**SI Table 1.** Variables and numerical values for calculating the PHI score.

| Variable                              | Farmer answer                  | Points |
|---------------------------------------|--------------------------------|--------|
| Overall                               | Yes                            | 3      |
|                                       | No                             | 0      |
| Hat                                   | Yes                            | 1      |
|                                       | No                             | 0      |
| Mask/Scarf                            | Yes                            | 1      |
|                                       | No                             | 0      |
| Boots                                 | Yes                            | 1      |
|                                       | No                             | 0      |
| Gloves                                | Yes                            | 1      |
|                                       | No                             | 0      |
| Glasses                               | Yes                            | 1      |
|                                       | No                             | 0      |
| Apron                                 | Yes                            | 1      |
|                                       | No                             | 0      |
| Pesticide information source          | Read labeled information/Agricultural engineer | 1    |
|                                       | Own experience/Pesticide seller | 0    |
| Amount of pesticide used in each application | Recommended amount | 1 |
|                                       | Doesn't measure at all         | 0      |
| Chew coca meanwhile spraying          | Yes                            | 0      |
|                                       | No                             | 1      |
| Change spraying clothes               | Yes                            | 1      |
|                                       | No                             | 0      |
| Storage spraying clothes              | Outside the house separately   | 1      |
|                                       | With all other clothes inside home | 0   |
| Wash clothes for spraying             | Separately                     | 1      |
|                                       | With all other clothes inside home | 0   |
| Storage pesticides and equipment      | Outside the house              | 1      |
|                                       | Inside the house               | 0      |

*A PHI score was calculated by summing points based on type of clothes used as PPE and handling and behavior during spraying pesticides. 16 points represented maximum protection and best behavior.*
SI Table 2. Crops cultivated in the three different communities.

| Total¹ | Com1 | Com2 | Com3 |
|--------|------|------|------|
| Coca   | 68%  | 71%  | 92%  | 89%  |
| Banana | 47%  | 66%  | 65%  | 58%  |
| Tomatoes | 39% | 62%  | 59%  | 49%  |
| Yucca  | 39%  | 61%  | 50%  | 43%  |
| Orange | 37%  | 49%  | 49%  | 36%  |
| Corn   | 34%  | 47%  | 39%  | 32%  |
| Rice   | 31%  | 45%  | 28%  | 20%  |
| Tangerine | 24% | 43%  | 23%  | 19%  |
| Celery | 22%  | 38%  | 22%  | 18%  |
| Fig    | 20%  | 38%  | 17%  | 15%  |
| Lettuce| 19%  | 37%  | 15%  | 14%  |
| Pineapple | 16% | 33%  | 14%  | 12%  |
| Cucumber | 16% | 30%  | 13%  | 12%  |
| Peach  | 15%  | 28%  | 10%  | 9%   |
| Green bean | 15% | 28%  | 10%  | 8%   |
| Cabbage| 15%  | 26%  | 7%   | 6%   |
| Chard  | 15%  | 19%  | 7%   | 6%   |
| Beetroot | 13% | 19%  | 6%   | 5%   |
| Prickly pear | 12% | 17%  | 6%   | 4%   |
| Parsley | 12% | 17%  | 6%   | 4%   |
| Green pods | 12% | 12%  | 5%   | 3%   |
| Apple  | 10%  | 11%  | 5%   | 2%   |
| Peppers | 10% | 9%   | 4%   | 1%   |
| Spinach | 10% | 8%   | 4%   | 1%   |
| Pear   | 9%   | 8%   | 4%   | 1%   |
| Lemon  | 9%   | 7%   | 4%   | 1%   |
| Grapes | 9%   | 7%   | 3%   | 1%   |
| Onion  | 9%   | 4%   | 3%   | 1%   |
| Lime   | 9%   | 4%   | 2%   | -    |
| Ice cream bean | 8% | 4%   | 2%   | -    |

¹Data shows the first 35 crops of over 100 named
**SI Table 3.** General gynecological information and spraying behavior for women participating in the study.

| Type of work | Total     | Com1 | Com2 | Com3 |
|--------------|-----------|------|------|------|
| **Miscarriages\(^1\)** |           |      |      |      |
| Total        | No 52%    | 53%  | 55%  | 46%  |
|              | Yes 48%   | 47%  | 45%  | 54%  |
| Farmer       | No 58%    | 54%  | 56%  | 39%  |
|              | Yes 42%   | 46%  | 44%  | 61%  |
| Not Farmer   | No 57%    | 50%  | 50%  | 57%  |
|              | Yes 43%   | 50%  | 50%  | 43%  |
| **Malformed babies and still births\(^1\)** |           |      |      |      |
| Total        | No 83%    | 90%  | 83%  | 78%  |
|              | Yes 17%   | 10%  | 17%  | 22%  |
| Farmer       | No 85%    | 89%  | 81%  | 78%  |
|              | Yes 15%   | 11%  | 19%  | 22%  |
| Not Farmer   | No 86%    | 0%   | 0%   | 79%  |
|              | Yes 14%   | 0%   | 0%   | 21%  |
| **Sprayed while pregnant\(^2\)** |           |      |      |      |
| Farmer       | No 64%    | 57%  | 44%  | 70%  |
|              | Yes 36%   | 43%  | 56%  | 30%  |
| **Sprayed while breast feeding\(^2\)** |           |      |      |      |
| Farmer       | No 69%    | 71%  | 56%  | 70%  |
|              | Yes 31%   | 29%  | 44%  | 30%  |

\(^1\) Information over the 114 women who had been pregnant.

\(^2\) Information over 94 women farmers.
**SI Table 4.** List of the 49 pesticides reported to be used by the study population and their frequency in total and by community.

| PESTICIDE                                                                 | Total | Com1 | Com2 | Com3 |
|--------------------------------------------------------------------------|-------|------|------|------|
| 2,4 D                                                                   | 4%    | 0%   | 1%   | 13%  |
| Abamectin B1a, B1b                                                       | 9%    | 16%  | 11%  | 1%   |
| Atrazine                                                                 | 0.4%  | 1%   | 0%   | 0%   |
| Azoxystrobin (strobins) + Cyproconazole (Azoles)                        | 4%    | 5%   | 2%   | 5%   |
| Carbendazim                                                              | 6%    | 0%   | 14%  | 3%   |
| Carbosulfan                                                              | 7%    | 0%   | 12%  | 8%   |
| Carboxin (carboximidine) + Thiram (dithiocarbamate)                      | 2%    | 0%   | 0%   | 6%   |
| Chlorfenapyr                                                            | 5%    | 15%  | 0%   | 1%   |
| Chlorothalonil (Tetrachloroisophthalonitrile)                           | 2%    | 0%   | 0%   | 6%   |
| Chlorpyrifos                                                            | 13%   | 27%  | 6%   | 7%   |
| Clethodim                                                                | 2%    | 0%   | 3%   | 3%   |
| Copper Sulphate                                                          | 0.7%  | 2%   | 0%   | 0%   |
| Cymoxanil (Unclassified)+ Mancozeb (Dithiocarbamate-ETU)                | 5%    | 3%   | 9%   | 2%   |
| Cypermethrin                                                             | 16%   | 26%  | 17%  | 6%   |
| Difenoconazole (azole) + Propiconazole (azole)                          | 6%    | 17%  | 0%   | 1%   |
| Emamectin benzoate                                                      | 0.4%  | 0%   | 0%   | 1%   |
| Endosulfan                                                              | 0.4%  | 0%   | 0%   | 1%   |
| Etoxazole                                                                | 0.4%  | 1%   | 0%   | 0%   |
| Fenitrothion                                                             | 0.7%  | 1%   | 1%   | 0%   |
| Fenvalerate (pyrethroid) + Phoxim (Organophosphorus)                     | 0.4%  | 0%   | 1%   | 0%   |
| Fipronil                                                                 | 3%    | 10%  | 0%   | 0%   |
| Flubendiamide                                                            | 4%    | 13%  | 0%   | 0%   |
| Fomesafen                                                                | 1%    | 0%   | 1%   | 3%   |
| Glufosinate-ammonium                                                    | 0.7%  | 0%   | 0%   | 2%   |
| Glyphosate                                                               | 43%   | 0%   | 57%  | 67%  |
| Imazaquin                                                                | 0.4%  | 0%   | 0%   | 1%   |
| Imidacloprid (Neonicotenoid) - Methomyl (N-Methyl Carbamate)             | 14%   | 1%   | 18%  | 21%  |
| Lambdacyhalothrin                                                        | 10%   | 9%   | 11%  | 11%  |
| Lufenuron                                                               | 0.4%  | 1%   | 0%   | 0%   |
| Mancozeb                                                                | 14%   | 16%  | 15%  | 10%  |
| Methamidophos                                                            | 65%   | 28%  | 91%  | 70%  |
| Methomyl                                                                | 12%   | 1%   | 11%  | 24%  |
| Monocrotophos                                                           | 0.4%  | 0%   | 0%   | 1%   |
| Myclobutanil                                                             | 1%    | 5%   | 0%   | 0%   |
| Paraquat                                                                | 52%   | 0%   | 71%  | 81%  |
|                       | 10% | 1%  | 4%  | 26% |
|-----------------------|-----|-----|-----|-----|
| Picloram + 2,4 D      |     |     |     |     |
| Profenofos            | 10% | 30% | 2%  | 0%  |
| Propanil              | 0.4%| 0%  | 1%  | 0%  |
| Propiconazole         | 5%  | 9%  | 0%  | 6%  |
| Propineb              | 2%  | 3%  | 0%  | 2%  |
| Quizalofop-P-ethyl    | 0.7%| 2%  | 0%  | 0%  |
| Spinosad              | 1%  | 5%  | 0%  | 0%  |
| Sulfur                | 9%  | 30% | 0%  | 0%  |
| Tebuconazole          | 3%  | 7%  | 0%  | 3%  |
| Thiodicarb            | 0.4%| 1%  | 0%  | 0%  |
| Thiophanate methyl    | 2%  | 2%  | 3%  | 0%  |
| Triclorfon            | 1%  | 0%  | 4%  | 0%  |
| Trifloxistrobin (Strobin) + Tebuconazole (triazole) | 0.4% | 1%  | 0%  | 0%  |
| Triisopropanolamine salt of 4-amino-3,5,6-trichloro-picolinic acid | 0.7% | 0%  | 1%  | 1%  |
ENCUESTA DE EXPOSICIÓN A PLAGUICIDAS
PROYECTO ASDI SAREC

Nombre: ................................................................. Código: .................................

Edad: ........................ Varón: ☐  Mujer: ☐

Nacido en: .................................................................

PARTE I.
1. Nivel educativo:
   Sin escolaridad ☐  Primaria ☐
   Secundaria ☐  Universidad/ Técnico ☐
2. Actividad laboral:
   Agricultor ☐  Estudiante ☐  Chofer ☐
   Profesor ☐  Empleado público ☐
   Otra: .................................................................
3. Usted consume verduras y frutas del lugar?
   Si / No (Respuesta No) Dónde compra los vegetales/frutas para su consumo?
4. Qué clase de vegetales y frutas crecen en esta región?
5. Cuántas veces al día come vegetales? ...........
6. Cuántas veces al día consume fruta? ...........
7. De donde proviene el agua que consume?
   Pozo ☐  Río ☐  Agua municipal ☐
   Otra: .................................................................
8. Alguna vez sintió un sabor diferente al comer sus vegetales?   Si / No
9. ¿Cuánto tiempo trabaja en agricultura?
   <1 año ☐  1 – 3 años ☐
   4 – 7 años ☐  >/= 8 años ☐
10. Usted trabaja como agricultor todo el año o es trabajador solo en ciertas temporadas?
    Todo el año ☐  Sesiones ☐
11. ¿Qué clase de cultivo(s) usted tiene?
12. ¿Usted utilizó plaguicidas durante los últimos tres años?  Si / No
13. ¿Qué plaguicida usted usa más frecuentemente?
    ........................................................................
    ........................................................................
    ........................................................................

PARTE II. SOLAMENTE AGRICULTORES.
14. Otra actividad aparte de ser agricultor?
    Estudiante ☐  Chofer ☐  Profesor ☐
    Empleado público ☐  Otra: ...........................
15. Cuánto tiempo trabaja en agricultura?
    <1 año ☐  1 – 3 años ☐
    4 – 7 años ☐  >/= 8 años ☐
16. ¿Usted trabaja como agricultor todo el año o es trabajador solo en ciertas temporadas?
    Todo el año ☐  Sesiones ☐
17. ¿Qué clase de cultivo(s) usted tiene?
    ........................................................................
    ........................................................................
    ........................................................................
18. ¿Usted utilizó plaguicidas durante los últimos tres años?  Si / No
19. ¿Qué cultivos usted rocía con plaguicidas?
    ........................................................................
    ........................................................................
    ........................................................................
20. ¿Quién fumiga los cultivos?
    Encuestado ☐  Otro trabajador ☐
    Pariente ☐
21. ¿Quién le ayuda a fumigar?
    Padre ☐  Madre ☐  Esposa ☐
    Esposo ☐  Hermano(a) ☐  Hijo(a) ☐
22. En promedio cuántas horas al día usted trabaja en su huerta?
    <2hrs ☐  2 – 4hrs ☐  >/= 5hrs ☐
23. ¿Cuántos días al mes usted rocía plaguicidas?
    1 day ☐  2-10 days ☐  11–20 days ☐
    >/= 20 days ☐
24. ¿Qué plaguicida usted usa más frecuentemente?
    ........................................................................
    ........................................................................
    ........................................................................
25. Qué plaguicidas mezcla con mayor frecuencia? ...........................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

26. Cuánto plaguicida usted aplica en promedio?
Cantidad recomendada □ No calcula □

27. Usted usa algún equipo de protección o ropa para rociar los plaguicidas?
NS/NR □ No □ Sombrero □ Máscara □
Overol □ Sandalias □ Botas □
Pañoleta □ Guantes de goma □
Lentes □ Mandil □

28. Usted se cambia sus ropas después de rociar? Si / No

29. Dónde guarda sus ropa para rociar?
Con el resto de la ropa □ Patio □
Con los animales □ En un lugar exclusivo □

30. Usted lava su ropa para rociar con el resto de la ropa de la familia? Si / No

31. De dónde usted obtiene información de cuánto plaguicida rociar?
Recomend del envase □ Un supervisor □
Experiencia □ Otro: ................................................

32. Dónde guarda los plaguicidas y el equipo para rociar?
Dentro la casa □ Patio □
Con los animales □ En un lugar exclusivo □

33. Cómo elimina los envases de los plaguicidas?
Quema □ Vota a la Basura □ Guarda □
Otro: ........................................................................

34. De dónde proviene el agua para rociar su huerta?
Agua municipal □
Agua de pozo □ Río □

35. Alguna vez se sintió enfermo después de rociar plaguicidas? Si / No
(Respuesta Si) Qué sintió?
Ardor en ojos □ Calambres □
Dolor de cabeza □ Mareos □
Náuseas □ Vómitos □ Fiebre □
Escalofríos □ Fatiga □
Dificultad respiratoria □ Sudoración □
Tos □ Dolor abdominal □

Ojos rojos □ Lagrimeo □
Visión borrosa □ Escozor □
Enrojecimiento de la piel y ardor □

36. Usted mastica hojas de coca mientras rocia plaguicidas? Si / No

PARTE III. EVALUACION MÉDICA
HISTORIA DE LA ENFERMEDAD ACTUAL:
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

ANTECEDENTES PATOLÓGICOS FAMILIARES:
........................................................................................................................................
........................................................................................................................................
Padres agricultores: Si / No
Abuelos agricultores: Si / No
Historia familiar de Cáncer: Si / No
Quién? .................................................................
Historia familiar de Diabetes: Si / No
Quién? .................................................................
Consumo de medicamentos cotidianamente:
Si / No Cuáles? / frecuencia.................................
Fuma: Si / No Cuántos al día: .........................
Al mes: ................
Bebe: Si / No Cuántos al día: .................
Al mes: .......... Qué bebida: ........................

EXAMEN FÍSICO GENERAL:
Peso: ........ Kg Talla: ........ m IMC
(peso/talla²) : ..................
P.Arterial: ........ mmHg FC: ........ lat/min
FR: ........ ciclos/min Glucosa (rapid test):....... 
..............................................................................................................................
..............................................................................................................................
Solo Mujeres:
Gestas: .... Partos: .... Cesáreas: ..... 
Pérdidas: ......
Alguna vez roció estando embarazada: Si / No
Algún bebe malformado/muerto: Si / No
Dio de lactar a su bebe después de rociar:
Si / No
PESTICIDE EXPOSURE SURVEY
SIDA PROJECT

Name: ...........................................................................................................   CODE: ..............................................................

Age: ......................... Man: ☐   Woman: ☐   Natural from: ..............................................................

PART I.
1. Educational attainment:
   No schooling ☐   Elementary School ☐   High school ☐   University/Technician ☐

2. Principal activity:
   Farmer ☐   Student ☐   Driver ☐   Teacher ☐   Public employee ☐
   Other: ...........................................

3. Do you eat vegetables and fruits from the local area?   Yes or No
   (If answer No) Where do you buy the vegetables for your consumption? ..................................................

4. What kind of vegetables/fruits grow up in this region? ............................................................................

5. How often do you eat vegetables per day? .............................................................................................

6. How often do you eat fruits per day? ......................................................................................................

7. Where does your drinking water come from?  Well ☐   River ☐   Public Water Service ☐
   Other: ..................................................................................

8. Have you ever tasted a different flavour in your vegetables?   Yes or No

9. What did you eat during the last 24h? ..................................................................................................

10. Do you smell a disgusting odour around your house when it’s time to spray pesticides? Yes or No

11. Do you have family in the agricultural activity?   Yes or No   Who? ..................................................

12. Have you ever sprayed with pesticides? Yes or No

13. Do you help to spray pesticides? Yes or No

PART II.   FARMERS ONLY
14. Another activity besides farmer:  Student ☐   Driver ☐   Teacher ☐   Public employee ☐ Other: ...........

15. Time of work on agriculture:  <1 year ☐   1 – 3 years ☐   4 – 7 years ☐   >/= 8 years ☐

16. Do you work in the agricultural activity all the year or only you are a seasonal worker?
   All year ☐   Seasonal Worker ☐

17. Which kind of crops do you have? .....................................................................................................

18. Did you use pesticides on your farm during the last three years?   Yes or No

19. Which crop do you spray with pesticides? ..........................................................................................

20. Who treated the plants/crops with pesticides?
   Him/Herself ☐   Other farm worker ☐   Another relative ☐

21. Who helps you to spread the pesticide?
   Father ☐   Mother ☐   Wife ☐   Husband ☐   Brother/Sister ☐   Son/Daughter ☐

22. In average: How many hours per day do you work on your crop?
   < 2hrs ☐   2 – 4hrs ☐   >/= 5hrs ☐

23. How many days per month did you spray pesticides?
   1 day ☐   2 - 10 days ☐   11 – 20 days ☐   >20 days ☐

24. Which pesticide(s) do you use most frequently? (brand or commercial name) ..................................

25. Which pesticides do you mix frequently? ..........................................................................................
26. How much pesticides do you apply on the average? Recommended amount □ Doesn’t measure □
27. Do you use any protective equipment or clothing when mixing pesticides?
   - No □ Hat □ Mask □ Overall □ Sandals □ Boots □ Chinstrap □ Rubber gloves □
   - Glasses □ Plastic apron □
28. Did you change your clothes after spraying?  Yes □ or No □
29. Where do you save your clothes for spraying?  With the rest of the clothes □  Outside the house □
   - With the animals □  In an exclusive place □
30. Do you wash your clothes with the rest of the family’s clothes? Yes □ or No □
31. Where do you find information about how to use pesticides?  Bottle instructions □
   - Agricultural Engineer □ Own experience □ Another: .................................................................
32. Where do you store the pesticides and the fumigation equipment?
   - Inside the house □  Outside the house □  With the animals □  Exclusive place □
33. How do you discard the empty bottles of pesticides?
   - Burning □  Garbage □ Keep/store them □  Another: .................................................................
34. What is the primary source of irrigation water for your farm?
   - Municipality water supply □  Well □  From the river □
35. Have you ever felt sick after sprayed pesticides? Yes □ or No □ (If is Yes) What did you feel?
   - Burning eyes □  Cramps □  Headache □  Dizziness □  Vomiting □  Breathing difficulty □
   - Chilli □  Fever □  Nausea □  Fainting □  Itching □  Sweating □  Cough □  Abdominal pain □
   - Red eyes □  Burning and redness of the skin □  Tearing □  Skin ulcers □  Blurred vision □
36. Do you chew coca leaves meanwhile you are spraying pesticides? Yes □ or No □

PART III. MEDICAL EVALUATION
Actual illness history: ...........................................................................................................................
Familiar illness history: ...........................................................................................................................
Parents are/were farmers: Yes □ or No □  Grandparents were farmers: Yes □ or No □
Familiar Cancer history: Yes □ or No □  Who?...........................................................................................
Familiar Diabetes history: Yes □ or No □  Who?...........................................................................................
Medicines consumption: Yes □ or No □  Witch medicines: .................................................................
Do you smoke? Yes □ or No □  # cigarettes per day: ......................  Per month: ......................
Do you drink alcohol? Yes □ or No □  # cups per day: ...............  Bottles per month: ......................
Name of the drink: ................................................................................................................................

PHYSICAL EXAMINATION:
Weight: .................kg  Height: ..............m  Body Mass Index (BMI): .............%  CF: ........ lat/min
Blood pressure: ............. mmHg  RF: ........ cycles/min  Rapid glucose test: ......................

ONLY WOMEN
Number of:  Gestations: ...........  Births: ...........  Caesarean: ...........  Miss births: ...........
Baby with malformation/stillbirth: .................................................................
Have you ever sprayed when you were pregnant? Yes □ or No □
Did you breastfeed your baby after spraying? Yes □ or No □