Supplementary Information

Finnish National Phenological Network 1997–2017: from observations to trend detection

Helama S, Tolvanen A, Karhu J, Poikolainen J, Kubin E

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- Table S1. Trends in phenological records
Table S1. Trends in phenological records. Plant species were referred to by their EPPO codes (EPPO code system, http://eppt.eppo.org/) and the phenological stage by their BBCH codes (Kubin et al. 2007a, 2007b). Site numbers refer to Fig. 1 in the main text. The trends were quantified using the Mann-Kendall statistic (MK) and its statistical significance (p), the Sen’s slope (S; days year$^{-1}$) and its 95% confidence interval ($S'$, $S''$), and the number of years (n) over which the statistics were computed.

| Species | Phase | Site | MK | p  | S  | Sr  | Ss  | n  |
|---------|-------|------|-----|----|----|-----|-----|----|
| ALUIN   | BBCH61| 1    | 0.4 | ns | 0.25 | -2.17 | 1.5 | 11 |
| ALUIN   | BBCH61| 14   | -0.4 | ns | -0.33 | -1.67 | 1.0 | 11 |
| ALUIN   | BBCH61| 19   | 0.5  | ns | 0.31 | -2.25 | 1.5 | 12 |
| ALUIN   | BBCH61| 21   | -0.7 | ns | -0.52 | -3.14 | 0.86| 12 |
| ALUIN   | BBCH61| 30   | -0.4 | ns | -0.45 | -2.01 | 0.06| 13 |
| ALUIN   | BBCH61| 34   | -0.6 | ns | -0.38 | -3.65 | 1.25| 11 |
| ALUIN   | BBCH61| 38   | -1.3 | ns | -1.17 | -4.33 | 1.13| 14 |
| ALUIN   | BBCH61| 39   | -1.3 | ns | -1.55 | -4.33 | 1.13| 14 |
| BETPB   | BBCH07| 1    | -1.7 | ns | -0.38 | -0.92 | 0.14| 21 |
| BETPB   | BBCH07| 2    | -1.6 | ns | -0.75 | -2.33 | 0.43| 11 |
| BETPB   | BBCH07| 3    | -0.6 | ns | -0.21 | -0.87 | 0.5 | 20 |
| BETPB   | BBCH07| 5    | -0.8 | ns | -1.17 | -3.00 | 1.0 | 10 |
| BETPB   | BBCH07| 6    | -2.1 | <0.05 | <1.2 | -3.44 | -0.25| 14 |
| BETPB   | BBCH07| 8    | -1.6 | ns | -0.57 | -1.11 | 0.21| 21 |
| BETPB   | BBCH07| 10   | -0.6 | ns | -0.18 | -0.72 | 0.5 | 20 |
| BETPB   | BBCH07| 14   | 0.5  | ns | 0.1  | -0.64 | 0.89| 19 |
| BETPB   | BBCH07| 18   | 0.1  | ns | 0    | -1    | 0.83| 18 |
| BETPB   | BBCH07| 19   | -0.5 | ns | -0.13 | -0.67 | 0.67| 21 |
| BETPB   | BBCH07| 21   | 0.1  | ns | 0    | -0.5  | 0.5 | 21 |
| BETPB   | BBCH07| 22   | -1.2 | ns | -0.4  | -1.43 | 0.63| 15 |
| BETPB   | BBCH07| 24   | -0.1 | ns | -0.16 | -1.86 | 1.75| 13 |
| BETPB   | BBCH07| 26   | -1.2 | ns | -1    | -3.5  | 1.11| 11 |
| BETPB   | BBCH07| 28   | 0.4  | ns | 0.44 | -1.25 | 1.0 | 14 |
| BETPB   | BBCH07| 29   | -0.9 | ns | -0.83 | -2.55 | 1.4 | 10 |
| BETPB   | BBCH07| 30   | 0.1  | ns | 0    | -0.6  | 0.73| 21 |
| BETPB   | BBCH07| 31   | -0.6 | ns | -0.11 | -0.83 | 0.8 | 17 |
| BETPB   | BBCH07| 32   | 1.9  | ns | 0.33 | -0.08 | 0.92| 19 |
| BETPB   | BBCH07| 34   | 1.1  | ns | 0.41 | -0.33 | 1.0 | 21 |
| BETPB   | BBCH07| 36   | -0.5 | ns | -0.13 | -0.86 | 0.5 | 20 |
| BETPB   | BBCH07| 37   | -0.1 | ns | -0.16 | -1.5  | 0.83| 12 |
| BETPB   | BBCH07| 38   | 1.3  | ns | 0.35 | -0.33 | 0.88| 21 |
| BETPB   | BBCH07| 39   | 2    | ns | 0.33 | 0.08  | 0.88| 21 |
| BETPB   | BBCH07| 40   | 0.4  | ns | 0    | -1    | 1.67| 11 |
| BETPB   | BBCH07| 41   | -0.2 | ns | 0    | -0.6  | 0.5 | 19 |
| BETPB   | BBCH07| 42   | 2.2  | <0.05 | 0.52 | 0.13 | 1.11| 20 |
| BETPB   | BBCH15| 1    | -2.4 | <0.05 | -0.9 | -1.75 | -0.22| 20 |
| BETPB   | BBCH15| 2    | -0.6 | ns | -0.3  | -1.8  | 1.0 | 11 |
| BETPB   | BBCH15| 3    | -0.8 | ns | -0.19 | -0.86 | 0.5 | 21 |
| BETPB | BBCH15 | 5   | -0.6 | ns   | -0.44 | -3.4 | 1.25 | 10 |
|-------|--------|-----|------|------|-------|------|------|----|
| BETPB | BBCH15 | 6   | -0.3 | ns   | -0.12 | -0.88| 1    | 12 |
| BETPB | BBCH15 | 8   | 2.1  | <0.05| 0.79  | 0.1  | 1.3  | 21 |
| BETPB | BBCH15 | 10  | -2.2 | <0.05| -0.95 | -1.89| -0.29| 20 |
| BETPB | BBCH15 | 14  | -0.6 | ns   | -0.2  | -1.2 | 0.83 | 19 |
| BETPB | BBCH15 | 18  | -1.8 | ns   | -0.5  | -1.25| 0.13 | 18 |
| BETPB | BBCH15 | 19  | -0.9 | ns   | -0.25 | -0.71| 0.4  | 21 |
| BETPB | BBCH15 | 21  | -1.1 | ns   | -0.5  | -1.35| 0.43 | 21 |
| BETPB | BBCH15 | 22  | -1.1 | ns   | -0.4  | -1.5 | 0.36 | 15 |
| BETPB | BBCH15 | 24  | 1.1  | ns   | 0.33  | -0.8 | 1.6  | 13 |
| BETPB | BBCH15 | 26  | -2   | ns   | -1.5  | -2.67| -0.14| 11 |
| BETPB | BBCH15 | 28  | -1   | ns   | -0.44 | -1.8 | 0.4  | 12 |
| BETPB | BBCH15 | 29  | -2.7 | <0.05| -1.78 | -3   | -1   | 10 |
| BETPB | BBCH15 | 30  | -0.8 | ns   | -0.15 | -0.79| 0.4  | 20 |
| BETPB | BBCH15 | 31  | -2.5 | <0.05| -1.04 | -2   | -0.38| 17 |
| BETPB | BBCH15 | 32  | -0.5 | ns   | -0.13 | -0.92| 0.5  | 17 |
| BETPB | BBCH15 | 34  | -2   | ns   | -0.52 | -1.25| -0.07| 20 |
| BETPB | BBCH15 | 36  | -1.7 | ns   | -0.67 | -1.5 | 0.29 | 19 |
| BETPB | BBCH15 | 37  | 0.8  | ns   | 0.42  | -1.33| 2.77 | 12 |
| BETPB | BBCH15 | 38  | 3    | <0.01| 1     | 0.5  | 1.5  | 21 |
| BETPB | BBCH15 | 39  | 1.7  | ns   | 0.33  | -0.13| 0.83 | 20 |
| BETPB | BBCH15 | 40  | 0    | ns   | 0     | -1.8 | 1.4  | 11 |
| BETPB | BBCH15 | 41  | 1.6  | ns   | 0.48  | -0.25| 1.2  | 17 |
| BETPB | BBCH15 | 42  | 1.2  | ns   | 0.41  | -0.33| 1    | 17 |
| BETPB | BBCH61 | 1   | 0.6  | ns   | 0.56  | -1.8 | 2.86 | 12 |
| BETPB | BBCH61 | 19  | 0    | ns   | 0     | -2   | 2.33 | 11 |
| BETPB | BBCH61 | 34  | 1.4  | ns   | 0.4   | -0.44| 1    | 10 |
| BETPB | BBCH61 | 38  | -0.2 | ns   | 0     | -1   | 1    | 11 |
| BETPB | BBCH61 | 39  | 0.3  | ns   | 0.33  | -0.5 | 1.67 | 11 |
| BETPB | BBCH89 | 38  | 0.3  | ns   | 0     | -0.67| 2    | 12 |
| BETPB | BBCH92 | 1   | -1.2 | ns   | -0.25 | -0.8 | 0.21 | 19 |
| BETPB | BBCH92 | 2   | 0.6  | ns   | 0.43  | -2   | 3    | 11 |
| BETPB | BBCH92 | 3   | -1.8 | ns   | -0.42 | -0.9 | 0.1  | 21 |
| BETPB | BBCH92 | 5   | 0.4  | ns   | 0.33  | -1.43| 1    | 10 |
| BETPB | BBCH92 | 6   | -1   | ns   | -0.22 | -1   | 0.5  | 14 |
| BETPB | BBCH92 | 8   | -2.3 | <0.05| -0.4  | -1   | -0.13| 20 |
| BETPB | BBCH92 | 10  | -2.6 | <0.05| -0.92 | -1.57| -0.38| 18 |
| BETPB | BBCH92 | 14  | -1.2 | ns   | -0.2  | -0.71| 0.23 | 18 |
| BETPB | BBCH92 | 18  | -1.1 | ns   | -0.25 | -0.67| 0.46 | 18 |
| BETPB | BBCH92 | 19  | -0.5 | ns   | -0.15 | -0.75| 0.5  | 21 |
| BETPB | BBCH92 | 21  | -1.5 | ns   | -0.5  | -1.33| 0.25 | 21 |
| BETPB | BBCH92 | 22  | 0.3  | ns   | 0     | -1   | 1    | 15 |
| BETPB | BBCH92 | 24  | -0.1 | ns   | 0     | -0.75| 0.8  | 13 |
| BETPB | BBCH92 | 30  | 3    | <0.01| 0.58  | 0.27 | 1.13 | 20 |
| BETPB | BBCH92 | 32  | -2   | ns   | -0.67 | -1.67| -0.11| 15 |
| BETPB | BBCH92 | 34  | -1.3 | ns   | -0.25 | -0.58| 0.24 | 21 |
| BETPB | BBCH92 | 36  | -2   | ns   | -0.37 | -0.86| -0.06| 16 |
| BETPB | BBCH92 | 37  | -0.9 | ns   | -0.46 | -2.57| 1    | 13 |
| BETPB | BBCH92 | 38 | 0.6 | ns | 0.16 | -0.5 | 0.8 | 20 |
|-------|--------|----|-----|----|------|------|----|----|
| BETPB | BBCH92 | 39 | -0.3 | ns | 0 | -0.44 | 0.4 | 21 |
| BETPB | BBCH92 | 41 | -1.9 | ns | -0.5 | -1 | 0.13 | 17 |
| BETPB | BBCH92 | 42 | -2 | ns | -0.6 | -1.22 | -0.15 | 18 |
| BETPB | BBCH97 | 1 | -1.4 | ns | -0.39 | -1 | 0.33 | 20 |
| BETPB | BBCH97 | 2 | 0.5 | ns | 0.57 | -1.33 | 1.5 | 11 |
| BETPB | BBCH97 | 3 | -0.5 | ns | -0.21 | -0.92 | 1 | 20 |
| BETPB | BBCH97 | 5 | 0.1 | ns | 0.5 | -2 | 1.86 | 10 |
| BETPB | BBCH97 | 6 | -1.4 | ns | -0.58 | -1.67 | 0.5 | 14 |
| BETPB | BBCH97 | 8 | -2.7 | <0.05 | -0.67 | -1.38 | -0.29 | 19 |
| BETPB | BBCH97 | 10 | -0.2 | ns | -0.19 | -1 | 0.9 | 17 |
| BETPB | BBCH97 | 14 | -1.6 | ns | -0.22 | -0.67 | 0.11 | 18 |
| BETPB | BBCH98 | 18 | 0.6 | ns | 0.29 | -0.63 | 1.22 | 16 |
| BETPB | BBCH97 | 19 | -1.2 | ns | -0.14 | -0.5 | 0.27 | 21 |
| BETPB | BBCH97 | 21 | -2.4 | <0.05 | -1 | -2 | -0.29 | 20 |
| BETPB | BBCH97 | 22 | -0.4 | ns | -0.2 | -1.17 | 0.67 | 13 |
| BETPB | BBCH97 | 24 | -0.5 | ns | -0.24 | -1.29 | 1 | 13 |
| BETPB | BBCH97 | 30 | 0.5 | ns | 0.09 | -0.5 | 0.69 | 20 |
| BETPB | BBCH97 | 32 | -1.6 | ns | -0.7 | -1.4 | 0.2 | 18 |
| BETPB | BBCH97 | 34 | -0.7 | ns | -0.19 | -0.64 | 0.38 | 20 |
| BETPB | BBCH97 | 36 | 0 | ns | 0 | -0.67 | 0.7 | 15 |
| BETPB | BBCH97 | 37 | 0.8 | ns | 0.5 | -2.33 | 2.83 | 12 |
| BETPB | BBCH97 | 38 | 1.3 | ns | 0.36 | -0.33 | 0.8 | 20 |
| BETPB | BBCH97 | 39 | -1.2 | ns | -0.25 | -1 | 0.35 | 21 |
| BETPB | BBCH97 | 41 | -1.4 | ns | -0.33 | -1 | 0.5 | 17 |
| BETPB | BBCH97 | 42 | -3.2 | <0.01 | -1.29 | -2.2 | -0.67 | 14 |
| BETPE | BBCH07 | 5 | -0.8 | ns | -1.17 | -3 | 1 | 10 |
| BETPE | BBCH07 | 8 | -1.6 | ns | -0.56 | -1.07 | 0.14 | 21 |
| BETPE | BBCH07 | 10 | -0.6 | ns | -0.16 | -0.67 | 0.5 | 20 |
| BETPE | BBCH07 | 14 | 0.5 | ns | 0.19 | -0.5 | 0.83 | 19 |
| BETPE | BBCH07 | 18 | 0 | ns | 0 | -1 | 0.67 | 18 |
| BETPE | BBCH07 | 19 | -0.4 | ns | -0.09 | -0.75 | 0.5 | 21 |
| BETPE | BBCH07 | 21 | -0.5 | ns | -0.18 | -0.78 | 0.43 | 20 |
| BETPE | BBCH07 | 22 | -1.5 | ns | -0.6 | -1.83 | 0.43 | 15 |
| BETPE | BBCH07 | 24 | -0.5 | ns | -0.53 | -2.33 | 1.33 | 13 |
| BETPE | BBCH07 | 26 | -0.8 | ns | -0.5 | -2 | 1 | 11 |
| BETPE | BBCH07 | 28 | -0.4 | ns | -0.27 | -1.6 | 1.11 | 14 |
| BETPE | BBCH07 | 29 | -1 | ns | -1 | -3 | 1.33 | 10 |
| BETPE | BBCH07 | 30 | 0.3 | ns | 0.11 | -0.5 | 0.93 | 21 |
| BETPE | BBCH07 | 31 | 0.5 | ns | 0.2 | -0.6 | 0.75 | 18 |
| BETPE | BBCH07 | 32 | 1.1 | ns | 0.29 | -0.35 | 0.86 | 19 |
| BETPE | BBCH07 | 34 | 1.1 | ns | 0.33 | -0.28 | 0.93 | 21 |
| BETPE | BBCH07 | 36 | 0 | ns | 0 | -0.58 | 0.64 | 19 |
| BETPE | BBCH07 | 37 | -0.2 | ns | -0.03 | -1.33 | 1.2 | 12 |
| BETPE | BBCH07 | 38 | 1.8 | ns | 0.56 | -0.1 | 1.13 | 20 |
| BETPE | BBCH07 | 39 | 1.9 | ns | 0.46 | -0.06 | 1 | 21 |
| BETPE | BBCH07 | 40 | 0 | ns | 0 | -1.5 | 1.4 | 11 |
| BETPE | BBCH07 | 41 | -0.1 | ns | 0 | -0.75 | 0.78 | 19 |
| BETPE | BBCH07 | 42  | 1.7  | ns  | 0.38  | -0.2  | 0.87  | 19 |
|---|-------|-----|------|-----|-------|-------|-------|----|
| BETPE | BBCH15 | 5   | -0.5 | ns  | -0.33 | -4    | 1.5   | 10 |
| BETPE | BBCH15 | 8   | 2.1  | <0.05| 0.82  | 0.07  | 1.5   | 19 |
| BETPE | BBCH15 | 10  | -2.2 | <0.05| -0.84 | -1.64 | -0.15 | 20 |
| BETPE | BBCH15 | 14  | -0.9 | ns  | -0.5  | -1.13 | 0.5   | 19 |
| BETPE | BBCH15 | 18  | -1.8 | ns  | -0.55 | -1.25 | 0.13  | 18 |
| BETPE | BBCH15 | 19  | -0.9 | ns  | -0.21 | -0.67 | 0.5   | 21 |
| BETPE | BBCH15 | 21  | -2.4 | <0.05| -0.85 | -1.75 | -0.21 | 20 |
| BETPE | BBCH15 | 22  | -1.6 | ns  | -0.5  | -1.5  | 0.29  | 15 |
| BETPE | BBCH15 | 24  | 1.5  | ns  | 0.5   | -0.5  | 1.67  | 13 |
| BETPE | BBCH15 | 26  | -1.6 | ns  | -1.25 | -2.6  | 0.5   | 11 |
| BETPE | BBCH15 | 28  | -1.5 | ns  | -0.61 | -2    | 0.25  | 12 |
| BETPE | BBCH15 | 29  | -2.4 | <0.05| -1.5  | -3    | -1    | 10 |
| BETPE | BBCH15 | 30  | -1.5 | ns  | -0.31 | -1    | 0.23  | 20 |
| BETPE | BBCH15 | 31  | -2.1 | <0.05| -0.75 | -1.5  | -0.14 | 18 |
| BETPE | BBCH15 | 32  | -0.2 | ns  | -0.11 | -0.7  | 0.5   | 18 |
| BETPE | BBCH15 | 34  | -2.5 | <0.05| -0.74 | -1.33 | -0.25 | 20 |
| BETPE | BBCH15 | 36  | -2.1 | <0.05| -1    | -1.5  | -0.15 | 19 |
| BETPE | BBCH15 | 37  | 1.2  | ns  | 1.25  | -1.13 | 3     | 12 |
| BETPE | BBCH15 | 38  | 3    | <0.01| 1.33  | 0.5   | 1.9   | 20 |
| BETPE | BBCH15 | 39  | 1.7  | ns  | 0.52  | -0.14 | 1.24  | 20 |
| BETPE | BBCH15 | 40  | 0.4  | ns  | 0.13  | -1.5  | 2.2   | 11 |
| BETPE | BBCH15 | 41  | 1.9  | ns  | 0.59  | -0.14 | 1.1   | 17 |
| BETPE | BBCH15 | 42  | 1    | ns  | 0.31  | -0.33 | 0.86  | 18 |
| BETPE | BBCH61 | 19  | 0    | ns  | 0     | -2    | 2.75  | 10 |
| BETPE | BBCH61 | 38  | -1.1 | ns  | -0.33 | -1.29 | 1.17  | 10 |
| BETPE | BBCH61 | 39  | 0.4  | ns  | 0.2   | -1.71 | 2     | 10 |
| BETPE | BBCH92 | 5   | 0    | ns  | 0     | -1.57 | 0.5   | 10 |
| BETPE | BBCH92 | 8   | -2.1 | <0.05| -0.5  | -1    | -0.07 | 18 |
| BETPE | BBCH92 | 10  | 0.1  | ns  | 0     | -0.91 | 0.83  | 17 |
| BETPE | BBCH92 | 14  | -0.3 | ns  | -0.07 | -0.7  | 0.67  | 18 |
| BETPE | BBCH92 | 18  | -1.6 | ns  | -0.44 | -1    | 0.2   | 16 |
| BETPE | BBCH92 | 19  | -2.6 | <0.05| -0.59 | -1.09 | -0.23 | 21 |
| BETPE | BBCH92 | 21  | -1   | ns  | -0.33 | -1.13 | 0.64  | 19 |
| BETPE | BBCH92 | 22  | 1.3  | ns  | 0.54  | -0.58 | 1     | 15 |
| BETPE | BBCH92 | 24  | -1.2 | ns  | -0.2  | -1.33 | 0.5   | 13 |
| BETPE | BBCH92 | 30  | 0.8  | ns  | 0.11  | -0.24 | 0.5   | 20 |
| BETPE | BBCH92 | 32  | -1.6 | ns  | -0.46 | -1    | 0.2   | 18 |
| BETPE | BBCH92 | 34  | 1.1  | ns  | 0.25  | -0.25 | 0.67  | 21 |
| BETPE | BBCH92 | 36  | -1.8 | ns  | -0.56 | -1.08 | 0.2   | 16 |
| BETPE | BBCH92 | 37  | -1   | ns  | -0.67 | -2.18 | 1     | 12 |
| BETPE | BBCH92 | 38  | 1.4  | ns  | 0.4   | -0.25 | 1.07  | 20 |
| BETPE | BBCH92 | 39  | -2   | ns  | -0.31 | -0.79 | -0.07 | 21 |
| BETPE | BBCH92 | 41  | -1.3 | ns  | -0.38 | -1.17 | 0.29  | 17 |
| BETPE | BBCH92 | 42  | 0.3  | ns  | 0.14  | -0.8  | 0.93  | 17 |
| BETPE | BBCH97 | 5   | 0.1  | ns  | 0     | -1.8  | 2     | 10 |
| BETPE | BBCH97 | 8   | -1.3 | ns  | -0.35 | -0.91 | 0.25  | 17 |
| BETPE | BBCH97 | 10  | -0.4 | ns  | -0.09 | -0.86 | 0.75  | 16 |
| Experiment | Sample | Value | Error | Standard Deviation | Value | Error | Standard Deviation |
|------------|--------|-------|-------|--------------------|-------|-------|--------------------|
| BETPE      | BBCH97 | 14    | -0.3  | ns                 | 0     | -0.67 | 0.33               |
| BETPE      | BBCH97 | 18    | 0.3   | ns                 | 0.08  | -0.55 | 0.5                |
| BETPE      | BBCH97 | 19    | -0.3  | ns                 | -0.03 | -0.5  | 0.39               |
| BETPE      | BBCH97 | 21    | -0.8  | ns                 | -0.28 | -1.87 | 1                  |
| BETPE      | BBCH97 | 22    | 0.3   | ns                 | 0.23  | -0.86 | 1.33               |
| BETPE      | BBCH97 | 24    | -0.7  | ns                 | -0.25 | -1.6  | 0.5                |
| BETPE      | BBCH97 | 30    | 1.2   | ns                 | 0.23  | -0.25 | 0.6                |
| BETPE      | BBCH97 | 32    | -2.5  | <0.05             | -0.58 | -1.56 | 0.21               |
| BETPE      | BBCH97 | 34    | 0.7   | ns                 | 0.18  | -0.38 | 0.64               |
| BETPE      | BBCH97 | 36    | -1.6  | ns                 | -0.5  | -1    | 0.27               |
| BETPE      | BBCH97 | 37    | 1.2   | ns                 | 0.56  | -1.25 | 3                  |
| BETPE      | BBCH97 | 38    | 0.7   | ns                 | 0.33  | -0.67 | 1                  |
| BETPE      | BBCH97 | 39    | -2.1  | <0.05             | -0.55 | -1.09 | -0.07              |
| BETPE      | BBCH97 | 41    | -1.3  | ns                 | -0.44 | -1.19 | 0.4                |
| BETPE      | BBCH97 | 42    | -1.7  | ns                 | -0.58 | -1.63 | 0.17               |
| IUPCO      | BBCH61 | 1     | -0.3  | ns                 | -0.13 | -1.17 | 0.91               |
| IUPCO      | BBCH61 | 6     | -0.6  | ns                 | -0.56 | -1.4  | 1.17               |
| IUPCO      | BBCH61 | 10    | -0.6  | ns                 | -0.26 | -1.25 | 0.44               |
| IUPCO      | BBCH61 | 14    | 0.4   | ns                 | 0.11  | -0.6  | 1                  |
| IUPCO      | BBCH61 | 18    | -2.5  | <0.05             | -1    | -1.89 | -0.2               |
| IUPCO      | BBCH61 | 19    | -2.6  | <0.05             | -0.88 | -1.26 | -0.33              |
| IUPCO      | BBCH61 | 21    | -1.4  | ns                 | -0.4  | -1    | 0.29               |
| IUPCO      | BBCH61 | 22    | 0     | ns                 | 0.14  | -2    | 1.75               |
| IUPCO      | BBCH61 | 24    | 1.1   | ns                 | 0.35  | -1    | 2                  |
| IUPCO      | BBCH61 | 30    | -3.2  | <0.01             | -0.74 | -1.13 | -0.4               |
| IUPCO      | BBCH61 | 31    | -1.6  | ns                 | -0.59 | -1.22 | 0.2                |
| IUPCO      | BBCH61 | 32    | 0     | ns                 | 0     | -0.8  | 0.55               |
| IUPCO      | BBCH61 | 34    | -2.9  | <0.01             | -0.8  | -1.25 | -0.33              |
| IUPCO      | BBCH61 | 36    | -2.2  | <0.05             | -0.7  | -1.44 | -0.2               |
| IUPCO      | BBCH61 | 37    | -0.3  | ns                 | -0.5  | -2    | 1.17               |
| IUPCO      | BBCH61 | 38    | -1.6  | ns                 | -0.57 | -0.94 | 0.2                |
| IUPCO      | BBCH61 | 39    | -1.5  | ns                 | -0.33 | -0.85 | 0.2                |
| IUPCO      | BBCH61 | 40    | 0     | ns                 | 0     | -1    | 1                  |
| IUPCO      | BBCH61 | 41    | 0     | ns                 | 0     | -0.78 | 0.8                |
| IUPCO      | BBCH61 | 42    | -2.3  | <0.05             | -0.44 | -1    | -0.1               |
| PIEAB      | BBCH30 | 1     | -1.8  | ns                 | -0.86 | -3    | 0.5                |
| PIEAB      | BBCH30 | 5     | -1.4  | ns                 | -0.6  | -2    | 0.5                |
| PIEAB      | BBCH30 | 6     | -1.8  | ns                 | -1    | -2.4  | 0.2                |
| PIEAB      | BBCH30 | 8     | -1.2  | ns                 | -0.27 | -0.92 | 0.33               |
| PIEAB      | BBCH30 | 10    | -3.6  | <0.001            | -0.92 | -1.33 | -0.5               |
| PIEAB      | BBCH30 | 14    | -1.6  | ns                 | -0.5  | -1    | 0.32               |
| PIEAB      | BBCH30 | 18    | -3.5  | <0.01             | -0.93 | -1.33 | -0.5               |
| PIEAB      | BBCH30 | 19    | -1.2  | ns                 | -0.5  | -1.4  | 0.33               |
| PIEAB      | BBCH30 | 21    | 0.1   | ns                 | 0     | -0.75 | 0.67               |
| PIEAB      | BBCH30 | 22    | -0.4  | ns                 | -0.3  | -1.5  | 0.57               |
| PIEAB      | BBCH30 | 24    | -0.1  | ns                 | -0.06 | -1.86 | 1.67               |
| PIEAB      | BBCH30 | 26    | -1.7  | ns                 | -1.86 | -4.5  | 0.5                |
| PIEAB      | BBCH30 | 28    | -1.1  | ns                 | -0.75 | -2.8  | 0.56               |
| PIEAB | BBCH30 | 29 | -2.7 | <0.05 | -3 | -4.4 | -2 | 10 |
|-------|--------|----|------|-------|----|------|----|----|
| PIEAB | BBCH30 | 30 | -2   | ns    | -0.5 | -1.2 | -0.07 | 20 |
| PIEAB | BBCH30 | 31 | -2.3 | <0.05 | -1.57 | -2.63 | -0.5 | 17 |
| PIEAB | BBCH30 | 32 | -0.9 | ns    | -0.39 | -1.25 | 0.33 | 18 |
| PIEAB | BBCH30 | 34 | -3.1 | <0.01 | -0.88 | -1.5 | -0.54 | 20 |
| PIEAB | BBCH30 | 36 | -2.1 | <0.05 | -0.83 | -1.2 | -0.18 | 18 |
| PIEAB | BBCH30 | 37 | -2.3 | <0.05 | -1.78 | -4 | -0.25 | 12 |
| PIEAB | BBCH30 | 38 | -2.1 | <0.05 | -0.67 | -1.33 | -0.07 | 20 |
| PIEAB | BBCH30 | 39 | -0.2 | ns    | 0 | -0.7 | 0.6 | 20 |
| PIEAB | BBCH30 | 40 | -0.9 | ns    | -0.6 | -2.33 | 1 | 11 |
| PIEAB | BBCH30 | 41 | -1.7 | ns    | -0.67 | -1.67 | 0.33 | 19 |
| PIEAB | BBCH30 | 42 | -2.1 | <0.05 | -0.63 | -1.5 | -0.09 | 19 |
| PIEAB | BBCH39 | 1 | -2.2 | <0.05 | -1.67 | -3.5 | -0.33 | 11 |
| PIEAB | BBCH39 | 5 | -1.4 | ns    | -1 | -2 | 0.33 | 10 |
| PIEAB | BBCH39 | 6 | 0.3 | ns    | 0.18 | -0.71 | 1.33 | 14 |
| PIEAB | BBCH39 | 8 | -0.2 | ns    | -0.11 | -1 | 0.69 | 18 |
| PIEAB | BBCH39 | 10 | -2   | ns    | -1.44 | -2.8 | -0.25 | 11 |
| PIEAB | BBCH39 | 14 | 0.5 | ns    | 0.17 | -0.67 | 1.2 | 18 |
| PIEAB | BBCH39 | 18 | -1.2 | ns    | -0.47 | -1.3 | 0.5 | 17 |
| PIEAB | BBCH39 | 19 | 1.1 | ns    | 0.5 | -0.41 | 1.33 | 20 |
| PIEAB | BBCH39 | 21 | -1.2 | ns    | -0.33 | -0.83 | 0.33 | 20 |
| PIEAB | BBCH39 | 22 | 2.3 | <0.05 | 1.33 | 0.33 | 2 | 15 |
| PIEAB | BBCH39 | 24 | 1 | ns    | 0.5 | -0.6 | 1.9 | 13 |
| PIEAB | BBCH39 | 26 | -2.7 | <0.05 | -3.75 | -6 | -1.25 | 10 |
| PIEAB | BBCH39 | 28 | -0.6 | ns    | -0.5 | -2.33 | 1.38 | 10 |
| PIEAB | BBCH39 | 30 | -0.7 | ns    | -0.21 | -1 | 0.46 | 19 |
| PIEAB | BBCH39 | 31 | 1.1 | ns    | 0.4 | -0.56 | 1.5 | 14 |
| PIEAB | BBCH39 | 32 | -2.1 | <0.05 | -0.57 | -1.2 | -0.08 | 16 |
| PIEAB | BBCH39 | 34 | -2.5 | <0.05 | -1.24 | -1.92 | -0.38 | 20 |
| PIEAB | BBCH39 | 36 | -0.1 | ns    | -0.19 | -1 | 1 | 15 |
| PIEAB | BBCH39 | 37 | 0.7 | ns    | 1.13 | -1 | 3.5 | 11 |
| PIEAB | BBCH39 | 38 | 2.4 | <0.05 | 0.54 | 0.29 | 1 | 20 |
| PIEAB | BBCH39 | 39 | -1 | ns    | -0.19 | -0.67 | 0.27 | 20 |
| PIEAB | BBCH39 | 41 | 2.5 | <0.05 | 0.92 | 0.42 | 1.67 | 16 |
| PIEAB | BBCH39 | 42 | 0.8 | ns    | 0.33 | -2 | 1.39 | 10 |
| PIEAB | BBCH61 | 5 | -0.9 | ns    | -0.83 | -3.4 | 1.17 | 10 |
| PIEAB | BBCH61 | 5 | -1.6 | ns    | -1.22 | -3.5 | 1 | 10 |
| PIEAB | BBCH61 | 6 | -1.8 | ns    | -0.59 | -1.33 | 0.2 | 13 |
| PIEAB | BBCH61 | 6 | 0 | ns    | 0 | -1.5 | 1 | 13 |
| PIEAB | BBCH61 | 8 | -1.8 | ns    | -1.24 | -2.11 | 0.15 | 16 |
| PIEAB | BBCH61 | 8 | -2.3 | <0.05 | -1.21 | -2.83 | -0.22 | 12 |
| PIEAB | BBCH61 | 10 | -2.5 | <0.05 | -0.8 | -1.88 | -0.17 | 17 |
| PIEAB | BBCH61 | 10 | -1.5 | ns    | -0.5 | -1.26 | 0.5 | 13 |
| PIEAB | BBCH61 | 14 | -0.7 | ns    | -0.5 | -1.58 | 1 | 14 |
| PIEAB | BBCH61 | 14 | -0.4 | ns    | -0.33 | -1.27 | 1 | 14 |
| PIEAB | BBCH61 | 18 | -0.7 | ns    | -0.33 | -1.57 | 0.75 | 13 |
| PIEAB | BBCH61 | 18 | -0.7 | ns    | -0.15 | -1.17 | 1 | 13 |
| PIEAB | BBCH61 | 19 | 0.3 | ns    | 0.27 | -1.22 | 1.33 | 13 |
| PIEAB  | BBCH61 | 19 | -0.3 | ns  | -0.24 | -1.44 | 1.23 | 10 |
|--------|--------|----|------|-----|--------|-------|------|----|
| PIEAB  | BBCH61 | 21 | -0.7 | ns  | -0.17 | -0.83 | 0.67 | 14 |
| PIEAB  | BBCH61 | 24 | 1.2  | ns  | 1.5   | -1.33 | 4    | 10 |
| PIEAB  | BBCH61 | 28 | -1.9 | ns  | -0.5  | -1.91 | 0.29 | 11 |
| PIEAB  | BBCH61 | 28 | -0.3 | ns  | -0.2  | -1    | 0.71 | 10 |
| PIEAB  | BBCH61 | 30 | -0.5 | ns  | -0.13 | -1    | 0.71 | 18 |
| PIEAB  | BBCH61 | 30 | -0.2 | ns  | 0     | -1    | 1.5  | 15 |
| PIEAB  | BBCH61 | 31 | 0    | ns  | 0     | -0.75 | 1.17 | 13 |
| PIEAB  | BBCH61 | 31 | 0.6  | ns  | 0.13  | -1    | 1.33 | 10 |
| PIEAB  | BBCH61 | 32 | 1.5  | ns  | 0.71  | -0.25 | 1.5  | 13 |
| PIEAB  | BBCH61 | 32 | 0.7  | ns  | 0.33  | -0.5  | 1    | 10 |
| PIEAB  | BBCH61 | 34 | 0.9  | ns  | 0.21  | -0.53 | 1    | 17 |
| PIEAB  | BBCH61 | 34 | -0.4 | ns  | -0.07 | -1.17 | 0.8  | 14 |
| PIEAB  | BBCH61 | 38 | -1.3 | ns  | -0.47 | -1.5  | 0.33 | 13 |
| PIEAB  | BBCH61 | 38 | -0.5 | ns  | -0.34 | -1.5  | 0.67 | 12 |
| PIEAB  | BBCH61 | 39 | 1    | ns  | 0.31  | -1    | 1.4  | 13 |
| PIEAB  | BBCH61 | 39 | 0.5  | ns  | 0.1   | -0.67 | 0.64 | 12 |
| PIEAB  | BBCH61 | 41 | -0.2 | ns  | -0.1  | -1.25 | 0.8  | 13 |
| PIEAB  | BBCH61 | 41 | 1.6  | ns  | 0.67  | -0.5  | 1.67 | 14 |
| PIEAB  | BBCH61 | 42 | 1.5  | ns  | 0.86  | -0.5  | 2.25 | 11 |
| PIEAB  | BBCH63 | 5  | -1.3 | ns  | -1    | -3    | 0.67 | 10 |
| PIEAB  | BBCH63 | 6  | -2   | ns  | -1.43 | -3.6  | -0.5 | 11 |
| PIEAB  | BBCH63 | 8  | -1.7 | ns  | -1.28 | -2.8  | 0.44 | 13 |
| PIEAB  | BBCH63 | 10 | -1.7 | ns  | -0.44 | -1    | 0.27 | 15 |
| PIEAB  | BBCH63 | 14 | 0.3  | ns  | 0.15  | -1.25 | 1.71 | 13 |
| PIEAB  | BBCH63 | 18 | -0.1 | ns  | -0.04 | -1    | 1    | 13 |
| PIEAB  | BBCH63 | 19 | -1.3 | ns  | -0.7  | -2.67 | 0.42 | 12 |
| PIEAB  | BBCH63 | 21 | -1.7 | ns  | -0.67 | -1.5  | 0.3  | 12 |
| PIEAB  | BBCH63 | 28 | -2.1 | <0.05| -1    | -2.75 | -0.25| 10 |
| PIEAB  | BBCH63 | 30 | -0.4 | ns  | -0.24 | -1    | 0.71 | 16 |
| PIEAB  | BBCH63 | 31 | -0.9 | ns  | -0.2  | -1.13 | 0.67 | 11 |
| PIEAB  | BBCH63 | 32 | 1    | ns  | 0.5   | -0.31 | 1.33 | 11 |
| PIEAB  | BBCH63 | 34 | -1.3 | ns  | -0.59 | -1.3  | 0.33 | 17 |
| PIEAB  | BBCH63 | 38 | -0.3 | ns  | -0.1  | -1.25 | 0.83 | 12 |
| PIEAB  | BBCH63 | 39 | 1.2  | ns  | 0.42  | -0.33 | 1    | 13 |
| PIEAB  | BBCH63 | 41 | 0.4  | ns  | 0.16  | -1    | 0.8  | 13 |
| PIUSI  | BBCH30 | 1  | -1.6 | ns  | -0.5  | -1.29 | 0.17 | 18 |
| PIUSI  | BBCH30 | 3  | -2.8 | <0.01| -1    | -1.53 | -0.5 | 20 |
| PIUSI  | BBCH30 | 5  | -2.7 | <0.05| -3    | -4    | -1.29| 10 |
| PIUSI  | BBCH30 | 6  | -3   | <0.01| -1.78 | -2.86 | -0.71| 14 |
| PIUSI  | BBCH30 | 8  | -1.2 | ns  | -0.52 | -1.29 | 0.33 | 20 |
| PIUSI  | BBCH30 | 10 | -2.6 | <0.05| -1.2  | -1.81 | -0.63| 20 |
| PIUSI  | BBCH30 | 14 | 0.1  | ns  | 0     | -1    | 1    | 19 |
| PIUSI  | BBCH30 | 18 | -0.4 | ns  | -0.08 | -1.07 | 0.79 | 18 |
| PIUSI  | BBCH30 | 19 | -1.1 | ns  | -0.35 | -1.13 | 0.5  | 21 |
| PIUSI  | BBCH30 | 21 | -0.4 | ns  | -0.11 | -0.71 | 0.5  | 21 |
| PIUSI  | BBCH30 | 22 | -0.9 | ns  | -0.5  | -1.75 | 1.2  | 15 |
| PIUSI  | BBCH30 | 24 | -1.2 | ns  | -0.84 | -2.78 | 0.71 | 13 |
| PIUSI | BBCH30 | 26 | -0.5 | ns | -0.75 | -3.2 | 2.5 | 11 |
|-------|--------|----|-------|----|--------|--------|----|----|
|       | BBCH30 | 28 | -0.4  | ns | -0.2  | -1.67 | 1.5 | 14 |
|       | BBCH30 | 29 | -2.1  | <0.05 | -1.25 | -2.6  | -0.14 | 10 |
|       | BBCH30 | 30 | -1.1  | ns | -0.25 | -0.8  | 0.2 | 20 |
|       | BBCH30 | 31 | -2    | ns | -0.33 | -1    | -0.08 | 18 |
|       | BBCH30 | 32 | -1.9  | ns | -0.4  | -1    | 0.08 | 18 |
|       | BBCH30 | 34 | 0     | ns | 0     | -0.83 | 0.8 | 20 |
|       | BBCH30 | 36 | 3.4   | <0.01 | 1.3   | 0.78  | 1.81 | 18 |
|       | BBCH30 | 37 | -1.8  | ns | -1.06 | -2.33 | 0.2 | 13 |
|       | BBCH30 | 38 | -1.4  | ns | -0.38 | -1.2  | 0.29 | 20 |
|       | BBCH30 | 39 | 0     | ns | 0     | -0.5  | 0.5 | 20 |
|       | BBCH30 | 40 | -1.4  | ns | -0.67 | -1.83 | 0.29 | 11 |
|       | BBCH39 |  1 | -1.1  | ns | -0.26 | -1.06 | 0.33 | 20 |
|       | BBCH39 |  3 | -1.8  | ns | -1.06 | -2.5  | 0.14 | 18 |
|       | BBCH39 |  5 | -0.9  | ns | -0.6  | -2.2  | 1.33 | 10 |
|       | BBCH39 |  6 | -0.7  | ns | -0.3  | -1.33 | 0.67 | 14 |
|       | BBCH39 |  8 | 1.8   | ns | 0.8   | -0.17 | 1.57 | 18 |
|       | BBCH39 | 10 | -0.9  | ns | -0.17 | -1    | 0.5 | 15 |
|       | BBCH39 | 14 | 1.3   | ns | 0.43  | -0.43 | 1.8 | 19 |
|       | BBCH39 | 18 | 0.6   | ns | 0.24  | -0.67 | 1.29 | 17 |
|       | BBCH39 | 19 | 1.2   | ns | 0.44  | -0.39 | 1.33 | 20 |
|       | BBCH39 | 21 | -0.5  | ns | -0.06 | -0.5  | 0.36 | 21 |
|       | BBCH39 | 22 | 1.9   | ns | 0.86  | -0.2  | 1.78 | 15 |
|       | BBCH39 | 24 | -0.9  | ns | -0.17 | -0.78 | 0.5 | 13 |
|       | BBCH39 | 26 | -1.2  | ns | -1.75 | -5    | 2   | 10 |
|       | BBCH39 | 30 | -1.1  | ns | -0.34 | -1    | 0.2 | 20 |
|       | BBCH39 | 31 | -0.4  | ns | -0.2  | -1.5  | 1.38 | 14 |
|       | BBCH39 | 32 | 2.1   | <0.05 | 0.5   | 0.11  | 1.13 | 17 |
|       | BBCH39 | 34 | -1.8  | ns | -1.2  | -2.42 | 0.18 | 20 |
|       | BBCH39 | 36 | 1     | ns | 0.73  | -1    | 1.67 | 17 |
|       | BBCH39 | 37 | 1.1   | ns | 1.2   | -2    | 3.67 | 11 |
|       | BBCH39 | 38 | 0.2   | ns | 0.09  | -0.67 | 0.88 | 20 |
|       | BBCH39 | 39 | 1.5   | ns | 0.43  | -0.25 | 1   | 20 |
|       | BBCH39 | 40 | 1.7   | ns | 1.25  | -0.75 | 2.5 | 10 |
|       | BBCH39 | 41 | 0.3   | ns | 0.09  | -0.56 | 0.89 | 16 |
|       | BBCH39 | 42 | 1.3   | ns | 0.77  | -0.67 | 2   | 14 |
|       | BBCH61 |  1 | -0.9  | ns | -0.31 | -1.29 | 0.46 | 19 |
|       | BBCH61 |  1 | 0.7   | ns | 0.26  | -0.5  | 1   | 20 |
|       | BBCH61 |  3 | -1.9  | ns | -0.6  | -1.67 | 0.2 | 18 |
|       | BBCH61 |  3 | -0.9  | ns | -0.4  | -1.43 | 0.57 | 19 |
|       | BBCH61 |  5 | -1.3  | ns | -0.67 | -2.33 | 1   | 10 |
|       | BBCH61 |  5 | -1.9  | ns | -0.83 | -2.67 | 0.5 | 10 |
|       | BBCH61 |  6 | -1.8  | ns | -0.55 | -1.2  | 0.17 | 13 |
|       | BBCH61 |  6 | -1    | ns | -0.19 | -1.25 | 0.5 | 13 |
|       | BBCH61 |  8 | -0.5  | ns | -0.29 | -1.78 | 0.88 | 15 |
|       | BBCH61 |  8 | -0.6  | ns | -0.28 | -1.5  | 0.88 | 16 |
| Component | Value 1 | Value 2 | Value 3 | Value 4 | Value 5 | Value 6 | Value 7 | Value 8 |
|-----------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIUSI BBCH61 10 | -2.1 | <0.05 | -0.56 | -1.17 | -0.13 | 19 |
| PIUSI BBCH61 10 | -2.1 | <0.05 | -0.75 | -1.39 | -0.13 | 19 |
| PIUSI BBCH61 14 | -1.4 | ns | -0.75 | -1.33 | 0.33 | 18 |
| PIUSI BBCH61 14 | -0.8 | ns | -0.5 | -1.25 | 0.75 | 17 |
| PIUSI BBCH61 18 | -2.5 | <0.05 | -0.93 | -1.9 | -0.4 | 17 |
| PIUSI BBCH61 18 | -2.6 | <0.05 | -1 | -1.71 | -0.33 | 18 |
| PIUSI BBCH61 19 | -1.6 | ns | -0.37 | -1 | 0.17 | 21 |
| PIUSI BBCH61 19 | -1.5 | ns | -0.29 | -1 | 0.25 | 21 |
| PIUSI BBCH61 21 | -3.1 | <0.01 | -1 | -1.55 | -0.5 | 20 |
| PIUSI BBCH61 21 | -2.6 | <0.05 | -0.71 | -1.29 | -0.25 | 21 |
| PIUSI BBCH61 22 | -1.5 | ns | -0.64 | -1.25 | 0.33 | 14 |
| PIUSI BBCH61 22 | -2.6 | <0.05 | -0.8 | -1.33 | -0.43 | 14 |
| PIUSI BBCH61 24 | -0.5 | ns | -0.28 | -1.22 | 0.86 | 13 |
| PIUSI BBCH61 24 | -0.2 | ns | 0 | -1 | 0.5 | 13 |
| PIUSI BBCH61 26 | -0.9 | ns | -0.5 | -1.29 | 1 | 11 |
| PIUSI BBCH61 26 | -1.3 | ns | -0.5 | -2 | 0.5 | 11 |
| PIUSI BBCH61 28 | -1.6 | ns | -0.91 | -2.83 | 0.5 | 11 |
| PIUSI BBCH61 28 | -0.8 | ns | -0.44 | -2.4 | 0.67 | 12 |
| PIUSI BBCH61 29 | 0.2 | ns | 0.2 | -2 | 2.5 | 10 |
| PIUSI BBCH61 29 | -0.1 | ns | -0.2 | -2.33 | 2.2 | 10 |
| PIUSI BBCH61 30 | -2.6 | <0.05 | -0.65 | -1.11 | -0.25 | 20 |
| PIUSI BBCH61 30 | -2.6 | <0.05 | -0.67 | -1.09 | -0.25 | 20 |
| PIUSI BBCH61 31 | -1.5 | ns | -0.43 | -1 | 0.22 | 18 |
| PIUSI BBCH61 31 | -2.7 | <0.05 | -0.86 | -1.33 | -0.38 | 17 |
| PIUSI BBCH61 32 | -2.6 | <0.05 | -0.59 | -1.17 | -0.2 | 19 |
| PIUSI BBCH61 32 | -2.2 | <0.05 | -0.67 | -1.14 | -0.13 | 18 |
| PIUSI BBCH61 34 | -2 | ns | -0.46 | -1 | -0.09 | 19 |
| PIUSI BBCH61 34 | -2.6 | <0.05 | -0.5 | -1 | -0.17 | 19 |
| PIUSI BBCH61 36 | -1.9 | ns | -0.89 | -1.78 | 0.17 | 12 |
| PIUSI BBCH61 36 | -1.8 | ns | -0.78 | -1.67 | 0.25 | 13 |
| PIUSI BBCH61 37 | 0 | ns | 0 | -1.83 | 2 | 10 |
| PIUSI BBCH61 37 | -0.5 | ns | -0.4 | -2.5 | 1.8 | 10 |
| PIUSI BBCH61 38 | -2.2 | <0.05 | -0.55 | -1 | -0.17 | 20 |
| PIUSI BBCH61 38 | -2.5 | <0.05 | -0.78 | -1.22 | -0.4 | 19 |
| PIUSI BBCH61 39 | -0.6 | ns | -0.12 | -0.83 | 0.56 | 20 |
| PIUSI BBCH61 39 | -0.4 | ns | -0.07 | -0.75 | 0.5 | 20 |
| PIUSI BBCH61 40 | -0.9 | ns | -0.57 | -2.2 | 0.67 | 11 |
| PIUSI BBCH61 40 | -0.8 | ns | -0.4 | -2 | 1 | 10 |
| PIUSI BBCH61 41 | -1.3 | ns | -0.33 | -0.89 | 0.36 | 18 |
| PIUSI BBCH61 41 | -2 | ns | -0.62 | -1 | -0.13 | 19 |
| PIUSI BBCH61 42 | -0.4 | ns | -0.04 | -0.75 | 0.5 | 16 |
| PIUSI BBCH61 42 | -0.9 | ns | -0.2 | -0.6 | 0.3 | 14 |
| PIUSI BBCH63 1 | -0.6 | ns | -0.23 | -1.17 | 0.83 | 17 |
| PIUSI BBCH63 3 | -3.8 | <0.001 | -1.82 | -2.56 | -1.25 | 15 |
| PIUSI BBCH63 5 | -1.3 | ns | -0.86 | -3 | 0.6 | 10 |
| PIUSI BBCH63 6 | -1.9 | ns | -1.43 | -2.17 | 0.13 | 11 |
| PIUSI BBCH63 8 | 0 | ns | 0 | -1.54 | 1.62 | 13 |
| PIUSI BBCH63 10 | -1.2 | ns | -0.46 | -1.29 | 0.5 | 16 |
|        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|
| PIUSI  | BBCH63| 14     | -0.9   | ns     | -0.45  | -1     | 0.71   | 16     |
| PIUSI  | BBCH63| 18     | -1.9   | ns     | -0.79  | -1.63  | 0.09   | 18     |
| PIUSI  | BBCH63| 19     | -2.6   | <0.05  | -0.79  | -1.25  | -0.29  | 20     |
| PIUSI  | BBCH63| 21     | -2.4   | <0.05  | -0.68  | -1.54  | -0.2   | 19     |
| PIUSI  | BBCH63| 22     | -1.5   | ns     | -0.8   | -2.13  | 0.33   | 14     |
| PIUSI  | BBCH63| 24     | -0.8   | ns     | -0.27  | -1.25  | 0.75   | 13     |
| PIUSI  | BBCH63| 26     | -0.4   | ns     | -0.4   | -2     | 1      | 11     |
| PIUSI  | BBCH63| 28     | -1.5   | ns     | -0.88  | -2     | 0.44   | 10     |
| PIUSI  | BBCH63| 30     | -3     | <0.01  | -0.79  | -1.25  | -0.29  | 20     |
| PIUSI  | BBCH63| 31     | -2.2   | <0.05  | -0.5   | -1.38  | -0.17  | 14     |
| PIUSI  | BBCH63| 32     | -2     | ns     | -0.57  | -1.33  | -0.1   | 18     |
| PIUSI  | BBCH63| 34     | -2.8   | <0.01  | -0.67  | -1.14  | -0.36  | 19     |
| PIUSI  | BBCH63| 36     | -1.3   | ns     | -1.17  | -2     | 1      | 11     |
| PIUSI  | BBCH63| 37     | 1.1    |       | 0.5    | -1     | 1.71   | 10     |
| PIUSI  | BBCH63| 38     | -1.3   | ns     | -0.25  | -0.65  | 0.25   | 19     |
| PIUSI  | BBCH63| 39     | -1.3   | ns     | -0.35  | -0.75  | 0.25   | 20     |
| PIUSI  | BBCH63| 40     | -0.6   | ns     | -0.67  | -3     | 1.5    | 10     |
| PIUSI  | BBCH63| 41     | -1.1   | ns     | -0.31  | -0.8   | 0.3    | 19     |
| PIUSI  | BBCH63| 42     | -0.8   | ns     | -0.17  | -0.83  | 0.38   | 16     |
| POPTR  | BBCH15| 1      | -2.2   | <0.05  | -0.68  | -1.33  | -0.13  | 21     |
| POPTR  | BBCH15| 2      | -0.7   | ns     | -0.63  | -2.67  | 2      | 11     |
| POPTR  | BBCH15| 3      | -0.9   | ns     | -0.25  | -1.13  | 0.33   | 18     |
| POPTR  | BBCH15| 5      | -1.1   | ns     | -0.83  | -3.5   | 1      | 10     |
| POPTR  | BBCH15| 8      | 1.3    | ns     | 0.75   | -0.29  | 1.67   | 17     |
| POPTR  | BBCH15| 10     | -1.7   | ns     | -0.57  | -1.25  | 0.17   | 20     |
| POPTR  | BBCH15| 14     | -0.2   | ns     | -0.12  | -0.91  | 0.67   | 19     |
| POPTR  | BBCH15| 18     | -1.6   | ns     | -0.55  | -1.2   | 0.2    | 18     |
| POPTR  | BBCH15| 19     | -1.5   | ns     | -0.37  | -0.92  | 0.29   | 20     |
| POPTR  | BBCH15| 21     | -1.9   | ns     | -0.62  | -1.27  | 0.08   | 21     |
| POPTR  | BBCH15| 22     | 0      | ns     | -1     | 0.71   | 15     |
| POPTR  | BBCH15| 24     | 1.9    | ns     | 0.5    | -0.17  | 1.11   | 13     |
| POPTR  | BBCH15| 26     | -1.1   | ns     | -0.8   | -2.5   | 1.6    | 10     |
| POPTR  | BBCH15| 28     | -0.9   | ns     | -1.17  | -2.71  | 0.78   | 10     |
| POPTR  | BBCH15| 29     | -1.3   | ns     | -1.2   | -2.75  | 0.67   | 10     |
| POPTR  | BBCH15| 30     | -2.4   | <0.05  | -0.5   | -1     | -0.17  | 20     |
| POPTR  | BBCH15| 31     | -2.2   | <0.05  | -1     | -2     | -0.2   | 15     |
| POPTR  | BBCH15| 32     | -1.2   | ns     | -0.33  | -1     | 0.38   | 19     |
| POPTR  | BBCH15| 34     | -0.8   | ns     | -0.24  | -1     | 0.43   | 20     |
| POPTR  | BBCH15| 36     | -2.5   | <0.05  | -0.71  | -1.25  | -0.2   | 19     |
| POPTR  | BBCH15| 37     | 0.9    | ns     | 0.5    | -1     | 1.67   | 11     |
| POPTR  | BBCH15| 38     | 2.1    | <0.05  | 0.8    | 0.25   | 1.77   | 19     |
| POPTR  | BBCH15| 39     | 0.4    | ns     | 0.08   | -0.67  | 0.75   | 20     |
| POPTR  | BBCH15| 40     | 1      | ns     | 0.5    | -1     | 2.25   | 11     |
| POPTR  | BBCH15| 41     | 0.5    | ns     | 0.23   | -0.42  | 1      | 16     |
| POPTR  | BBCH15| 42     | -0.4   | ns     | -0.08  | -1     | 0.56   | 18     |
| POPTR  | BBCH92| 1      | 1.8    | ns     | 0.41   | -0.09  | 1.11   | 20     |
| POPTR  | BBCH92| 2      | 0.6    | ns     | 1      | -2.67  | 2.83   | 11     |
| POPTR  | BBCH92| 3      | -0.4   | ns     | -0.09  | -0.6   | 0.5    | 19     |
| POPTR  | BBCH92 | 5   | 1.7 | ns  | 1   | -0.75 | 2.5  | 10  |
|-------|--------|-----|-----|-----|-----|-------|------|-----|
| POPTR  | BBCH92 | 8   | -0.6 | ns  | -0.27 | -1   | 0.53 | 17  |
| POPTR  | BBCH92 | 10  | 0   | ns  | 0   | -0.79 | 0.8  | 17  |
| POPTR  | BBCH92 | 14  | 0.9 | ns  | 0.29 | -0.4 | 1    | 18  |
| POPTR  | BBCH92 | 18  | 0.6 | ns  | 0.17 | -0.6 | 1    | 19  |
| POPTR  | BBCH92 | 19  | 2.3 | <0.05 | 0.91 | 0.19 | 1.58 | 21  |
| POPTR  | BBCH92 | 21  | -0.6 | ns  | -0.14 | -1.15 | 0.75 | 19  |
| POPTR  | BBCH92 | 22  | 2.1 | <0.05 | 0.78 | 0.14 | 2    | 13  |
| POPTR  | BBCH92 | 24  | -1 | ns  | -0.47 | -1.4 | 0.5  | 13  |
| POPTR  | BBCH92 | 30  | 0 | ns  | 0   | -0.75 | 0.71 | 16  |
| POPTR  | BBCH92 | 32  | -1 | ns  | -0.39 | -1   | 0.33 | 18  |
| POPTR  | BBCH92 | 34  | 0.6 | ns  | 0.09 | -0.36 | 0.5  | 19  |
| POPTR  | BBCH92 | 36  | -2.6 | <0.05 | -0.71 | -1   | -0.4 | 15  |
| POPTR  | BBCH92 | 37  | -0.5 | ns  | -0.33 | -1.5 | 1.33 | 12  |
| POPTR  | BBCH92 | 38  | 2.1 | <0.05 | 0.46 | 0.15 | 1    | 20  |
| POPTR  | BBCH92 | 39  | -1.8 | ns  | -0.38 | -1   | 0.09 | 20  |
| POPTR  | BBCH92 | 41  | 0   | ns  | 0   | -0.85 | 0.86 | 16  |
| POPTR  | BBCH92 | 42  | -1.7 | ns  | -0.4 | -1.07 | 0.14 | 15  |
| POPTR  | BBCH97 | 1   | 2.3 | <0.05 | 0.8 | 0.25 | 1.33 | 19  |
| POPTR  | BBCH97 | 3   | -0.2 | ns  | -0.2 | -1.36 | 1    | 15  |
| POPTR  | BBCH97 | 5   | 1   | ns  | 0.71 | -1.4 | 3    | 10  |
| POPTR  | BBCH97 | 8   | 0   | ns  | -0.16 | -0.82 | 0.4  | 16  |
| POPTR  | BBCH97 | 10  | -1.4 | ns  | -0.33 | -0.82 | 0.17 | 15  |
| POPTR  | BBCH97 | 14  | 1.5 | ns  | 0.4 | -0.25 | 0.88 | 18  |
| POPTR  | BBCH97 | 18  | 1.2 | ns  | 0.4 | -0.5 | 1    | 15  |
| POPTR  | BBCH97 | 19  | 2.9 | <0.01 | 0.91 | 0.5 | 1.44 | 21  |
| POPTR  | BBCH97 | 21  | -0.7 | ns  | -0.42 | -1.57 | 1    | 14  |
| POPTR  | BBCH97 | 22  | 0.8 | ns  | 0.29 | -1   | 1.33 | 12  |
| POPTR  | BBCH97 | 24  | -1.6 | ns  | -0.63 | -2   | 0.5  | 13  |
| POPTR  | BBCH97 | 30  | -1.3 | ns  | -0.17 | -0.94 | 0.39 | 20  |
| POPTR  | BBCH97 | 32  | -1.2 | ns  | -0.42 | -1   | 0.3  | 18  |
| POPTR  | BBCH97 | 34  | 0.5 | ns  | 0.07 | -0.44 | 0.43 | 19  |
| POPTR  | BBCH97 | 36  | -1.5 | ns  | -0.44 | -1   | 0.22 | 15  |
| POPTR  | BBCH97 | 37  | -0.2 | ns  | -0.25 | -1.5 | 2    | 11  |
| POPTR  | BBCH97 | 38  | 0.3 | ns  | 0.11 | -0.36 | 0.73 | 20  |
| POPTR  | BBCH97 | 39  | -1.9 | ns  | -0.63 | -1.09 | 0.14 | 20  |
| POPTR  | BBCH97 | 41  | -1.1 | ns  | -0.6 | -1.33 | 0.5  | 16  |
| POPTR  | BBCH97 | 42  | -3.4 | <0.01 | -1.16 | -2.33 | -0.58 | 13  |
| PRNPA  | BBCH65 | 1   | -1.1 | ns  | -0.48 | -1.17 | 0.38 | 21  |
| PRNPA  | BBCH65 | 5   | -1  | ns  | -0.6 | -3   | 1.25 | 10  |
| PRNPA  | BBCH65 | 6   | -1.6 | ns  | -0.5 | -2.8 | 0.5  | 11  |
| PRNPA  | BBCH65 | 8   | -0.8 | ns  | -0.37 | -1.14 | 0.4  | 20  |
| PRNPA  | BBCH65 | 10  | -2  | ns  | -0.6 | -1.08 | -0.08 | 20  |
| PRNPA  | BBCH65 | 14  | -0.8 | ns  | -0.25 | -1   | 0.44 | 19  |
| PRNPA  | BBCH65 | 18  | -2.8 | <0.01 | -0.67 | -1.2 | -0.4 | 18  |
| PRNPA  | BBCH65 | 19  | -1.1 | ns  | -0.29 | -0.87 | 0.27 | 21  |
| PRNPA  | BBCH65 | 21  | -0.7 | ns  | -0.19 | -0.8 | 0.5  | 21  |
| PRNPA  | BBCH65 | 22  | -1.9 | ns  | -0.8 | -1.5 | 0.11 | 15  |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
| PRNPA BBCH65 | 24 | -1.6 | ns | -0.81 | -2 | 0.5 | 13 |
| PRNPA BBCH65 | 26 | -2.1 | <0.05 | -1.25 | -2.2 | -0.29 | 11 |
| PRNPA BBCH65 | 28 | -0.8 | ns | -0.33 | -2 | 1 | 14 |
| PRNPA BBCH65 | 29 | -1.8 | ns | -1.25 | -2 | 0.17 | 10 |
| PRNPA BBCH65 | 30 | -1.1 | ns | -0.29 | -0.89 | 0.33 | 20 |
| PRNPA BBCH65 | 31 | -2.6 | <0.05 | -0.57 | -1.06 | -0.17 | 15 |
| PRNPA BBCH65 | 32 | -0.8 | ns | -0.2 | -0.94 | 0.64 | 19 |
| PRNPA BBCH65 | 34 | 0 | ns | 0 | -0.65 | 0.39 | 20 |
| PRNPA BBCH65 | 36 | -1 | ns | -0.22 | -0.86 | 0.39 | 19 |
| PRNPA BBCH65 | 37 | -0.7 | ns | -0.75 | -3 | 1.4 | 11 |
| PRNPA BBCH65 | 38 | -0.5 | ns | -0.09 | -0.8 | 0.5 | 20 |
| PRNPA BBCH65 | 39 | 0.4 | ns | 0.15 | -0.46 | 0.53 | 20 |
| PRNPA BBCH65 | 40 | -0.8 | ns | -0.7 | -3 | 1 | 11 |
| PRNPA BBCH65 | 41 | 1.1 | ns | 0.33 | -0.33 | 1 | 11 |
| PRNPA BBCH65 | 42 | 0 | ns | 0 | -0.56 | 0.5 | 19 |
| PRNPA BBCH87 | 1 | -1.6 | ns | -1 | -2.25 | 0.5 | 14 |
| PRNPA BBCH87 | 5 | -1.1 | ns | -0.71 | -1.5 | 0.67 | 10 |
| PRNPA BBCH87 | 10 | 0.9 | ns | 0.67 | -1 | 2 | 11 |
| PRNPA BBCH87 | 14 | 0.1 | ns | 0 | -0.89 | 1.5 | 16 |
| PRNPA BBCH87 | 18 | -2.9 | <0.01 | -1.56 | -3 | -1 | 14 |
| PRNPA BBCH87 | 19 | 0 | ns | 0 | -0.75 | 0.71 | 15 |
| PRNPA BBCH87 | 21 | -0.9 | ns | -0.83 | -1.67 | 0.64 | 16 |
| PRNPA BBCH87 | 22 | -2.3 | <0.05 | -1.71 | -2.82 | -0.25 | 14 |
| PRNPA BBCH87 | 24 | 1 | ns | 0.93 | -1 | 2.25 | 13 |
| PRNPA BBCH87 | 30 | -1.1 | ns | -0.5 | -1.13 | 0.83 | 19 |
| PRNPA BBCH87 | 32 | -2.4 | <0.05 | -1.23 | -2.89 | -0.25 | 11 |
| PRNPA BBCH87 | 34 | 0.8 | ns | 0.46 | -0.67 | 1.5 | 18 |
| PRNPA BBCH87 | 36 | -1.6 | ns | -0.6 | -1.6 | 0.5 | 13 |
| PRNPA BBCH87 | 37 | 0.3 | ns | 0.33 | -1.5 | 2.25 | 12 |
| PRNPA BBCH87 | 38 | 0.5 | ns | 0.54 | -0.69 | 2 | 12 |
| PRNPA BBCH87 | 39 | -0.5 | ns | -0.21 | -0.73 | 0.5 | 17 |
| PRNPA BBCH87 | 41 | 1.3 | ns | 0.48 | -0.33 | 1 | 17 |
| SOUAU BBCH07 | 1 | -2.7 | <0.01 | -1.07 | -2 | -0.4 | 15 |
| SOUAU BBCH07 | 2 | -2 | ns | -1.75 | -3.2 | -0.33 | 10 |
| SOUAU BBCH07 | 6 | -2.3 | <0.05 | -1.65 | -2.8 | -0.33 | 13 |
| SOUAU BBCH07 | 8 | -0.9 | ns | -0.33 | -1.21 | 0.5 | 18 |
| SOUAU BBCH07 | 10 | -0.9 | ns | -0.2 | -0.78 | 0.5 | 19 |
| SOUAU BBCH07 | 14 | 0.2 | ns | 0.08 | -1 | 0.9 | 18 |
| SOUAU BBCH07 | 18 | 0.7 | ns | 0.38 | -0.5 | 1.33 | 17 |
| SOUAU BBCH07 | 19 | 1.4 | ns | 0.32 | -0.33 | 1 | 20 |
| SOUAU BBCH07 | 21 | -0.6 | ns | -0.21 | -1 | 0.44 | 19 |
| SOUAU BBCH07 | 22 | -0.9 | ns | -0.4 | -1.33 | 0.5 | 14 |
| SOUAU BBCH07 | 24 | 0.2 | ns | 0.27 | -1 | 1 | 12 |
| SOUAU BBCH07 | 26 | 1.1 | ns | 1 | -1 | 3.5 | 10 |
| SOUAU BBCH07 | 28 | 1.1 | ns | 0.68 | -0.6 | 1.8 | 13 |
| SOUAU BBCH07 | 30 | 0.9 | ns | 0.14 | -0.44 | 0.67 | 19 |
| SOUAU BBCH07 | 31 | 0.9 | ns | 0.27 | -0.5 | 0.75 | 15 |
| SOUAU BBCH07 | 32 | 1.5 | ns | 0.38 | -0.14 | 1 | 18 |
| SOU AU BBCH07 | 34 | -1.5 | ns | -0.54 | -1.38 | 0.29 | 19 |
| SOU AU BBCH07 | 36 | -0.6 | ns | -0.13 | -0.71 | 0.33 | 18 |
| SOU AU BBCH07 | 37 | 0.9  | ns | 0.14  | -0.6  | 1    | 11 |
| SOU AU BBCH07 | 38 | 0.3  | ns | 0     | -0.5  | 0.78 | 19 |
| SOU AU BBCH07 | 39 | 1.7  | ns | 0.38  | -0.3  | 1    | 18 |
| SOU AU BBCH07 | 40 | -0.9 | ns | -0.29 | -2    | 1    | 11 |
| SOU AU BBCH07 | 41 | 2.7  | <0.05 ns | 0.67 | 0.25 | 1.1 | 18 |
| SOU AU BBCH07 | 42 | -2.1 | <0.05 | -0.86 | -1.75 | -0.13 | 19 |
| SOU AU BBCH13 | 1  | 1.8  | ns | -0.56 | -1.25 | 0.13 | 20 |
| SOU AU BBCH13 | 2  | 1.1  | ns | -1.5  | -5.5  | 1.5  | 10 |
| SOU AU BBCH13 | 6  | -2.6 | <0.05 | -1.17 | -1.71 | -0.67 | 13 |
| SOU AU BBCH13 | 8  | -1.7 | ns | -0.53 | -1.2  | 0.17  | 19 |
| SOU AU BBCH13 | 10 | -0.2 | ns | 0     | -0.77 | 0.67  | 19 |
| SOU AU BBCH13 | 14 | -0.7 | ns | -0.29 | -1    | 0.63  | 18 |
| SOU AU BBCH13 | 18 | 0.5  | ns | 0.12  | -0.5  | 1    | 17 |
| SOU AU BBCH13 | 19 | 0.1  | ns | 0     | -0.5  | 0.8  | 20 |
| SOU AU BBCH13 | 21 | -1.3 | ns | -0.24 | -0.64 | 0.3  | 19 |
| SOU AU BBCH13 | 22 | 0.5  | ns | 0.13  | -0.88 | 1.17  | 14 |
| SOU AU BBCH13 | 24 | 1.3  | ns | 0.47  | -0.67 | 2.43  | 12 |
| SOU AU BBCH13 | 26 | 0    | ns | 0     | -3    | 2    | 10 |
| SOU AU BBCH13 | 28 | 0.2  | ns | 0.17  | -1    | 2    | 13 |
| SOU AU BBCH13 | 30 | 0.9  | ns | 0.2   | -0.4  | 0.92  | 19 |
| SOU AU BBCH13 | 31 | -0.1 | ns | 0     | -1    | 0.8  | 13 |
| SOU AU BBCH13 | 32 | 0    | ns | 0     | -0.43 | 0.5  | 18 |
| SOU AU BBCH13 | 34 | -2.1 | <0.05 | -0.33 | -0.83 | -0.07 | 19 |
| SOU AU BBCH13 | 36 | -0.6 | ns | -0.14 | -0.67 | 0.6  | 17 |
| SOU AU BBCH13 | 37 | 0.2  | ns | 0.17  | -1.43 | 1    | 10 |
| SOU AU BBCH13 | 38 | 0.1  | ns | 0     | -0.5  | 0.6  | 19 |
| SOU AU BBCH13 | 39 | 2.3  | <0.05 | 0.6   | 0.18  | 1.14  | 18 |
| SOU AU BBCH13 | 40 | 0    | ns | 0     | -1.33 | 1.57  | 11 |
| SOU AU BBCH13 | 41 | 0.8  | ns | 0.3   | -0.44 | 1    | 18 |
| SOU AU BBCH13 | 42 | 0.8  | ns | 0.2   | -0.25 | 0.75  | 18 |
| SOU AU BBCH13 | 43 | 0.3  | ns | 0.1   | -0.75 | 0.94  | 21 |
| SOU AU BBCH13 | 44 | 2    | -2 ns | -1.75 | -3.67 | -0.5  | 10 |
| SOU AU BBCH13 | 45 | -2.4 | <0.05 | -1.5  | -3    | -0.33 | 10 |
| SOU AU BBCH13 | 46 | 0    | ns | 0     | -1    | 1.5  | 13 |
| SOU AU BBCH13 | 47 | 0.2  | ns | 0.07  | -0.67 | 0.89  | 19 |
| SOU AU BBCH13 | 48 | 10   | -1.3 ns | -0.49 | -1.11 | 0.42  | 20 |
| SOU AU BBCH13 | 49 | -0.6 | ns | -0.29 | -1    | 0.64  | 19 |
| SOU AU BBCH13 | 50 | -2   | ns | -0.77 | -1.25 | -0.07 | 18 |
| SOU AU BBCH13 | 51 | -0.9 | ns | -0.29 | -0.89 | 0.33  | 20 |
| SOU AU BBCH13 | 52 | 2    | -2 ns | -0.5  | -1.13 | -0.06 | 20 |
| SOU AU BBCH13 | 53 | -1.7 | ns | -0.54 | -1.14 | 0.14  | 15 |
| SOU AU BBCH13 | 54 | -0.9 | ns | -0.24 | -1.33 | 0.63  | 13 |
| SOU AU BBCH13 | 55 | -1.6 | ns | -0.86 | -2.67 | 0.5   | 11 |
| SOU AU BBCH13 | 56 | -1   | ns | -0.58 | -1.25 | 0.8   | 13 |
| SOU AU BBCH13 | 57 | -1.9 | ns | -0.43 | -1    | 0.09  | 19 |
| SOU AU BBCH13 | 58 | -2.9 | <0.01 ns | -0.88 | -1.5  | -0.58 | 17 |
| Sample | Type | Value 1 | Value 2 | Value 3 | Value 4 | Value 5 | Value 6 | Value 7 | Value 8 | Value 9 | Value 10 | Value 11 | Value 12 | Value 13 | Value 14 | Value 15 | Value 16 | Value 17 |
|--------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| SOUAU  | BBCH65 | 32 | -1.8 | ns | -0.5 | -1 | 0.17 | 19 |
| SOUAU  | BBCH65 | 34 | -2.2 | <0.05 | -0.55 | -1 | -0.14 | 20 |
| SOUAU  | BBCH65 | 36 | -0.9 | ns | -0.23 | -0.72 | 0.59 | 16 |
| SOUAU  | BBCH65 | 38 | -1.6 | ns | -0.36 | -0.85 | 0.17 | 20 |
| SOUAU  | BBCH65 | 39 | -1.4 | ns | -0.31 | -0.83 | 0.29 | 17 |
| SOUAU  | BBCH65 | 41 | -1.1 | ns | -0.2 | -0.63 | 0.31 | 18 |
| SOUAU  | BBCH65 | 42 | -1.2 | ns | -0.29 | -1 | 0.25 | 18 |
| SOUAU  | BBCH87 | 1  | 0.7  | ns | -0.5 | -1.9 | 1  | 15 |
| SOUAU  | BBCH87 | 3  | 0    | ns | -0.13 | -2.5 | 1.33 | 10 |
| SOUAU  | BBCH87 | 5  | -0.9 | ns | -0.5 | -1.25 | 1 | 10 |
| SOUAU  | BBCH87 | 6  | 1.3  | ns | 0.8  | -1.29 | 2.5 | 10 |
| SOUAU  | BBCH87 | 7  | 0.7  | ns | 0.1  | -0.71 | 1.4 | 16 |
| SOUAU  | BBCH87 | 10 | 1.8  | ns | 0.54 | -0.13 | 1.38 | 16 |
| SOUAU  | BBCH87 | 14 | 1.3  | ns | 0.73 | -0.6 | 1.75 | 15 |
| SOUAU  | BBCH87 | 18 | 1.3  | ns | 0.69 | -0.6 | 1.75 | 13 |
| SOUAU  | BBCH87 | 19 | 2.2  | <0.05 | 0.7 | 0.17 | 1.5 | 19 |
| SOUAU  | BBCH87 | 21 | 0.7  | ns | 0.22 | -0.63 | 1.43 | 16 |
| SOUAU  | BBCH87 | 22 | -0.6 | ns | -0.18 | -1.5 | 1.09 | 13 |
| SOUAU  | BBCH87 | 24 | 0.5  | ns | 0.4  | -1.57 | 2.5 | 11 |
| SOUAU  | BBCH87 | 30 | 1.2  | ns | 0.3 | -0.33 | 0.86 | 20 |
| SOUAU  | BBCH87 | 32 | 0.1  | ns | 0 | -0.78 | 0.82 | 14 |
| SOUAU  | BBCH87 | 34 | -0.4 | ns | -0.23 | -1 | 0.8 | 16 |
| SOUAU  | BBCH87 | 37 | -0.1 | ns | -0.25 | -2.5 | 1.5 | 10 |
| SOUAU  | BBCH87 | 38 | 1.3  | ns | 0.89 | -0.17 | 2 | 15 |
| SOUAU  | BBCH87 | 39 | -0.3 | ns | -0.1 | -1 | 0.67 | 15 |
| SOUAU  | BBCH87 | 41 | 1.5  | ns | 1.11 | -0.5 | 1.8 | 14 |
| SOUAU  | BBCH87 | 42 | -0.9 | ns | -0.38 | -2 | 1.25 | 11 |
| SOUAU  | BBCH92 | 1   | 1.8  | ns | 0.68 | -0.11 | 1.5 | 20 |
| SOUAU  | BBCH92 | 6   | 1.2  | ns | 0.67 | -1.14 | 2.5 | 13 |
| SOUAU  | BBCH92 | 8   | 2.3  | <0.05 | 1.06 | 0.4 | 2.25 | 18 |
| SOUAU  | BBCH92 | 10  | 2.7  | <0.05 | 1.59 | 0.67 | 3 | 16 |
| SOUAU  | BBCH92 | 14  | 3    | <0.01 | 1.89 | 1 | 2.82 | 17 |
| SOUAU  | BBCH92 | 18  | 2.8  | <0.01 | 1.5 | 0.69 | 3 | 15 |
| SOUAU  | BBCH92 | 19  | 0.7  | ns | 0.39 | -0.5 | 1.26 | 19 |
| SOUAU  | BBCH92 | 21  | 0.6  | ns | 0.14 | -0.5 | 0.67 | 15 |
| SOUAU  | BBCH92 | 22  | 2.9  | <0.01 | 2.65 | 1 | 5 | 12 |
| SOUAU  | BBCH92 | 24  | 1.6  | ns | 1.67 | -0.4 | 4 | 11 |
| SOUAU  | BBCH92 | 30  | 3.6  | <0.001 | 1.61 | 0.89 | 2.5 | 17 |
| SOUAU  | BBCH92 | 32  | 0.2  | ns | 0.07 | -0.83 | 1 | 16 |
| SOUAU  | BBCH92 | 34  | 3.3  | <0.01 | 2.18 | 1 | 3.17 | 17 |
| SOUAU  | BBCH92 | 36  | 0.5  | ns | 0.2 | -0.57 | 1.39 | 11 |
| SOUAU  | BBCH92 | 37  | 1.9  | ns | 2 | -0.33 | 3.13 | 11 |
| SOUAU  | BBCH92 | 38  | 2.8  | <0.01 | 1.16 | 0.5 | 2.14 | 17 |
| SOUAU  | BBCH92 | 39  | 3    | <0.01 | 1 | 0.5 | 1.75 | 19 |
| SOUAU  | BBCH92 | 41  | 2.4  | <0.05 | 0.79 | 0.39 | 2 | 14 |
| VACMY  | BBCH65 | 1   | -1.1 | ns | -0.41 | -1.11 | 0.33 | 21 |
| VACMY  | BBCH65 | 3   | -1.6 | ns | -0.67 | -1.27 | 0.22 | 19 |
| VACMY  | BBCH65 | 5   | -0.7 | ns | -0.5 | -2.2 | 1.25 | 10 |
| VACMY | BBCH65 | 6  | -1.9 | ns  | -0.78 | -1.5 | 0.13 | 14  |
|-------|--------|----|------|-----|--------|------|------|-----|
| VACMY | BBCH65 | 8  | -1.2 | ns  | -0.4  | -1   | 0.27 | 21  |
| VACMY | BBCH65 | 10 | -2.1 | <0.05| -0.45 | -1.2 | -0.14| 20  |
| VACMY | BBCH65 | 14 | -1.2 | ns  | -0.44 | -1   | 0.29 | 19  |
| VACMY | BBCH65 | 18 | -1.4 | ns  | -0.35 | -1   | 0.25 | 18  |
| VACMY | BBCH65 | 19 | -2.1 | <0.05| -0.67 | -1   | -0.13| 21  |
| VACMY | BBCH65 | 21 | -0.7 | ns  | -0.19 | -0.83| 0.57 | 21  |
| VACMY | BBCH65 | 22 | -1.3 | ns  | -1    | -1.67| 0.4  | 15  |
| VACMY | BBCH65 | 24 | -0.4 | ns  | -0.44 | -2.13| 1.25 | 13  |
| VACMY | BBCH65 | 26 | -2   | ns  | -1.5  | -2.71| -0.17| 11  |
| VACMY | BBCH65 | 28 | -1.2 | ns  | -0.74 | -2   | 0.33 | 13  |
| VACMY | BBCH65 | 29 | -2.3 | <0.05| -1.5  | -3.75| -0.83| 10  |
| VACMY | BBCH65 | 30 | -2   | ns  | -0.49 | -1   | -0.08| 20  |
| VACMY | BBCH65 | 31 | -1.5 | ns  | -0.4  | -1.11| 0.13 | 18  |
| VACMY | BBCH65 | 32 | -0.4 | ns  | -0.11 | -0.83| 0.63 | 19  |
| VACMY | BBCH65 | 34 | -2.5 | <0.05| -0.5  | -0.93| -0.18| 19  |
| VACMY | BBCH65 | 36 | -1.1 | ns  | -0.33 | -1   | 0.5  | 17  |
| VACMY | BBCH65 | 37 | -0.1 | ns  | -0.17 | -2.5 | 2.25 | 10  |
| VACMY | BBCH65 | 38 | -0.7 | ns  | -0.2  | -0.67| 0.36 | 20  |
| VACMY | BBCH65 | 39 | -0.1 | ns  | 0     | -0.6 | 0.57 | 21  |
| VACMY | BBCH65 | 40 | -1.3 | ns  | -0.9  | -3.4 | 0.67 | 11  |
| VACMY | BBCH65 | 41 | 1.2  | ns  | 0.33  | -0.5 | 0.88 | 19  |
| VACMY | BBCH65 | 42 | -0.8 | ns  | -0.17 | -0.62| 0.33 | 20  |
| VACMY | BBCH86 | 1  | 0.5  | ns  | 0.19  | -0.61| 1.46 | 21  |
| VACMY | BBCH86 | 2  | -0.1 | ns  | 0     | -2   | 1.67 | 11  |
| VACMY | BBCH86 | 3  | -0.4 | ns  | -0.06 | -1.33| 0.92 | 20  |
| VACMY | BBCH86 | 5  | -1.3 | ns  | -0.88 | -3.5 | 1    | 10  |
| VACMY | BBCH86 | 6  | 0.8  | ns  | 0.33  | -1   | 1.38 | 14  |
| VACMY | BBCH86 | 8  | 2    | ns  | 0.8   | 0.12 | 1.75 | 20  |
| VACMY | BBCH86 | 10 | -0.7 | ns  | -0.2  | -0.86| 0.43 | 18  |
| VACMY | BBCH86 | 14 | 0.8  | ns  | 0.4   | -0.5 | 1    | 19  |
| VACMY | BBCH86 | 18 | 1.4  | ns  | 0.55  | -0.33| 1.86 | 16  |
| VACMY | BBCH86 | 19 | -0.4 | ns  | -0.03 | -0.77| 0.5  | 21  |
| VACMY | BBCH86 | 21 | 0.4  | ns  | 0.13  | -0.5 | 0.67 | 20  |
| VACMY | BBCH86 | 22 | -1.6 | ns  | -0.8  | -1.5 | 0.5  | 15  |
| VACMY | BBCH86 | 24 | -1.5 | ns  | -0.54 | -1   | 0.33 | 13  |
| VACMY | BBCH86 | 26 | -0.3 | ns  | -0.25 | -3   | 4    | 11  |
| VACMY | BBCH86 | 28 | -1.2 | ns  | -0.88 | -1.88| 0.78 | 11  |
| VACMY | BBCH86 | 30 | -3   | <0.01| -0.45 | -0.79| -0.25| 20  |
| VACMY | BBCH86 | 31 | -1.6 | ns  | -0.32 | -1   | 0.25 | 16  |
| VACMY | BBCH86 | 32 | 0.3  | ns  | 0.11  | -0.67| 1    | 18  |
| VACMY | BBCH86 | 34 | -1.8 | ns  | -0.4  | -0.75| 0.2  | 19  |
| VACMY | BBCH86 | 36 | -0.3 | ns  | -0.11 | -1   | 0.67 | 18  |
| VACMY | BBCH86 | 37 | 0    | ns  | 0     | -1   | 1    | 10  |
| VACMY | BBCH86 | 38 | 1.3  | ns  | 0.43  | -0.25| 1.17 | 20  |
| VACMY | BBCH86 | 39 | 0.3  | ns  | 0.06  | -0.44| 0.67 | 21  |
| VACMY | BBCH86 | 40 | -0.9 | ns  | -0.67 | -2.83| 2    | 11  |
| VACMY | BBCH86 | 41 | 1.7  | ns  | 0.88  | -0.15| 1.78 | 18  |
| VACMY BBCH86 | 42 | -0.1 | ns | 0 | -0.31 | 0.73 | 18 |
| VACMY BBCH87 | 1  | -0.9 | ns | -0.4 | -1 | 0.35 | 20 |
| VACMY BBCH87 | 2  | -1.6 | ns | -0.5 | -3.4 | 1.38 | 11 |
| VACMY BBCH87 | 3  | 0.1  | ns | 0.08 | -0.81 | 1 | 21 |
| VACMY BBCH87 | 5  | -1.2 | ns | -0.89 | -3.5 | 1.25 | 10 |
| VACMY BBCH87 | 6  | 0.3  | ns | 0.2 | -1 | 1.25 | 14 |
| VACMY BBCH87 | 8  | 1    | ns | 0.5 | -0.47 | 1.17 | 21 |
| VACMY BBCH87 | 10 | -1.3 | ns | -0.38 | -0.9 | 0.25 | 14 |
| VACMY BBCH87 | 14 | 0.9  | ns | 0.45 | -0.6 | 1.4 | 16 |
| VACMY BBCH87 | 18 | 0    | ns | 0 | -0.86 | 0.83 | 16 |
| VACMY BBCH87 | 19 | 0.2  | ns | 0.04 | -0.5 | 0.82 | 20 |
| VACMY BBCH87 | 21 | -0.5 | ns | -0.17 | -0.6 | 0.6 | 20 |
| VACMY BBCH87 | 22 | -0.8 | ns | -0.27 | -1.38 | 0.71 | 15 |
| VACMY BBCH87 | 24 | 1.5  | ns | 0.38 | -0.33 | 1.29 | 13 |
| VACMY BBCH87 | 26 | -1.3 | ns | -1.25 | -2.5 | 1.33 | 10 |
| VACMY BBCH87 | 28 | 0.9  | ns | 0.43 | -1 | 2.25 | 11 |
| VACMY BBCH87 | 30 | -0.6 | ns | -0.23 | -0.83 | 0.36 | 20 |
| VACMY BBCH87 | 31 | -0.5 | ns | -0.14 | -0.91 | 0.5 | 15 |
| VACMY BBCH87 | 32 | -0.5 | ns | -0.17 | -0.82 | 0.56 | 19 |
| VACMY BBCH87 | 34 | -1   | ns | -0.36 | -0.83 | 0.33 | 19 |
| VACMY BBCH87 | 36 | -1.4 | ns | -0.45 | -1.2 | 0.29 | 16 |
| VACMY BBCH87 | 37 | 0.2  | ns | 0.2 | -1.33 | 2 | 11 |
| VACMY BBCH87 | 38 | 0.1  | ns | 0 | -0.58 | 0.81 | 20 |
| VACMY BBCH87 | 39 | -0.5 | ns | -0.1 | -0.6 | 0.46 | 21 |
| VACMY BBCH87 | 41 | 0.3  | ns | 0.13 | -0.67 | 1.25 | 14 |
| VACMY BBCH87 | 42 | -1.5 | ns | -0.33 | -1 | 0.29 | 17 |
| VACVI BBCH65 | 1  | 0.9  | ns | 0.17 | -0.5 | 0.92 | 21 |
| VACVI BBCH65 | 2  | -1.6 | ns | -1 | -2.2 | 0.5 | 11 |
| VACVI BBCH65 | 3  | 0.9  | ns | 0.26 | -0.71 | 0.78 | 20 |
| VACVI BBCH65 | 5  | -0.6 | ns | -0.6 | -4 | 1.25 | 10 |
| VACVI BBCH65 | 6  | 0.1  | ns | 0.08 | -1.33 | 1.6 | 13 |
| VACVI BBCH65 | 8  | 0.6  | ns | 0.15 | -0.67 | 1 | 20 |
| VACVI BBCH65 | 10 | -2.3 | <0.05 | -0.67 | -1.58 | -0.15 | 17 |
| VACVI BBCH65 | 14 | 0.9  | ns | 0.28 | -0.53 | 0.89 | 19 |
| VACVI BBCH65 | 18 | -1.3 | ns | -0.6 | -1.38 | 0.4 | 18 |
| VACVI BBCH65 | 19 | -1.1 | ns | -0.37 | -1 | 0.33 | 21 |
| VACVI BBCH65 | 21 | -2.2 | <0.05 | -0.71 | -1.31 | -0.2 | 21 |
| VACVI BBCH65 | 22 | -1.5 | ns | -0.64 | -1.43 | 0.38 | 15 |
| VACVI BBCH65 | 24 | -1   | ns | -0.32 | -1.25 | 0.5 | 13 |
| VACVI BBCH65 | 26 | -1.1 | ns | -0.29 | -2.14 | 1 | 11 |
| VACVI BBCH65 | 28 | -0.6 | ns | -0.63 | -2.2 | 1 | 11 |
| VACVI BBCH65 | 30 | -2.2 | <0.05 | -0.49 | -0.88 | -0.15 | 20 |
| VACVI BBCH65 | 31 | -3.3 | <0.01 | -0.77 | -1.33 | -0.5 | 18 |
| VACVI BBCH65 | 32 | -0.9 | ns | -0.38 | -1.13 | 0.58 | 17 |
| VACVI BBCH65 | 34 | -1.1 | ns | -0.36 | -1.18 | 0.63 | 18 |
| VACVI BBCH65 | 36 | -2.8 | <0.01 | -0.8 | -1.33 | -0.27 | 17 |
| VACVI BBCH65 | 37 | 1.3  | ns | 0.5 | -0.56 | 1.4 | 11 |
| VACVI BBCH65 | 38 | -0.5 | ns | -0.17 | -0.67 | 0.44 | 20 |
| VACVI | BBCH65 | 39   | -1.3 | ns   | -0.34 | -0.71 | 0.24 | 21 |
|-------|--------|------|------|------|--------|--------|------|----|
| VACVI | BBCH65 | 40   | -0.7 | ns   | -0.4  | -2.5   | 1    | 11 |
| VACVI | BBCH65 | 41   | 0.9  | ns   | 0.31  | -0.4   | 0.9  | 18 |
| VACVI | BBCH65 | 42   | -2.4 | <0.05| -0.36 | -0.71  | -0.13| 18 |
| VACVI | BBCH86 | 1    | 1.6  | ns   | 1     | -0.33  | 2.25 | 19 |
| VACVI | BBCH86 | 2    | -0.5 | ns   | -0.5  | -2.17  | 2.14 | 11 |
| VACVI | BBCH86 | 3    | 1.7  | ns   | 0.93  | -0.33  | 2    | 19 |
| VACVI | BBCH86 | 5    | -0.1 | ns   | 0     | -2     | 2    | 10 |
| VACVI | BBCH86 | 6    | 2.4  | <0.05| 2.27  | 0.5    | 3.83 | 13 |
| VACVI | BBCH86 | 8    | 1.3  | ns   | 0.53  | -0.78  | 1.44 | 20 |
| VACVI | BBCH86 | 10   | 0.7  | ns   | 0.2   | -0.4   | 0.75 | 21 |
| VACVI | BBCH86 | 14   | 2.5  | <0.05| 1.18  | 0.33   | 1.93 | 17 |
| VACVI | BBCH86 | 18   | 2.1  | <0.05| 0.77  | 0.11   | 1.67 | 15 |
| VACVI | BBCH86 | 19   | 2.6  | <0.05| 0.97  | 0.29   | 1.67 | 21 |
| VACVI | BBCH86 | 21   | 0.7  | ns   | 0     | -0.4   | 0.75 | 21 |
| VACVI | BBCH86 | 22   | 0.5  | ns   | 0.46  | -0.5   | 1.2  | 14 |
| VACVI | BBCH86 | 24   | 0.2  | ns   | 0.24  | -1     | 2    | 13 |
| VACVI | BBCH86 | 28   | -0.2 | ns   | -0.33 | -1.6   | 3    | 10 |
| VACVI | BBCH86 | 30   | -0.9 | ns   | -0.33 | -1     | 0.46 | 20 |
| VACVI | BBCH86 | 31   | -0.3 | ns   | -0.13 | -1     | 0.8  | 15 |
| VACVI | BBCH86 | 32   | 1.3  | ns   | 0.46  | -0.38  | 1.46 | 18 |
| VACVI | BBCH86 | 34   | 0.3  | ns   | 0.14  | -0.8   | 1.31 | 18 |
| VACVI | BBCH86 | 36   | 0    | ns   | 0     | -1.14  | 1    | 14 |
| VACVI | BBCH86 | 37   | 0.4  | ns   | 0.5   | -1.22  | 2.33 | 11 |
| VACVI | BBCH86 | 38   | 0.8  | ns   | 0.2   | -0.38  | 0.71 | 20 |
| VACVI | BBCH86 | 39   | -0.1 | ns   | 0     | -0.67  | 0.8  | 21 |
| VACVI | BBCH86 | 41   | 1.5  | ns   | 0.5   | -0.25  | 1.5  | 18 |
| VACVI | BBCH86 | 42   | -1   | ns   | -0.29 | -1     | 0.5  | 15 |
| VACVI | BBCH87 | 1    | 1.2  | ns   | 0.47  | -0.5   | 1.25 | 20 |
| VACVI | BBCH87 | 3    | 1.1  | ns   | 0.33  | -0.5   | 1.27 | 20 |
| VACVI | BBCH87 | 5    | 1.5  | ns   | 1.25  | -0.71  | 2.33 | 10 |
| VACVI | BBCH87 | 6    | 2.7  | <0.05| 1.14  | 0.38   | 1.9  | 14 |
| VACVI | BBCH87 | 8    | -0.5 | ns   | -0.3  | -1.31  | 1    | 20 |
| VACVI | BBCH87 | 10   | 1.4  | ns   | 0.57  | -0.29  | 1.27 | 17 |
| VACVI | BBCH87 | 14   | -0.2 | ns   | -0.18 | -1.29  | 1    | 17 |
| VACVI | BBCH87 | 18   | 1.8  | ns   | 0.5   | -0.29  | 1.57 | 15 |
| VACVI | BBCH87 | 19   | 1.9  | ns   | 0.73  | -0.07  | 1.57 | 20 |
| VACVI | BBCH87 | 21   | 0.2  | ns   | 0.04  | -0.7   | 0.75 | 21 |
| VACVI | BBCH87 | 22   | 0.3  | ns   | 0.14  | -1     | 1.25 | 15 |
| VACVI | BBCH87 | 24   | 0.9  | ns   | 0.45  | -1     | 1.25 | 13 |
| VACVI | BBCH87 | 30   | 0.5  | ns   | 0.15  | -0.53  | 0.8  | 20 |
| VACVI | BBCH87 | 31   | -0.1 | ns   | -0.08 | -0.8   | 1    | 15 |
| VACVI | BBCH87 | 32   | -0.5 | ns   | -0.18 | -0.79  | 0.5  | 18 |
| VACVI | BBCH87 | 34   | -0.9 | ns   | -0.55 | -1.36  | 0.75 | 18 |
| VACVI | BBCH87 | 36   | 1.3  | ns   | 0.44  | -0.21  | 1.07 | 15 |
| VACVI | BBCH87 | 37   | 0.7  | ns   | 0.5   | -0.71  | 2    | 13 |
| VACVI | BBCH87 | 38   | 0.2  | ns   | 0     | -0.75  | 1    | 17 |
| VACVI | BBCH87 | 39   | 1.8  | ns   | 0.48  | -0.1   | 0.78 | 21 |
|    |     |   |  |  |  |  |
|----|-----|---|---|---|---|---|
| VACVI BBCH87 | 41 | 0.6 | ns | 0.22 | -1 | 1.6 | 15 |
| VACVI BBCH87 | 42 | 0.4 | ns | 0.08 | -0.74 | 1.18 | 15 |