method [7].

3 The symbols, shapes, and colors used in the PLoS ONE article. Note that in the PLoS ONE article the data for only 5 systems were included, but in this Data in Brief article, the data for all 8 systems is included. NA = not applicable because the system was not included in the PLoS ONE article.

4 In this Data in Brief article, these numbers (1 to 8) are used for the 8 systems.

5 In the PLoS ONE article only 5 systems with seeding rates that provided optimal weed suppression were included. NA = not applicable because these 3 systems were not included in the PLoS ONE article.

6 The application rate for compost, which was applied prior to each vegetable crop, was 7.6 Mg ha⁻¹ on an oven dry weight basis. The compost was made from urban yard waste.

7 Winter cover cropping period was from October or November to February or March.

8 See Table 1 for details on the cover crop types and seeding rates.
Table 3

Raw data of cumulative cover crop and vegetable carbon inputs, legume nitrogen fixation, cover crop and vegetable crop N uptake and export during 8 years at the Salinas Organic Cropping Systems experiment in Salinas, California. This includes data from all eight systems in the experiment. The related article in PLoS ONE [1] only included data from five of the eight systems with optimal seeding rates for weed suppression. A Microsoft Excel version of the table is available in the supplementary material (Supplementary Table 2).

| Block (i.e. replicate) | Symbol color & shape in PLoS One article 2 | System ID in Data in Brief article 3 | System ID & description used in associated article in PLoS ONE 4 | Compost added 5 | Cover crop growing frequency 6 | Cover crop type 7 | Cover crop seeding rate 7 | Cover Crop Shoot C | Cover Crop Root C | Vegetable Shoot Residue C | Vegetable Root C | Vegetable Root Exudate C | Legume N Fixation | Cover Crop N Uptake | Vegetable Residue N | Lettuce N Uptake | Broccoli N Uptake | N Export in Lettuce Harvest | N Export in Broccoli Harvest |
|-----------------------|--------------------------------------------|-------------------------------------|--------------------------------------------------------------|----------------|-------------------------------|-----------------|---------------------------|-------------------|-------------------|-----------------------------|---------------|-----------------------------|------------------|---------------------|-------------------|----------------|----------------|---------------------------|---------------------|
| 1                     | 1*                                         | 1-No Compost + Legume-rye 4th Year | Year                                                        | No             | Every 4th winter              | Leg-rye         | 3x                         | 5.45              | 1.06              | 0.691                        | 17.7          | 5.23                         | 3.40             | 135                 | 169               | 1298            | 534               | 1182                        | 116                | 303               |
| 2                     | 1*                                         | 1-No Compost + Legume-rye 4th Year | Year                                                        | No             | Every 4th winter              | Leg-rye         | 3x                         | 6.02              | 1.16              | 0.756                        | 17.1          | 5.07                         | 3.30             | 132                 | 167               | 1295            | 511               | 1222                        | 111                | 327               |
| 3                     | 1*                                         | 1-No Compost + Legume-rye 4th Year | Year                                                        | No             | Every 4th winter              | Leg-rye         | 3x                         | 6.78              | 1.31              | 0.852                        | 16.5          | 4.89                         | 3.18             | 149                 | 199               | 1306            | 493               | 1248                        | 107                | 328               |
| 4                     | 1*                                         | 1-No Compost + Legume-rye 4th Year | Year                                                        | No             | Every 4th winter              | Leg-rye         | 3x                         | 6.92              | 1.34              | 0.869                        | 16.3          | 4.83                         | 3.14             | 150                 | 190               | 1269            | 470               | 1223                        | 102                | 322               |
| 1                     | 2*                                         | 2- Compost + Legume-rye 4th Year | Year                                                        | Yes            | Every 4th winter              | Leg-rye         | 3x                         | 6.71              | 1.29              | 0.838                        | 16.9          | 5.04                         | 3.27             | 134                 | 220               | 1257            | 544               | 1130                        | 118                | 298               |
| 2                     | 2*                                         | 2- Compost + Legume-rye 4th Year | Year                                                        | Yes            | Every 4th winter              | Leg-rye         | 3x                         | 6.97              | 1.35              | 0.875                        | 18.2          | 5.42                         | 3.52             | 149                 | 216               | 1491            | 656               | 1324                        | 143                | 346               |
| 3                     | 2*                                         | 2- Compost + Legume-rye 4th Year | Year                                                        | Yes            | Every 4th winter              | Leg-rye         | 3x                         | 6.52              | 1.26              | 0.821                        | 18.9          | 5.63                         | 3.66             | 147                 | 202               | 1525            | 654               | 1369                        | 142                | 356               |
| 4                     | 2*                                         | 2- Compost + Legume-rye 4th Year | Year                                                        | Yes            | Every 4th winter              | Leg-rye         | 3x                         | 6.30              | 1.23              | 0.801                        | 18.0          | 5.35                         | 3.48             | 159                 | 202               | 1502            | 648               | 1348                        | 141                | 353               |

(continued on next page)
### Table 3 (continued)

| Block (i.e. replicate) | Symbol color & shape in Plus One figures | System ID in article | System ID & description used in associated article in Plus ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Cumulative Plant Carbon and Nitrogen Inputs | Cumulative Nitrogen Uptake and Export |
|------------------------|------------------------------------------|----------------------|---------------------------------------------------------------|---------------|------------------------------|----------------|---------------------|------------------------------------------|------------------------------------------|
|                        |                                          |                      |                                                               |               |                             |                |                     | Mg ha⁻¹                                                      | kg ha⁻¹                                                   |
| 1          | NA 3* | NA 3*                          | Yes                 | Every winter          | Leg-rye        | 1x                          | 23.5          | 4.46 | 2.90 | 19.4 | 5.75 | 3.74 | 387 | 933 | 1990 | 886 | 1719 | 193 | 423 |
| 2          | NA 3* | NA 3*                          | Yes                 | Every winter          | Leg-rye        | 1x                          | 25.0          | 4.79 | 3.11 | 19.0 | 5.64 | 3.66 | 482 | 875 | 1741 | 859 | 1449 | 187 | 381 |
| 3          | NA 3* | NA 3*                          | Yes                 | Every winter          | Leg-rye        | 1x                          | 24.9          | 4.68 | 3.04 | 19.9 | 5.89 | 3.83 | 360 | 967 | 1855 | 853 | 1599 | 186 | 412 |
| 4          | NA 3* | NA 3*                          | Yes                 | Every winter          | Leg-rye        | 1x                          | 23.8          | 4.44 | 2.88 | 20.9 | 6.18 | 4.02 | 281 | 1102 | 2119 | 879 | 1912 | 191 | 481 |
| 1          | 4*    | 4*                            | Yes                 | Every winter          | Leg-rye        | 3x                          | 25.5          | 4.88 | 3.17 | 19.7 | 5.89 | 3.83 | 481 | 1145 | 1960 | 965 | 1621 | 210 | 416 |
| 2          | 4*    | 4*                            | Yes                 | Every winter          | Leg-rye        | 3x                          | 25.8          | 4.86 | 3.16 | 21.0 | 6.26 | 4.07 | 379 | 1054 | 2077 | 900 | 1883 | 196 | 510 |
| 3          | 4*    | 4*                            | Yes                 | Every winter          | Leg-rye        | 3x                          | 27.5          | 5.29 | 3.44 | 20.9 | 6.25 | 4.06 | 567 | 1033 | 2009 | 952 | 1705 | 207 | 441 |
| 4          | 4*    | 4*                            | Yes                 | Every winter          | Leg-rye        | 3x                          | 26.9          | 5.06 | 3.29 | 19.9 | 5.93 | 3.85 | 371 | 1074 | 1992 | 889 | 1750 | 193 | 454 |
| 1          | 5*    | 4*                            | Yes                 | Every winter          | Mustard        | 1x                          | 16.5          | 2.62 | 1.71 | 18.1 | 5.39 | 3.50 | 0   | 805  | 1551 | 724 | 1339 | 157 | 354 |
| 2          | 5*    | 4*                            | Yes                 | Every winter          | Mustard        | 1x                          | 19.1          | 3.03 | 1.97 | 18.8 | 5.61 | 3.65 | 0   | 1027 | 1833 | 808 | 1631 | 176 | 430 |
| 3          | 5*    | 4*                            | Yes                 | Every winter          | Mustard        | 1x                          | 18.5          | 2.94 | 1.91 | 20.6 | 6.13 | 3.98 | 0   | 1053 | 1846 | 823 | 1614 | 179 | 412 |
| 4          | 5*    | 4*                            | Yes                 | Every winter          | Mustard        | 1x                          | 20.2          | 3.21 | 2.09 | 20.4 | 6.05 | 3.93 | 0   | 1243 | 1969 | 842 | 1786 | 183 | 476 |

(continued on next page)
### Table 3 (continued)

| Block (i.e. replicate) | Symbol color & shape in PloS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PloS ONE | Compost added | Winer cover cropping frequency | Cover crop seeding rate | Cover crop type | Cover Crop Shoot C | Cover Crop Root C | Cover Crop Exudate C | Cover Shoot C | Cover Root C | Cover Exudate C | Vegetable Shoot Residue C | Vegetable Root C | Vegetable Exudate C | Legume N Fixation | N Export in Broccoli N Uptake | N Export in Lettuce N Uptake | N Export in Broccoli N Harvest | N Export in Lettuce Harvest | N Export in Broccoli Harvest |
|-----------------------|-----------------------------------------------|----------------------------------|-------------------------------------------------|---------------|--------------------------------|------------------------|----------------|-----------------|----------------|------------------|-------------|-------------|----------------|-----------------------------|----------------|----------------|----------------|--------------------------|------------------------|----------------|----------------|----------------|
| 1                     | NA 6°                                         | NA                               | Yes                                             | Every winter Mustard 3x | 22.1                    | 3.94                    | 2.56                | 18.9             | 5.60            | 3.64            | 0           | 1332        | 1871        | 872                | 1616            | 190            | 427            |                          |                        |                        |                        |                          |
| 2                     | NA 6°                                         | NA                               | Yes                                             | Every winter Mustard 3x | 21.7                    | 3.88                    | 2.52                | 21.0             | 6.18            | 4.02            | 0           | 1035        | 1871        | 831                | 1646            | 181            | 425            |                          |                        |                        |                        |                          |
| 3                     | NA 6°                                         | NA                               | Yes                                             | Every winter Mustard 3x | 18.0                    | 3.21                    | 2.09                | 19.3             | 5.71            | 3.71            | 0           | 870         | 1712        | 826                | 1444            | 180            | 379            |                          |                        |                        |                        |                          |
|                        | NA 6°                                         | NA                               | Yes                                             | Every winter Mustard 3x | 19.3                    | 3.44                    | 2.24                | 20.1             | 5.94            | 3.86            | 0           | 1036        | 1851        | 876                | 1588            | 190            | 421            |                          |                        |                        |                        |                          |
| 4                     | ▲ 7°                                           | 5-Compost + Rye annually         | Yes                                             | Every winter Rye 1x     | 24.4                    | 4.37                    | 2.84                | 18.7             | 5.59            | 3.63            | 0           | 1023        | 1616        | 803                | 1328            | 175            | 340            |                          |                        |                        |                        |                          |
|                        | ▲ 7°                                           | 5-Compost + Rye annually         | Yes                                             | Every winter Rye 1x     | 23.1                    | 4.13                    | 2.68                | 17.9             | 5.36            | 3.48            | 0           | 831         | 1538        | 726                | 1321            | 158            | 352            |                          |                        |                        |                        |                          |
|                        | ▲ 7°                                           | 5-Compost + Rye annually         | Yes                                             | Every winter Rye 1x     | 24.6                    | 4.39                    | 2.85                | 20.3             | 6.03            | 3.92            | 0           | 1016        | 1765        | 787                | 1553            | 171            | 403            |                          |                        |                        |                        |                          |
|                        | ▲ 7°                                           | 5-Compost + Rye annually         | Yes                                             | Every winter Rye 1x     | 28.6                    | 5.11                    | 3.32                | 20.6             | 6.13            | 3.98            | 0           | 1272        | 1909        | 861                | 1665            | 187            | 430            |                          |                        |                        |                        |                          |
| 1                     | NA 8°                                         | NA                               | Yes                                             | Every winter Rye 3x     | 25.7                    | 4.59                    | 2.98                | 19.6             | 5.80            | 3.77            | 0           | 1104        | 1814        | 835                | 1565            | 182            | 404            |                          |                        |                        |                        |                          |
| 2                     | NA 8°                                         | NA                               | Yes                                             | Every winter Rye 3x     | 23.6                    | 4.21                    | 2.74                | 19.6             | 5.79            | 3.77            | 0           | 994         | 1698        | 817                | 1436            | 178            | 377            |                          |                        |                        |                        |                          |
| 3                     | NA 8°                                         | NA                               | Yes                                             | Every winter Rye 3x     | 24.4                    | 4.35                    | 2.83                | 18.6             | 5.51            | 3.58            | 0           | 891         | 1633        | 724                | 1441            | 157            | 375            |                          |                        |                        |                        |                          |
| 4                     | NA 8°                                         | NA                               | Yes                                             | Every winter Rye 3x     | 27.4                    | 4.96                    | 3.22                | 19.5             | 5.76            | 3.74            | 0           | 1084        | 1641        | 765                | 1411            | 166            | 368            |                          |                        |                        |                        |                          |

1. The data provided in this table is from the Salinas Organic Cropping Systems (SOCs) study in Salinas, California. This includes cumulative cover crop and vegetable carbon inputs, legume nitrogen fixation, cover crop and vegetable N uptake and export for all 8 systems in the SOCS study over 8 years. However, the analysis for only 5 systems with optimal seeding rates for weed suppression were included in the related article in PloS ONE [1]. The experimental design was a randomized complete block with 4 blocks (i.e., replicates). These data are provided to give readers an opportunity to use the data for future meta-analyses, or analysis of confidence intervals, effect sizes, etc. in the Explanatory Software for Confidence Intervals (ESCI) produced by Geoff Cumming. ESCI is freely available at [https://thenewstatistics.com/itns/esci/](https://thenewstatistics.com/itns/esci/).

2. The symbols, shapes, and colors used in the PloS ONE article. Note that in the PloS ONE article the data for only 5 systems were included, but in this Data in Brief article, the data for all 8 systems is included. NA= not applicable because the system was not included in the PloS ONE article.

3. In this Data in Brief article, these numbers (1–8) are used for the 8 systems.

4. In the PloS ONE article only 5 systems with seeding rates that provided optimal weed suppression were included. NA= not applicable because these 3 systems were not included in the PloS ONE article.

5. The application rate for compost, which was applied prior to each vegetable crop, was 7.6 Mg ha$^{-1}$ on an oven dry weight basis. The compost was made from urban yard waste.

6. Winter cover cropping period was from October or November to February or March.

7. See Table 1 for details on the cover crop types and seeding rates.
**Table 4**

Raw data of soil permanganate oxidizable carbon (POX-C) concentrations and stocks at the 0 to 6.7 cm depth in years 0 and 6, and the 0 to 30 cm depth in year 8 from the Salinas Organic Cropping Systems experiment in Salinas, California. This data from five of the eight systems with optimal seeding rates for weed suppression was included in the related paper in PLoS ONE [1]. A Microsoft Excel version of the table is available in the supplementary material (Supplementary Table 3).

Overview of the data

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS ONE article figures | System ID in Data Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|------------------------|------|-----------------------------------------------|--------------------------------|-------------------------------------------------------------|---------------|-------------------------------|----------------|------------------------|-------------|----------------------|-------------|
|                        |      |                                               |                                |                                                             |               |                               |                |                        |              | cm                   | mg kg⁻¹     | Mg ha⁻¹             |
| 1                      | 0    | ■                                              | 1*                            | 1-No Compost + Legume-rye                                   | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 316                   | 0.293       |
| 2                      | 0    | ■                                              | 1*                            | 1-No Compost + Legume-rye                                   | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 327                   | 0.303       |
| 3                      | 0    | ■                                              | 1*                            | 1-No Compost + Legume-rye                                   | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 321                   | 0.298       |
| 4                      | 0    | ■                                              | 1*                            | 1-No Compost + Legume-rye                                   | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 324                   | 0.301       |
| 1                      | 0    | ■                                              | 2*                            | 2-Compost + Legume-rye                                       | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 316                   | 0.293       |
| 2                      | 0    | ■                                              | 2*                            | 2-Compost + Legume-rye                                       | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 321                   | 0.298       |
| 3                      | 0    | ■                                              | 2*                            | 2-Compost + Legume-rye                                       | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 341                   | 0.316       |
| 4                      | 0    | ■                                              | 2*                            | 2-Compost + Legume-rye                                       | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5    | 322                   | 0.299       |
| 1                      | 0    | NA                                             | 3*                            | NA                                                           | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5    | NA                    | NA          |
| 2                      | 0    | NA                                             | 3*                            | NA                                                           | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5    | NA                    | NA          |
| 3                      | 0    | NA                                             | 3*                            | NA                                                           | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5    | NA                    | NA          |
| 4                      | 0    | NA                                             | 3*                            | NA                                                           | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5    | NA                    | NA          |
| 1                      | 0    | ■                                              | 4*                            | 3-Compost + Legume-rye annually                              | Yes           | Every winter                  | Leg-rye        | 3x                     | 0 to 6.5    | 319                   | 0.296       |
| 2                      | 0    | ■                                              | 4*                            | 3-Compost + Legume-rye annually                              | Yes           | Every winter                  | Leg-rye        | 3x                     | 0 to 6.5    | 364                   | 0.338       |

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Table 4 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS ONE article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|------------------------|------|--------------------------------------------------|-----------------------------------|---------------------------------------------------|---------------|-------------------------------|----------------|------------------------|--------------|----------------------|-----------|
|                        | 3    | ![white] 4*                                    | ![white] 3-Compost + Legume-rye annually | ![white] Yes Every winter | ![white] Leg-rye | ![white] 3x | ![white] 0 to 6.5 | ![white] 363 | ![white] 0.337 |               |
|                        | 4    | ![white] 4*                                    | ![white] 3-Compost + Legume-rye annually | ![white] Yes Every winter | ![white] Leg-rye | ![white] 3x | ![white] 0 to 6.5 | ![white] 362 | ![white] 0.336 |               |
|                        | 1    | ![white] 5*                                    | ![white] 4-Compost + Mustard annually | ![white] Yes Every winter | ![white] Mustard | ![white] 1x | ![white] 0 to 6.5 | ![white] 252 | ![white] 0.234 |               |
|                        | 2    | ![white] 5*                                    | ![white] 4-Compost + Mustard annually | ![white] Yes Every winter | ![white] Mustard | ![white] 1x | ![white] 0 to 6.5 | ![white] 318 | ![white] 0.295 |               |
|                        | 3    | ![white] 5*                                    | ![white] 4-Compost + Mustard annually | ![white] Yes Every winter | ![white] Mustard | ![white] 1x | ![white] 0 to 6.5 | ![white] 317 | ![white] 0.295 |               |
|                        | 4    | ![white] 5*                                    | ![white] 4-Compost + Mustard annually | ![white] Yes Every winter | ![white] Mustard | ![white] 1x | ![white] 0 to 6.5 | ![white] 354 | ![white] 0.329 |               |
|                        | 1    | ![white] NA 6*                                 | ![white] NA | ![white] Yes Every winter | ![white] Mustard | ![white] 3x | ![white] 0 to 6.5 | ![white] NA | ![white] NA |               |
|                        | 2    | ![white] NA 6*                                 | ![white] NA | ![white] Yes Every winter | ![white] Mustard | ![white] 3x | ![white] 0 to 6.5 | ![white] NA | ![white] NA |               |
|                        | 3    | ![white] NA 6*                                 | ![white] NA | ![white] Yes Every winter | ![white] Mustard | ![white] 3x | ![white] 0 to 6.5 | ![white] NA | ![white] NA |               |
|                        | 4    | ![white] NA 6*                                 | ![white] NA | ![white] Yes Every winter | ![white] Mustard | ![white] 3x | ![white] 0 to 6.5 | ![white] NA | ![white] NA |               |
|                        | 1    | ![white] ▲ 7*                                  | ![white] 5-Compost + Rye annually | ![white] Yes Every winter | ![white] Rye | ![white] 1x | ![white] 0 to 6.5 | ![white] 403 | ![white] 0.37 |               |
|                        | 2    | ![white] ▲ 7*                                  | ![white] 5-Compost + Rye annually | ![white] Yes Every winter | ![white] Rye | ![white] 1x | ![white] 0 to 6.5 | ![white] 365 | ![white] 0.34 |               |
|                        | 3    | ![white] ▲ 7*                                  | ![white] 5-Compost + Rye annually | ![white] Yes Every winter | ![white] Rye | ![white] 1x | ![white] 0 to 6.5 | ![white] 413 | ![white] 0.38 |               |
|                        | 4    | ![white] ▲ 7*                                  | ![white] 5-Compost + Rye annually | ![white] Yes Every winter | ![white] Rye | ![white] 1x | ![white] 0 to 6.5 | ![white] 390 | ![white] 0.36 |               |

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Table 4 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS ONE article figures | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|------------------------|------|--------------------------------------------------|-------------------------------------------------------------|---------------|-------------------------------|----------------|------------------------|--------------|--------------------|------------|
|                        |      |                                                  |                                                             |               |                               |                |                        | cm           | mg kg⁻¹            | Mg ha⁻¹    |
| 1 0                    | NA   | 8*                                               | NA                                                          | Yes           | Every winter                  | Rye            | 3x                     | 0 to 6.5     | NA                 | NA         |
| 2 0                    | NA   | 8*                                               | NA                                                          | Yes           | Every winter                  | Rye            | 3x                     | 0 to 6.5     | NA                 | NA         |
| 3 0                    | NA   | 8*                                               | NA                                                          | Yes           | Every winter                  | Rye            | 3x                     | 0 to 6.5     | NA                 | NA         |
| 4 0                    | NA   | 8*                                               | NA                                                          | Yes           | Every winter                  | Rye            | 3x                     | 0 to 6.5     | NA                 | NA         |
| 1 6                    | NA   | 1*                                               | 1-No Compost + Legume-rye 4th Year                           | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 349                | 0.324      |
| 2 6                    | NA   | 1*                                               | 1-No Compost + Legume-rye 4th Year                           | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 369                | 0.343      |
| 3 6                    | NA   | 1*                                               | 1-No Compost + Legume-rye 4th Year                           | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 342                | 0.318      |
| 4 6                    | NA   | 1*                                               | 1-No Compost + Legume-rye 4th Year                           | No            | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 360                | 0.334      |
| 1 6                    | NA   | 2*                                               | 2-Compost + Legume-rye 4th Year                              | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 366                | 0.339      |
| 2 6                    | NA   | 2*                                               | 2-Compost + Legume-rye 4th Year                              | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 498                | 0.462      |
| 3 6                    | NA   | 2*                                               | 2-Compost + Legume-rye 4th Year                              | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 417                | 0.388      |
| 4 6                    | NA   | 2*                                               | 2-Compost + Legume-rye 4th Year                              | Yes           | Every 4th winter              | Leg-rye        | 3x                     | 0 to 6.5     | 479                | 0.445      |
| 1 6                    | NA   | 3*                                               | NA                                                          | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5     | NA                 | NA         |
| 2 6                    | NA   | 3*                                               | NA                                                          | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5     | NA                 | NA         |
| 3 6                    | NA   | 3*                                               | NA                                                          | Yes           | Every winter                  | Leg-rye        | 1x                     | 0 to 6.5     | NA                 | NA         |

(continued on next page)
| Block (i.e. replicate) | Year | Symbol color & shape in PLoS ONE article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|-----------------------|------|--------------------------------------------------|-----------------------------------|---------------------------------------------------------------|---------------|-----------------------------|----------------|----------------------|--------------|---------------------|-------------|
| 4                     | 6    | NA                                               | 3*                                | NA                                                             | Yes           | Every winter                | Leg-rye        | 1x                   | 0 to 6.5     | NA                  | NA          |
| 1                     | 6    | ■                                                | 4*                                | 3-Compost + Legume-rye annually                                | Yes           | Every winter                | Leg-rye        | 3x                   | 0 to 6.5     | 551                 | 0.512       |
| 2                     | 6    | ■                                                | 4*                                | 3-Compost + Legume-rye annually                                | Yes           | Every winter                | Leg-rye        | 3x                   | 0 to 6.5     | 552                 | 0.513       |
| 3                     | 6    | ■                                                | 4*                                | 3-Compost + Legume-rye annually                                | Yes           | Every winter                | Leg-rye        | 3x                   | 0 to 6.5     | 609                 | 0.566       |
| 4                     | 6    | ■                                                | 4*                                | 3-Compost + Legume-rye annually                                | Yes           | Every winter                | Leg-rye        | 3x                   | 0 to 6.5     | 546                 | 0.507       |
| 1                     | 6    | ◆                                                | 5*                                | 4-Compost + Mustard annually                                  | Yes           | Every winter                | Mustard        | 1x                   | 0 to 6.5     | 523                 | 0.486       |
| 2                     | 6    | ◆                                                | 5*                                | 4-Compost + Mustard annually                                  | Yes           | Every winter                | Mustard        | 1x                   | 0 to 6.5     | 574                 | 0.533       |
| 3                     | 6    | ◆                                                | 5*                                | 4-Compost + Mustard annually                                  | Yes           | Every winter                | Mustard        | 1x                   | 0 to 6.5     | 594                 | 0.551       |
| 4                     | 6    | ◆                                                | 5*                                | 4-Compost + Mustard annually                                  | Yes           | Every winter                | Mustard        | 1x                   | 0 to 6.5     | 611                 | 0.568       |
| 1                     | 6    | NA                                               | 6*                                | NA                                                             | Yes           | Every winter                | Mustard        | 3x                   | 0 to 6.5     | NA                  | NA          |
| 2                     | 6    | NA                                               | 6*                                | NA                                                             | Yes           | Every winter                | Mustard        | 3x                   | 0 to 6.5     | NA                  | NA          |
| 3                     | 6    | NA                                               | 6*                                | NA                                                             | Yes           | Every winter                | Mustard        | 3x                   | 0 to 6.5     | NA                  | NA          |
| 4                     | 6    | NA                                               | 6*                                | NA                                                             | Yes           | Every winter                | Mustard        | 3x                   | 0 to 6.5     | NA                  | NA          |
| 1                     | 6    | ▲                                                | 7*                                | 5-Compost + Rye annually                                       | Yes           | Every winter                | Rye            | 1x                   | 0 to 6.5     | 601                 | 0.558       |
| 2                     | 6    | ▲                                                | 7*                                | 5-Compost + Rye annually                                       | Yes           | Every winter                | Rye            | 1x                   | 0 to 6.5     | 551                 | 0.512       |

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| Block (i.e. replicate) | Year | Symbol color & shape in Data in Brief figures | System ID in Data in Brief | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|-----------------------|------|-----------------------------------------------|-----------------------------|-------------------------------------------------------------|---------------|--------------------------------|---------------|---------------------|--------------|---------------------|------------|
| 3                     | 6    | ▲                                              | 7*                          | 5-Compost + Rye annually                                    | Yes           | Every winter                    | Rye           | 1x                  | 0 to 6.5    | 497                | 0.461      |
| 4                     | 6    | ▲                                              | 7*                          | 5-Compost + Rye annually                                    | Yes           | Every winter                    | Rye           | 1x                  | 0 to 6.5    | 589                | 0.546      |
| 1                     | 6    | NA                                            | 8*                          | NA                                                          | Yes           | Every winter                    | Rye           | 3x                  | 0 to 6.5    | NA                 | NA         |
| 2                     | 6    | NA                                            | 8*                          | NA                                                          | Yes           | Every winter                    | Rye           | 3x                  | 0 to 6.5    | NA                 | NA         |
| 3                     | 6    | NA                                            | 8*                          | NA                                                          | Yes           | Every winter                    | Rye           | 3x                  | 0 to 6.5    | NA                 | NA         |
| 4                     | 6    | NA                                            | 8*                          | NA                                                          | Yes           | Every winter                    | Rye           | 3x                  | 0 to 6.5    | NA                 | NA         |
| 1                     | 8    | ■                                              | 1*                          | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 393                | 1.63       |
| 2                     | 8    | ■                                              | 1*                          | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 426                | 1.77       |
| 3                     | 8    | ■                                              | 1*                          | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 365                | 1.52       |
| 4                     | 8    | ■                                              | 1*                          | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 351                | 1.46       |
| 1                     | 8    | ■                                              | 2*                          | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 356                | 1.48       |
| 2                     | 8    | ■                                              | 2*                          | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 516                | 2.15       |
| 3                     | 8    | ■                                              | 2*                          | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 486                | 2.02       |
| 4                     | 8    | ■                                              | 2*                          | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter                | Leg-rye       | 3x                  | 0 to 30      | 443                | 1.84       |
| 1                     | 8    | NA                                            | 3*                          | NA                                                          | Yes           | Every winter                    | Leg-rye       | 1x                  | 0 to 30      | NA                 | NA         |

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Table 4 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in Data in Brief figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|------------------------|------|---------------------------------------------|-----------------------------------|-------------------------------------------------------------|---------------|--------------------------------|----------------|------------------------|--------------|---------------------|-------------|
|                        | 2    | NA                                          | 3* NA                            | Yes                                                                          | Every winter  | 1x                             | Leg-rye        | 0 to 30                | NA           | NA                  |             |
|                        | 3    | NA                                          | 3* NA                            | Yes                                                                          | Every winter  | 1x                             | Leg-rye        | 0 to 30                | NA           | NA                  |             |
|                        | 4    | NA                                          | 3* NA                            | Yes                                                                          | Every winter  | 1x                             | Leg-rye        | 0 to 30                | NA           | NA                  |             |
|                        | 1    | 4* Black                                    | 3-Compost + Legume-rye annually | Yes                                                                          | Every winter  | 3x                             | Leg-rye        | 0 to 30                | 578          | 2.40                |             |
|                        | 2    | 4* Black                                    | 3-Compost + Legume-rye annually | Yes                                                                          | Every winter  | 3x                             | Leg-rye        | 0 to 30                | 565          | 2.35                |             |
|                        | 3    | 4* Black                                    | 3-Compost + Legume-rye annually | Yes                                                                          | Every winter  | 3x                             | Leg-rye        | 0 to 30                | 592          | 2.46                |             |
|                        | 4    | 4* Black                                    | 3-Compost + Legume-rye annually | Yes                                                                          | Every winter  | 3x                             | Leg-rye        | 0 to 30                | 534          | 2.22                |             |
|                        | 1    | 5* Red                                      | 4-Compost + Mustard annually     | Yes                                                                          | Every winter  | 1x                             | Mustard        | 0 to 30                | 492          | 2.04                |             |
|                        | 2    | 5* Red                                      | 4-Compost + Mustard annually     | Yes                                                                          | Every winter  | 1x                             | Mustard        | 0 to 30                | 576          | 2.39                |             |
|                        | 3    | 5* Red                                      | 4-Compost + Mustard annually     | Yes                                                                          | Every winter  | 1x                             | Mustard        | 0 to 30                | 573          | 2.38                |             |
|                        | 4    | 5* Red                                      | 4-Compost + Mustard annually     | Yes                                                                          | Every winter  | 1x                             | Mustard        | 0 to 30                | 528          | 2.20                |             |
|                        | 1    | NA                                          | 6* NA                            | Yes                                                                          | Every winter  | 3x                             | Mustard        | 0 to 30                | NA           | NA                  |             |
|                        | 2    | NA                                          | 6* NA                            | Yes                                                                          | Every winter  | 3x                             | Mustard        | 0 to 30                | NA           | NA                  |             |
|                        | 3    | NA                                          | 6* NA                            | Yes                                                                          | Every winter  | 3x                             | Mustard        | 0 to 30                | NA           | NA                  |             |

(continued on next page)
| Block (i.e. replicate) | Year | Symbol color & shape in PLoS ONE figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winem cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|-----------------------|------|------------------------------------------|-----------------------------------|-------------------------------------------------------------|---------------|-----------------------------|---------------|--------------------|--------------|---------------------|------------|
| 4                     | 8    | NA                                       | 6*                                | NA                                                          | Yes           | Every winter                | Mustard       | 3x                 | 0 to 30      | NA                  | NA         |
| 1                     | 8    | ▲                                         | 7*                                | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye           | 1x                 | 0 to 30      | 578                 | 2.40       |
| 2                     | 8    | ▲                                         | 7*                                | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye           | 1x                 | 0 to 30      | 558                 | 2.32       |
| 3                     | 8    | ▲                                         | 7*                                | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye           | 1x                 | 0 to 30      | 562                 | 2.34       |
| 4                     | 8    | ▲                                         | 7*                                | 5-Compost + Rye annually                                     | Yes           | Every winter                | Rye           | 1x                 | 0 to 30      | 598                 | 2.49       |
| 1                     | 8    | NA                                       | 8*                                | NA                                                          | Yes           | Every winter                | Rye           | 3x                 | 0 to 30      | NA                  | NA         |
| 2                     | 8    | NA                                       | 8*                                | NA                                                          | Yes           | Every winter                | Rye           | 3x                 | 0 to 30      | NA                  | NA         |
| 3                     | 8    | NA                                       | 8*                                | NA                                                          | Yes           | Every winter                | Rye           | 3x                 | 0 to 30      | NA                  | NA         |
| 4                     | 8    | NA                                       | 8*                                | NA                                                          | Yes           | Every winter                | Rye           | 3x                 | 0 to 30      | NA                  | NA         |
| 1                     | Change over 6 yrs | □                                      | 1*                                | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye       | 3x                 | 0 to 6.5     | 34                  | 0.031      |
| 2                     | Change over 6 yrs | □                                      | 1*                                | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye       | 3x                 | 0 to 6.5     | 43                  | 0.039      |
| 3                     | Change over 6 yrs | □                                      | 1*                                | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye       | 3x                 | 0 to 6.5     | 21                  | 0.020      |
| 4                     | Change over 6 yrs | □                                      | 1*                                | 1-No Compost + Legume-rye 4th Year                          | No            | Every 4th winter            | Leg-rye       | 3x                 | 0 to 6.5     | 36                  | 0.033      |
| 1                     | Change over 6 yrs | □                                      | 2*                                | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter            | Leg-rye       | 3x                 | 0 to 6.5     | 50                  | 0.046      |
| 2                     | Change over 6 yrs | □                                      | 2*                                | 2-Compost + Legume-rye 4th Year                             | Yes           | Every 4th winter            | Leg-rye       | 3x                 | 0 to 6.5     | 177                 | 0.164      |

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### Table 4 (continued)

| Block (i.e. replicate) | Year | Symbol shape in PLoS ONE article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added[^5] | Winer cover cropping frequency[^7] | Cover crop type[^8] | Cover crop seeding rate[^8] | Sample Depth | POX-C Concentration | POX-C Stock |
|-----------------------|------|------------------------------------------|----------------------------------|-------------------------------------------------------------|-------------------|-------------------------------------|-------------------|------------------------|--------------|----------------------|-------------|
| 3                     | Change over 6 yrs | 2[^*] | 2-Compost + Legume-rye 4th Year | Yes | Every 4th winter | Leg-rye | 3x | 0 to 6.5 | 77 | 0.071 |
| 4                     | Change over 6 yrs | 2[^*] | 2-Compost + Legume-rye 4th Year | Yes | Every 4th winter | Leg-rye | 3x | 0 to 6.5 | 157 | 0.146 |
| 1                     | Change over 6 yrs | NA | NA | Yes | Every winter | Leg-rye | 1x | 0 to 6.5 | NA | NA |
| 2                     | Change over 6 yrs | NA | NA | Yes | Every winter | Leg-rye | 1x | 0 to 6.5 | NA | NA |
| 3                     | Change over 6 yrs | NA | NA | Yes | Every winter | Leg-rye | 1x | 0 to 6.5 | NA | NA |
| 4                     | Change over 6 yrs | NA | NA | Yes | Every winter | Leg-rye | 1x | 0 to 6.5 | NA | NA |
| 1                     | Change over 6 yrs | 4[^*] | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 0 to 6.5 | 233 | 0.216 |
| 2                     | Change over 6 yrs | 4[^*] | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 0 to 6.5 | 188 | 0.175 |
| 3                     | Change over 6 yrs | 4[^*] | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 0 to 6.5 | 247 | 0.229 |
| 4                     | Change over 6 yrs | 4[^*] | 3-Compost + Legume-rye annually | Yes | Every winter | Leg-rye | 3x | 0 to 6.5 | 184 | 0.171 |
| 1                     | Change over 6 yrs | 5[^*] | 4-Compost + Mustard annually | Yes | Every winter | Mustard | 1x | 0 to 6.5 | 271 | 0.251 |
| 2                     | Change over 6 yrs | 5[^*] | 4-Compost + Mustard annually | Yes | Every winter | Mustard | 1x | 0 to 6.5 | 257 | 0.238 |

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### Table 4 (continued)

| Block (i.e. replicate) | Year  | Symbol color & shape in Data in Brief figures | System ID in PLoS ONE article | System ID & description used in associated article in PLoS ONE | Compost added | Winer cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|-----------------------|-------|-----------------------------------------------|-----------------------------|---------------------------------------------------------------|---------------|--------------------------------|----------------|------------------------|-------------|----------------------|-------------|
| 3                     | Change over 6 yrs | ▲ | 5* | 4-Compost + Mustard annually | Yes | Every winter | Mustard | 1x | 0 to 6.5 | 276 | 0.257 |
| 4                     | Change over 6 yrs | ▲ | 5* | 4-Compost + Mustard annually | Yes | Every winter | Mustard | 1x | 0 to 6.5 | 257 | 0.239 |
| 1                     | Change over 6 yrs | NA | 6* | NA | Yes | Every winter | Mustard | 3x | 0 to 6.5 | NA | NA |
| 2                     | Change over 6 yrs | NA | 6* | NA | Yes | Every winter | Mustard | 3x | 0 to 6.5 | NA | NA |
| 3                     | Change over 6 yrs | NA | 6* | NA | Yes | Every winter | Mustard | 3x | 0 to 6.5 | NA | NA |
| 4                     | Change over 6 yrs | NA | 6* | NA | Yes | Every winter | Mustard | 3x | 0 to 6.5 | NA | NA |
| 1                     | Change over 6 yrs | ▲ | 7* | 5-Compost + Rye annually | Yes | Every winter | Rye | 1x | 0 to 6.5 | 198 | 0.184 |
| 2                     | Change over 6 yrs | ▲ | 7* | 5-Compost + Rye annually | Yes | Every winter | Rye | 1x | 0 to 6.5 | 186 | 0.173 |
| 3                     | Change over 6 yrs | ▲ | 7* | 5-Compost + Rye annually | Yes | Every winter | Rye | 1x | 0 to 6.5 | 83 | 0.077 |

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Table 4 (continued)

| Block (i.e. replicate) | Year | Symbol color & shape in PLoS ONE article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE | Compost added | Winter cover cropping frequency | Cover crop type | Cover crop seeding rate | Sample Depth | POX-C Concentration | POX-C Stock |
|-----------------------|------|-----------------------------------------------|-----------------------------------|------------------------------------------------|--------------|--------------------------------|----------------|----------------------|--------------|---------------------|------------|
| 4                     | Change over 6 yrs | ▲ | 7* | 5-Compost + Rye annually | Yes | Every winter | Rye | 1x | 0 to 6.5 | 199 | 0.184 |
| 1                     | Change over 6 yrs | NA | 8* | NA | Yes | Every winter | Rye | 3x | 0 to 6.5 | NA | NA |
| 2                     | Change over 6 yrs | NA | 8* | NA | Yes | Every winter | Rye | 3x | 0 to 6.5 | NA | NA |
| 3                     | Change over 6 yrs | NA | 8* | NA | Yes | Every winter | Rye | 3x | 0 to 6.5 | NA | NA |
| 4                     | Change over 6 yrs | NA | 8* | NA | Yes | Every winter | Rye | 3x | 0 to 6.5 | NA | NA |

1 The data provided in this table is from the Salinas Organic Cropping Systems (SOCS) study in Salinas, California. This includes soil POX-C concentrations and stocks at time 0, years 6 and 8, and the change over first 6 years for the 5 systems with optimal seeding rates for weed suppression included in the related article in PLoS ONE [1]. The experimental design was a randomized complete block with 4 blocks (i.e., replicates). These data are provided to give readers an opportunity use the data for future meta-analyses, or analysis of confidence intervals, effect sizes, etc. in the Explanatory Software for Confidence Intervals (ESCI) produced by Geoff Cumming. ESCI is freely available at https://thenewstatistics.com/itns/esci/.

2 To account for changes in soil bulk density over time POX-C stocks were calculated using the Maximum Equivalent Soil Mass Method [7].

3 The symbols, shapes, and colors used in the PLoS ONE article. Note that in this article the data for only 5 systems were included, but in this Data in Brief article, the data for all 8 systems is included. NA= not applicable because the system was not included in the PLoS ONE article.

4 In this Data in Brief article, these numbers (1–8) were uses for the 8 systems.

5 In the PLoS ONE article only 5 systems with seeding rates that provided optimal weed suppression were included. NA= not applicable because these 3 systems were not included in the PLoS ONE article.

6 The application rate for compost, which was applied prior to each vegetable crop, was 7.6 Mg ha⁻¹ on an oven dry weight basis. The compost was made from urban yard waste.

7 Winter cover cropping period was from October or November to February or March.

8 See Table 1 for details on the cover crop types and seeding rates.
Table 5
Raw data of cumulative, estimated yields of lettuce and broccoli crop during 8 years at the Salinas Organic Cropping Systems experiment in Salinas, California; yields are on an oven-dry basis. This includes data from all eight systems in the experiment. A Microsoft Excel version of the table is available in the supplementary material (Supplementary Table 4).

| Block (i.e. replicate) | Symbol color & shape in PLoS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE* | Compost added* | Winer cover cropping frequency* | Cover crop type* | Cover crop seeding rate* | Lettuce Yield | Broccoli Yield |
|------------------------|-----------------------------------------------|-----------------------------------|---------------------------------------------------------|----------------|-------------------------------|----------------|------------------------|----------------|----------------|----------------|
| 1                      | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year                      | No             | Every 4th winter              | Leg-rye        | 3x                     | 5299           | 8511           |
| 2                      | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year                      | No             | Every 4th winter              | Leg-rye        | 3x                     | 5380           | 8607           |
| 3                      | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year                      | No             | Every 4th winter              | Leg-rye        | 3x                     | 5150           | 7805           |
| 4                      | ■                                             | 1*                                | 1-No Compost + Legume-rye 4th Year                      | No             | Every 4th winter              | Leg-rye        | 3x                     | 4890           | 8110           |
| 1                      | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year                         | Yes            | Every 4th winter              | Leg-rye        | 3x                     | 5510           | 8013           |
| 2                      | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year                         | Yes            | Every 4th winter              | Leg-rye        | 3x                     | 6053           | 8487           |
| 3                      | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year                         | Yes            | Every 4th winter              | Leg-rye        | 3x                     | 6108           | 9021           |
| 4                      | ■                                             | 2*                                | 2-Compost + Legume-rye 4th Year                         | Yes            | Every 4th winter              | Leg-rye        | 3x                     | 5981           | 8370           |
| 1                      | NA                                            | 3*                                | NA                                                      | Yes            | Every winter                  | Leg-rye        | 1x                     | 6583           | 8368           |
| 2                      | NA                                            | 3*                                | NA                                                      | Yes            | Every winter                  | Leg-rye        | 1x                     | 6765           | 8676           |
| 3                      | NA                                            | 3*                                | NA                                                      | Yes            | Every winter                  | Leg-rye        | 1x                     | 6816           | 8942           |
| 4                      | NA                                            | 3*                                | NA                                                      | Yes            | Every winter                  | Leg-rye        | 1x                     | 6872           | 9524           |
| 1                      | ■                                             | 4*                                | 3-Compost + Legume-rye annually                         | Yes            | Every winter                  | Leg-rye        | 3x                     | 7289           | 8426           |
| 2                      | ■                                             | 4*                                | 3-Compost + Legume-rye annually                         | Yes            | Every winter                  | Leg-rye        | 3x                     | 7030           | 10271          |
| 3                      | ■                                             | 4*                                | 3-Compost + Legume-rye annually                         | Yes            | Every winter                  | Leg-rye        | 3x                     | 7362           | 9397           |

(continued on next page)
Table 5 (continued)

| Block (i.e. replicate) | Symbol color & shape in PLoS One article figures | System ID in Data in Brief article | System ID & description used in associated article in PLoS ONE & Winer cover cropping frequency | Compost added | Cover crop type | Cover crop seeding rate | Lettuce Yield | Broccoli Yield |
|------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|--------------|-----------------|------------------------|---------------|----------------|
| 4                      | ▶                                              | 4*                             | 3-Compost + Legume-rye annually               | Yes          | Every winter    | Mustard 1x            | 6831          | 8845           |
| 1                      | ◆                                              | 5*                             | 4-Compost + Mustard annually                  | Yes          | Every winter    | Mustard 1x            | 6276          | 8324           |
| 2                      | ◆                                              | 5*                             | 4-Compost + Mustard annually                  | Yes          | Every winter    | Mustard 1x            | 6761          | 9213           |
| 3                      | ◆                                              | 5*                             | 4-Compost + Mustard annually                  | Yes          | Every winter    | Mustard 1x            | 6752          | 9315           |
| 4                      | ◆                                              | 5*                             | 4-Compost + Mustard annually                  | Yes          | Every winter    | Mustard 1x            | 6563          | 9829           |
| 5                      | ▲                                              | 6*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6831          | 8845           |
| 6                      | ▲                                              | 6*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6761          | 9213           |
| 7                      | ▲                                              | 7*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6752          | 9315           |
| 8                      | ▲                                              | 7*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6563          | 9829           |
| 1                      | NA                                             | 6*                             | NA                                            | Yes          | Every winter    | Mustard 3x            | 6645          | 8546           |
| 2                      | NA                                             | 6*                             | NA                                            | Yes          | Every winter    | Mustard 3x            | 6717          | 9944           |
| 3                      | NA                                             | 6*                             | NA                                            | Yes          | Every winter    | Mustard 3x            | 6518          | 8947           |
| 4                      | NA                                             | 6*                             | NA                                            | Yes          | Every winter    | Mustard 3x            | 6842          | 9409           |
| 5                      | ▲                                              | 7*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6831          | 8845           |
| 6                      | ▲                                              | 7*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6761          | 9213           |
| 7                      | ▲                                              | 7*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6752          | 9315           |
| 8                      | ▲                                              | 7*                             | 5-Compost + Rye annually                      | Yes          | Every winter    | Rye 1x                | 6563          | 9829           |
| 1                      | NA                                             | 8*                             | NA                                            | Yes          | Every winter    | Rye 3x                | 6879          | 8698           |
| 2                      | NA                                             | 8*                             | NA                                            | Yes          | Every winter    | Rye 3x                | 6836          | 8833           |
| 3                      | NA                                             | 8*                             | NA                                            | Yes          | Every winter    | Rye 3x                | 6509          | 8328           |
| 4                      | NA                                             | 8*                             | NA                                            | Yes          | Every winter    | Rye 3x                | 6520          | 9125           |

1 The data provided in this table is from the Salinas Organic Cropping Systems (SOCS) study in Salinas, California. This includes cumulative, estimated lettuce and broccoli crop yields for all 8 systems in the SOCS study. The experimental design was a randomized complete block with 4 blocks (i.e., replicates). These data are provided to give readers an opportunity use the data for future meta-analyses, or analysis of confidence intervals, effect sizes, etc. in the Explanatory Software for Confidence Intervals (ESCI) produced by Geoff Cumming. ESCI is freely available at [https://thenewstatistics.com/itns/esci/](https://thenewstatistics.com/itns/esci/).

2 The symbols, shapes, and colors used in the PLoS ONE article [1]. Note that in this article the data for only 5 systems were included, but in this Data in Brief article, the data for all 8 systems is included. NA= not applicable because the system was not included in the PLoS ONE article.

3 In this Data in Brief article, these numbers (1 to 8) are used for the 8 systems.

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7 See Table 1 for details on the cover crop types and seeding rates.
CRediT Author Statement

Kathryn E. White: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Visualization, Writing – original draft, Writing – review and editing.
Eric B. Brennan: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Supervision, Visualization, Writing – original draft, Writing – review and editing.
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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have or could be perceived to have influenced the work reported in this article.

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Supplementary Materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.dib.2020.106481.

References

[1] K.E. White, E.B. Brennan, M.A. Cavigelli, R.F. Smith, Winter cover crops increase readily decomposable soil carbon, but compost drives total soil carbon during eight years of intensive, organic vegetable production in California, PLoS ONE 15 (2020) e0228677, doi:10.1371/journal.pone.0228677.
[2] E.B. Brennan, N.S. Boyd, Winter cover crop seeding rate and variety affects during eight years of organic vegetables: I. Cover crop biomass production, Agron J 104 (2012) 684–698, doi:10.2134/agronj2011.0330.
[3] G. Maltais-Landry, K. Scow, E. Brennan, E. Torbert, P. Vitousek, Higher flexibility in input N:P ratios results in more balanced phosphorus budgets in two long-term experimental agroecosystems, Agric Ecosyst Environ 223 (2016) 197–210, doi:10.1016/j.agee.2016.03.007.
[4] E.B. Brennan, V. Acosta-Martinez, Cover cropping frequency is the main driver of soil microbial changes during six years of organic vegetable production, Soil Biol Biochem 109 (2017) 188–204, doi:10.1016/j.soilbio.2017.01.014.
[5] E.B. Brennan, N.S. Boyd, R.F. Smith, Winter cover crop seeding rate and variety effects during eight years of organic vegetables: III. Cover crop residue quality and nitrogen mineralization, Agron J 105 (2013) 171–182, doi:10.2134/ agronj2012.0258.
[6] R. Smith, M. Cahn, T. Hartz, P. Love, B. Farrara, Nitrogen dynamics of cole crop production: implications for fertility management and environmental protection, HorticScience 51 (2016) 1586–1591, doi:10.21273/HORTSCI11335-16.
[7] J. Lee, J.W. Hopmans, D.E. Rolston, S.G. Baer, J. Six, Determining soil carbon stock changes: simple bulk density corrections fail, Agric Ecosyst Environ 134 (2009) 251–256, doi:10.1016/j.agee.2009.07.006.
[8] E.B. Brennan, V. Acosta-Martinez, Cover crops and compost influence soil enzymes during six years of tillage intensive, organic vegetable production, Soil Sci Soc Am J 83 (2019) 624–637.
[9] J.N. Sorensen, K. Thorup-Kristensen, Undersowing legume crops for green manuring of lettuce, Biol Agric Hort 21 (2003) 399–414, doi:10.1080/01448765.2003.9755281.