



**Five Year Follow-up Interview**  
**Pesticide Use Module**  
*Spouse*

**March 30, 2007**  
FILE NAME: SPOU1203.wpd

OMB # 0925-0406  
expires

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: PHS Reports Clearance Officer, Rm. 721-B, Humphrey Building, 200 Independence Ave., SW, Washington, D.C. 20201, ATTN: PRA; and to Office of Management and Budget, Paperwork Reduction Project (0925-0406), Washington, D.C. 20503.

This questionnaire is intended to be administered utilizing a CATI system. The following specific information will be available electronically prior to the start of the interview:

Spouse Name	
Spouse Gender	S2GENDER
Applicator Name	
Spouse Birth Date	S2ENRDOB / S2_SASDATE_ENRDOB
Spouse address; City, State, Zip Code	
Spouse Enrollment Year	S2ENRODATE
Current Date	S2_SASDATE_STARTDA
Current Time	

In addition, the CATI system will contain listings of common crops, animals, pesticides, pesticide application methods, etc., to facilitate the interviewer data entry.

In this document and when using the CATI system:

LARGE CASE PRINT = instructions to the interviewer; do not read these to the respondent

Shaded Areas =instructions to the programmer (will not appear on CATI screen); do not read to the respondent

Underline =portions of the question to be verbally stressed by interviewer; will appear as bold text on CATI

(Parenthesis) =clauses that the interviewer can choose to read or not to read, depending on the flow of the interview and the respondent's grasp of the question

< > = response edit check. A signal screen will appear: "Response is not in normal range. Are you sure this is correct?"

<< >> = response range. A signal screen will appear: "Input invalid, value not in range". Respondent must change response.

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WHEN CONDUCTING AN INTERVIEW WITHOUT USING THE CATI SYSTEM, FILL IN:

PARTID

Respondent ID # \_\_\_\_\_ Name of Interviewer \_\_\_\_\_

Date of Interview \_\_\_/\_\_\_/\_\_\_ Time Interview Started: \_\_\_\_\_ Time Interview Ended \_\_\_\_\_  
DD YY

Call Result (on CATI): 1. Begin Interview 2. Refuse 3. Deceased 4. Chronically ill- never contact again  
5. Language difficulties - never contact again 6. Unable to participate for other reasons 7. Maxed

I would like to start by verifying some general information we received from you when you completed your enrollment questionnaire / interview:

**[If Birth Date is not known, Go to Q1NB]**

1. Is your Birth date (fill in birthdate)?

S2SAMEBD

1. Yes [go to Q1A]                    \_\_\_ REF [go to SIGNAL SCREEN]  
0. No [go to SIGNAL SCREEN]        \_\_\_ DK [go to SIGNAL SCREEN]

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**SIGNAL SCREEN**

Am I speaking with (fill in spouse name)?

---IF YES: PROBE TO DETERMINE IF:

-----BIRTHDATE HAS BEEN MIS-READ OR NUMBERS HAVE BEEN TRANSPOSED

-----OR

-----THERE IS, OR EVER HAS BEEN, ANOTHER PERSON WITH THE SAME NAME LIVING AT THIS RESIDENCE.

-----IS THEIR BIRTHDATE (fill in birthdate)?

-----OR

-----THE PERSON YOU ARE SPEAKING WITH IS A SPOUSE OF A LICENSED PESTICIDE APPLICATOR,

-----OR WAS A SPOUSE IN 1994.

-----OR

-----THE PERSON REMEMBERS COMPLETING THE AHS QUESTIONNAIRE OR INTERVIEW IN (fill in enrollment year).

---IF CORRECT PARTY: SUPPRESS AND CONTINUE

---IF INCORRECT PARTY:

-----APOLOGIZE FOR CONFUSION AND HANG UP. CLOSE, PRESS HOME KEY, PRESS DELETE KEY, ENTER

-----SELECT SAVE FROM FORMS MENU.

---

1NB. What is your birth date \_\_\_\_/\_\_\_\_/\_\_\_\_?                    \_\_\_DK        \_\_\_REF

S2N\_BD

DD YYYY

<1910..1980> <<Datetype>>

**[Go to Q1b if pre-loaded gender is NOT FILLED IN]**

**1a. INTERVIEWER: WE CURRENTLY HAVE (FILL IN SPOUSE NAME) LISTED AS (FILL IN OF GENDER), IS THIS CORRECT?**

S2VERGEN

- 1. Yes **[Go to Q1c]**
- 2. Unsure
- 3. No

**1b. Are you male or female?**

S2ASKGEN ONLY ASK IF UNSURE

- 1. Male REF
- 2. Female DK

**1c. We'd like to verify that our records are correct. Are you currently married (or living as married) to (fill in applicator name)?**

S2MARRIE

- 1. Yes **[Go to Q2]** REF
- 0. No DK

**1d. Are you separated, divorced, re-married or widowed?**

S2MARITA DO NOT READ RESPONSE OPTIONS #4 or #5, BUT CODE AS SUCH IF VOLUNTEERED

- 1. Divorced or Separated REF
- 2. Re-married DK
- 3. Widowed
- 4. Living as married
- 5. Other

**1e. What year did you last live with (fill in applicator name)?**

S2LASTMA

|\_|\_|\_|\_|

DK  Ref

<<1900-2005>> <1993-current year>

**[Go to Q2NA if pre-loaded address is NOT FILLED IN]**

**2. Is your current address (fill in address)?**

S2SAMEAD

- 1. Yes **[If "state" in current address does not equal IA or NC, Go to Q3, ELSE GO TO Q4]**
- 2. No
- 3. New 911
- DK **[Go to Q5]**
- REF **[Go to Q5]**

- 2NA. What is your address? \_\_\_\_\_ \_\_DK \_\_REF ENTER A TEXT OF AT MOST 50 CHARACTERS  
 2NC. What city do you now live in? \_\_\_\_\_ \_\_DK \_\_REF ENTER A TEXT OF AT MOST 30 CHARACTERS  
 2NS. What state do you now live in? \_\_\_\_\_ \_\_DK \_\_REF ENTER A TEXT OF AT MOST 2 CHARACTERS  
 2NZ. What is your new zip code? \_\_\_\_\_ \_\_DK \_\_REF ENTER A TEXT OF AT MOST 10 CHARACTERS

[If Q2=new 911, Go to Q4]

[If "state" in Q2NS does not equal IA or NC, Go to Q3]

2a. Did you change your residence when you changed your address?

- S2CHANGE 1. Yes \_\_\_\_\_REF [Go to Q4]  
 0. No [Go to Q4] \_\_\_\_\_DK [Go to Q4]

3. What year did you move into your current residence?

S2MOVEIN

|\_|\_|\_|\_| \_\_\_\_\_DK \_\_\_\_\_REF  
 <<1900-2005>>

[If "state" in Q2NS = IA or NC, Go to Q4]

3a. What was the month that you left (Iowa/North Carolina)?

S2LEFTSM |\_| \_\_\_\_\_DK \_\_\_\_\_REF  
 <<01-12>>

3b. What was the year that you left (Iowa/North Carolina)?

S2LEFTSY |\_|\_|\_|\_| \_\_\_\_\_DK \_\_\_\_\_REF  
 <<1900-2005>> <1993-current year>

4. Is this residence a farm (i.e., is your house located on a farming operation that sold over \$1000 worth of crops, nursery, greenhouse, or animal products in a year)?

- S2LIVEFA 1. Yes \_\_\_\_\_REF  
 0. No \_\_\_\_\_DK

4a. Was your residence in (year of enrollment) a farm? (i.e. was your house located in a farming operation that sold over \$1000 worth of crops, nursery, greenhouse, or animal products in a year)?

- S2LIVEFB 1. Yes \_\_\_\_\_REF  
 0. No \_\_\_\_\_DK

Now I would like to ask you some questions concerning your primary source of drinking water.

5. Is a private well or spring your usual source of drinking water (at any time within the last 12 months)?

S2PRIVWE

1. Yes  Ref [Go to Q10]  
0. No [Go to Q10]  DK [Go to Q10]

6. How deep is your well (or spring)?

S2DEEPWE

1. <50 feet DK Ref  
2. 50-100 feet  
3. > 100 feet

Private wells (or springs) are tested for both bacteria and nitrates. The following questions are concerned only with nitrate levels.

7. Has your well (or spring) been tested for nitrates?

S2TESTWE

1. Yes Ref [Go to Q8]  
0. No [Go to Q8] DK [Go to Q8]

7a. Did the report indicate that the nitrate level was safe or unsafe for bottle-fed infants?

S2TESTSA

1. safe (less than or equal to 45 mg/liter) Ref  
2. unsafe for infants (greater than 45 mg/liter) DK

7b. What year was the well (or spring) tested?

S2TESTYR

||||| Ref  
<< <= current year >> <1968-2005> DK

8. How far is your drinking water well (or spring) from the nearest area where pesticides are mixed, handled or loaded?

S2WDFMIX

1. No pesticides mixed on farm  
2. < 50 feet  
3. 50-99 feet  
4. 100-199 feet  
5. 200-1/4 mile (1320 ft)  
6. > 1/4 mile  
DK REF

9. How far is your well (or spring) from the nearest area where pesticides are applied?

S2WDFAPL

1. No pesticides mixed on farm  
2. < 50 feet  
3. 50-99 feet  
4. 100-199 feet  
5. 200-1/4 mile (1320 ft)  
6. > 1/4 mile  
DK REF

10. Have you personally been actively engaged in any farming activities during any of the years since (year of enrollment)? (By farming we mean working on a farm that sold over \$1000 worth of crops, nursery, greenhouse or animal products in a year.)

S2ACFARM

1. Yes

0. No [Go to Q11intro and then to Q11c; as REFERENCE YEAR for applications, insert previous calendar year]

\_\_\_DK [Go to Q11intro and then to Q11c; as REFERENCE YEAR for applications, insert previous calendar year]

\_\_\_ Ref [Go to Q11intro and then to Q11c; as REFERENCE YEAR for applications, insert previous calendar year]

10A. Are you still actively engaged in any farming activities? (By farming, we mean working on a farm that sold over \$1000 worth of crops, nursery, greenhouse or animal products in a year.)

S2STFARM

1. Yes [Go to Q11a; as REFERENCE YEAR for applications: insert previous calendar year]

0. No

\_\_\_DK [Go to Q11a; as REFERENCE YEAR for applications: insert previous calendar year]

\_\_\_Ref [Go to Q11a; as REFERENCE YEAR for applications: insert previous calendar year]

10B. What was the last year you farmed?

S2LAFARM

|\_|\_|\_|\_|

\_\_\_DK

\_\_\_Ref

<< <= current year >>

[Insert this response as REFERENCE YEAR VARIABLE;  
If year is before enrollment date, GO TO SIGNAL SCREEN.  
If year=current year: insert previous calendar  
year as reference year]

[As REFERENCE YEAR for applications insert previous  
calendar year; GO TO Q11a;  
At DECISION BOX, treat as "NO" TO Q11c]

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### SIGNAL SCREEN

(YEAR ENTERED) CONFLICTS WITH SPOUSE'S ANSWER TO EARLIER QUESTION (HAVE YOU BEEN ACTIVELY ENGAGED IN FARMING SINCE (ENROLLMENT YEAR)).

IF (YEAR ENTERED) IS CORRECT: GO TO AND YOU WILL RETURN TO Q10.  
CHANGE Q10 TO NO

IF (YEAR ENTERED) IS INCORRECT: CLOSE AND ENTER  
CORRECT YEAR FOR LAST YEAR FARMED.

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The next questions will ask about your personal pesticide use. Some people do not consider ‘herbicides’ or weed killers to be pesticides. During this interview, when answering questions about pesticides, we would like for you to include your use of herbicides and weed killers, as well as any chemicals used to kill insects, fungus, molds, or rodents.

**11a. During (reference year), did you personally mix, load or apply pesticides for use on crops? Do not include garden produce unless sold for profit.**

S2MXAPCR      1. Yes                      \_\_\_ Ref  
 0. No                              \_\_\_ DK

**11b. During (reference year), did you personally use pesticides for animals or animal confinement areas?**

S2MXAPAN      1. Yes                      \_\_\_ Ref  
 0. No                              \_\_\_ DK

**11c. During (reference year), did you personally mix, load or apply pesticides for any (other) purpose? This would include applications for garden, lawn, nursery, fence rows and buildings. It does not include applications made to pets or in your home.**

S2MXAPNC      1. Yes                      \_\_\_ Ref  
 0. No                              \_\_\_ DK

**If Q11a and Q11b and Q11c = No, DK or Ref, go to Health Module and then to Q51.**

**11d. On average, how many days per year did you personally mix, load or apply pesticides?**

S2DMXAPL                      |\_\_|\_\_|\_\_| days                      \_\_ DK [Go to Health module and then Go to Decision Box]  
 <<1-365>> <1-80>                      \_\_ REF[Go to Health module and then Go to Decision Box]

**11e. On days when you worked with pesticides, how many hours per day did you mix, load or apply them?**

S2HMXAPL                      |\_\_|\_\_| hours                      \_\_ DK  
 <<1-24>> <1-8>                      \_\_ REF

**[Go to Health Module and then Go to Decision Box]**

***Decision Box:***  
**If 11a = NO, DK, REF, but 11b OR 11c = YES, Skip 12 - 18**  
**IF 11b=NO, DK, REF, but 11a OR 11c = YES, Skip 19-24**  
**If 11c=NO, DK, REF, but 11a OR 11b = YES, Skip 25 - 30**



Now I would like to ask you some questions about your pesticide exposure.

12. For what crops did you personally mix, load or apply pesticides during (reference year)?

MARK ALL THAT APPLY. PROBE FOR COMPLETE LIST. WHEN COMPLETE PRESS ENTER. ENTER AT MOST 10 VALUES.

- |  |  |
|--|--|
| 1. Apples [Go to Q13] S2_CR_APPLES                     | 18. Peaches [Go to Q13] S2_CR_PEACHES  |
| 2. Alfalfa [Go to Q13] S2_CR_ALFALFA                   | 19. Peanuts [Go to Q13] S2_CR_PEAUNTS  |
| 3. Barley [Go to Q13] S2_CR_BARLEY                     | 20. Peppers [Go to Q13] S2_CR_PEPPERS  |
| 4. Bermuda Grass [Go to Q13] S2_CR_BERMUDAGRASS        | 21. Potatoes [Go to Q13] S2_CR_POTATOES                                      |
| 5. Blueberries [Go to Q13] S2_CR_BLUEBERRIES           | 22. Rye [Go to Q13] S2_CR_RYE  |
| 6. Cabbage [Go to Q13] S2_CR_CABBAGE                   | 23. Snapbeans [Go to Q13] S2_CR_SNAPBEANS                                    |
| 7. Christmas Trees [Go to Q13]<br>S2_CR_CHRISTMASTREES | 24. Sorghum [Go to Q13] S2_CR_SORGHUM  |
| 8. Corn-field [Go to Q13] S2_CR_CORN_FIELD             | 25. Soybeans [Go to Q13] S2_CR_SOYBEANS                                      |
| 9. Corn-pop [Go to Q13] S2_CR_CORN_POP                 | 26. Strawberries [Go to Q13] S2_CR_STRAWBERRIES                              |
| 10. Corn-seed [Go to Q13] S2_CR_CORN_SEED              | 27. Sweet Potatoes [Go to Q13] S2_CR_SWEETPOTATOES                           |
| 11. Corn-sweet [Go to Q13] S2_CR_CORN_SWEET            | 28. Tomatoes [Go to Q13] S2_CR_TOMATOES                                      |
| 12. Cotton [Go to Q13] S2_CR_COTTON                    | 29. Tobacco (greenhouse included)[Go to Q13] S2_CR_TOBACCO                   |
| 13. Cucumbers [Go to Q13] S2_CR_CUCUMBERS              | 30. Wheat [Go to Q13] S2_CR_WHEAT  |
| 14. Grapes [Go to Q13] S2_CR_GRAPES                    | 31. Nursery Crops (including ornamentals)[Go to Q12a]<br>S2_CR_NURSERY CROPS |
| 15. Hay or forage [Go to Q13] S2_CR_HAY                | 32. Other[Go to Q12b] S2_CR_OTHER  |
| 16. Melons [Go to Q13] S2_CR_MELONS                    | 33. None [Go to Q19] S2_CR_NONE  |
| 17. Oats [Go to Q13] S2_CR_OATS                        |  |

\_\_\_DK [Go to Q19]

\_\_\_REF [Go to Q19]

12a. (What was the Nursery Crops (including ornamentals)?) \_\_\_\_\_

SPCONCSP

\_\_\_DK \_\_\_REF[Go to Q13]

12b. (What was the other crop?) \_\_\_\_\_ \_\_\_DK \_\_\_REF

SPCOSPEC

[For the following questions, number of screens will equal number of crops up to maximum of 10: (crop) is an automatic fill-in]

**[ASK Q13 FOR EACH CROP.]**

13. How many acres of **(crop)** were grown on the farm you worked on during **(reference year)**?

|\_|\_|\_|\_|  
<<1-9997>>

\_\_DK[Go to next crop]

\_\_REF[Go to next crop]

- |  |   |
|--|---|
| 1. Apples <a href="#">S2_CR_APPLES_ACRES</a>                     | 18. Peaches <a href="#">S2_CR_PEACHES_ACRES</a>                       |
| 2. Alfalfa <a href="#">S2_CR_ALFALFA_ACRES</a>                   | 19. Peanuts <a href="#">S2_CR_PEAUNTS_ACRES</a>                       |
| 3. Barley <a href="#">S2_CR_BARLEY_ACRES</a>                     | 20. Peppers <a href="#">S2_CR_PEPPERS_ACRES</a>                       |
| 4. Bermuda Grass <a href="#">S2_CR_BERMUDAGRASS_ACRES</a>        | 21. Potatoes <a href="#">S2_CR_POTATOES_ACRES</a>                     |
| 5. Blueberries <a href="#">S2_CR_BLUEBERRIES_ACRES</a>           | 22. Rye <a href="#">S2_CR_RYE_ACRES</a>                               |
| 6. Cabbage <a href="#">S2_CR_CABBAGE_ACRES</a>                   | 23. Snapbeans <a href="#">S2_CR_SNAPBEANS_ACRES</a>                   |
| 7. Christmas Trees<br><a href="#">S2_CR_CHRISTMASTREES_ACRES</a> | 24. Sorghum <a href="#">S2_CR_SORGHUM_ACRES</a>                       |
| 8. Corn-field <a href="#">S2_CR_CORN_FIELD_ACRES</a>             | 25. Soybeans <a href="#">S2_CR_SOYBEANS_ACRES</a>                     |
| 9. Corn-pop <a href="#">S2_CR_CORN_POP_ACRES</a>                 | 26. Strawberries <a href="#">S2_CR_STRAWBERRIES_ACRES</a>             |
| 10. Corn-seed <a href="#">S2_CR_CORN_SEED_ACRES</a>              | 27. Sweet Potatoes <a href="#">S2_CR_SWEETPOTATOES_ACRES</a>          |
| 11. Corn-sweet <a href="#">S2_CR_CORN_SWEET_ACRES</a>            | 28. Tomatoes <a href="#">S2_CR_TOMATOES_ACRES</a>                     |
| 12. Cotton <a href="#">S2_CR_COTTON_ACRES</a>                    | 29. Tobacco (greenhouse included) <a href="#">S2_CR_TOBACCO_ACRES</a> |
| 13. Cucumbers <a href="#">S2_CR_CUCUMBERS_ACRES</a>              | 30. Wheat <a href="#">S2_CR_WHEAT_ACRES</a>                           |
| 14. Grapes <a href="#">S2_CR_GRAPES_ACRES</a>                    | 31. Nursery Crops (including ornamentals)                             |
| 15. Hay or forage <a href="#">S2_CR_HAY_ACRES</a>                |   |
| 16. Melons <a href="#">S2_CR_MELONS_ACRES</a>                    | 32. Other <a href="#">S2_CR_OTHER_ACRES</a>                           |
| 17. Oats <a href="#">S2_CR_OATS_ACRES</a>                        | <a href="#">S2_CR_NURSERYCROPS_ACRES</a>                              |

**[Ask Q14 FOR EACH CROP. Then GO to Q15]**

**14. What insecticides, fungicides, fumigants, or herbicides (weed killers) did you personally use on (crop) during (reference year)?**

**S2\_PESTICIDE\_VERBATIM<sup>1</sup> USE THIS STATEMENT FIRST TIME THROUGH. FOR EACH SUBSEQUENT CROP, SUBSTITUTE 'PESTICIDES' FOR INSECTICIDES...KILLERS'**

TYPE PESTICIDE NAME, THEN CHOOSE FROM LIST BY ENTERING. IF NO PESTICIDES USED, TYPE AND ENTER NONE. ENTER AT MOST 15 PESTICIDES. AT LAST PESTICIDE, TYPE AND ENTER DONE.

**FOR EACH CROP:**

_____	___Ref	___None	___Other	___Done
<b>[Insert pesticide list; pesticide can be listed ONCE PER CROP]</b>	<b>[Go to next (crop)]</b>	<b>[Go to next (crop)]</b>	<b>[Go to Q14a]</b>	<b>[Go to next (crop)]</b>
<b>[Atrazine and 2,4-d Go to Signal Screen]</b>	<b>[At last crop, Go to Q15]</b>	<b>[At last crop, Go to Q15]</b>		<b>[At last crop, Go to Q15]</b>

PROBE FOR A COMPLETE LIST.

IF ONLY INSECTICIDES ARE REPORTED, PROBE FOR USE OF OTHER TYPES OF PESTICIDES.

(Are there any other (insecticides, herbicides, fungicides, fumigants) that you used on (crop) during (Reference Year)?)

**14a. What was this pesticide? \_\_\_\_\_**  
**S2\_PESTICIDE\_VERBATIM<sup>1</sup>**

**[Ask next pesticide or probe]**

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<sup>1</sup> In Spouse Supplemental Pesticide File.

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**SIGNAL SCREEN**

Did you use (pesticide name) alone or was it part of a manufacturer's mixture?

IF ALONE: SUPPRESS AND CONTINUE.

IF MANUFACTURERS MIXTURE: Could you tell me the brand name?

----IF YES: CLOSE AND REPLACE (pesticide name) WITH BRAND NAME.

----IF NO: Could you tell me what chemicals it was mixed with?

-----IF YES: CLOSE AND REPLACE (pesticide name) WITH CHEMICAL NAME,

-----THEN USE INGREDTRI TO SEARCH FOR BRAND NAME.

-----IF NO: SUPPRESS AND CONTINUE AS IF (pesticide name) WAS USED

-----ALONE.

IF PERSONALLY MIXED: SUPPRESS AND CONTINUE, ENTERING OTHER CHEMICALS IN MIXTURE AS SEPARATE PESTICIDES FROM LIST.

---

**[Ask Q15 and Q16 FOR EACH PESTICIDE for each crop]**

**15. During (reference year), how many days did you personally mix, load or apply (pesticide) to (crop)?**

S2\_DAYS<sup>1</sup>

|\_|\_|\_|\_|

\_\_\_DK

\_\_\_Ref

<<1-365>> <1-80>

[Go to Next Pesticide; At Last Pesticide Go to Q17]

**16. On average, how many hours per day did you personally, mix load or apply (pesticide)?**

S2\_HOURS<sup>1</sup>

|\_|\_|

\_\_\_DK

\_\_\_Ref

<<1-24>> <1-8>

[All responses Go to Next Pesticide. At Last Pesticide Go to Next Crop. At Last Crop Go To Q17]

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<sup>1</sup> In Spouse Supplemental Pesticide File.

[Ask Q17 and Q18 for the first 4 pesticides for each crop that are applied for the most days as reported in Q15. Repeat the following Intro Statement only when beginning next crop. (Crop) is an automatic fill in.] <sup>2</sup>

**[INTRO FOR Q17 READ FIRST TIME THROUGH FOR EACH CROP]**

Now I am going to ask you some additional questions about those pesticides you used the most on (crop).

**17. During (reference year), when applied to (crop), was the (pesticide) liquid, dry, or gas?**

S2CPC<sup>1</sup>

1. Liquid, including pastes and gels
2. Dry, including granular Ref
3. Gas DK

**17a. (During (reference year)), when you used (pesticide) for (crop), did you usually fill (or load) the application equipment yourself**

S2CPD<sup>1</sup>

1. Yes [If Q17=2(DRY), go to Q17c][Else Go to Q17b] Ref [Go to next pesticide for this crop]
2. No [Go to Q18] DK [Go to Q18]

**17b. (During (reference year)), when filling the application equipment with (pesticide), did you:**

S2CPE<sup>1</sup>

READ RESPONSES

1. pour or transfer it directly into the application tank yourself (includes mini-bulk and mixing with seed)? [Go to Q18]
2. use a closed system (dissolvable packets or pumped directly from a storage tank into application equipment fill hose)? [Go to Q18]
3. use something else?  
DK [Go to Q18] Ref [Go to Q18]

**17b1. What was this?**

DK Ref [All responses Go to Q18]

S2CPF<sup>1</sup>

**17c. (During (reference year)), when filling the application equipment with (pesticide), did you:**

S2CPG<sup>1</sup>

READ RESPONSES

1. personally open the bags or containers and pour into the application equipment (includes mixing with seed)? [Go to Q18]
2. use a closed system (includes Lock and Load, Smart Box systems)? [Go to Q18]
3. use something else?  
DK [Go to Q18] Ref [Go to Q18]

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<sup>1</sup>In Spouse Supplemental Pesticide File.

<sup>2</sup> If there were day counts identical to that for the fourth most frequently applied pesticide for the crop, all pesticides with that day count were included.

17c1. What was this? \_\_\_\_\_ \_\_DK \_\_Ref  
S2CPH<sup>1</sup>

18. (During (reference year)), did you personally apply the (pesticide) to the (crop)?  
S2CPI<sup>1</sup>

- 1. Yes
- 2. No [If Q17a is no, DK or Ref, Go to next pesticide for this crop]
- \_\_\_DK [If Q17a is no, DK or Ref, Go to next pesticide for this crop]
- \_\_\_Ref [If Q17a is no, DK or Ref, Go to next pesticide for this crop]

18a. (During (reference year)), did you use a tractor or other farm vehicle to apply the (pesticide) to (crop)?  
S2CPI<sup>1</sup>

- 1. Yes [If Q17=1(liquid), Go to Q18b; If Q17=2(dry),Go to Q18c; If Q17=3(gas),Go to Q18d; If Q17=Dk or Ref, Go to Q18e]
- 0. No [Go to Q18e]
- \_\_\_DK[Go to Q18e]
- \_\_\_REF[Go to next pesticide]

18b. (During (reference year)),when you applied (pesticide) to your (crop) did you usually use a:  
S2CPL<sup>1</sup> READ RESPONSES

- 1. broadcast spray (spread over the entire field) [Go to next pesticide; at last pesticide, Go to Q19]
- 2. banded or directed spray (sprayed it over the rows; includes drip, in furrow, ridged up, T-band, and post emergent directed spraying) [Go to next pesticide; at last pesticide, Go to Q19]
- 3. hand held sprayer ( gun, wand, handboom, or pump) [Go to Q18b1]
- 4. mist blower or fogger [Go to next pesticide; at last pesticide, Go to Q19]
- 5. or something else.. [Go to Q18b2]
- \_\_\_DK [Go to next pesticide; at last pesticide, Go to Q19]
- \_\_\_Ref [Go to next pesticide; at last pesticide, Go to Q19]

18b1. Was this..

S2CPM<sup>1</sup> READ RESPONSES

- 1. low pressure
- 2. or high pressure
- \_\_\_DK \_\_\_Ref
- [All responses Go to next pesticide; at last pesticide, Go to Q19]

---

<sup>1</sup> In Spouse Supplemental Pesticide File.

**18b2. What was this?** \_\_\_\_\_ DK Ref  
S2CPN<sup>1</sup> [All responses Go to next pesticide; at last pesticide, Go to Q19]

**18c. (During (reference year)), when you applied (pesticide) to (crop) was it:**

S2CPO<sup>1</sup> READ RESPONSES

1. broadcast (spread over the entire field; includes fertilizer spreader, buggy or hopper, broadcast sprayer, or duster.)

[Go to next pesticide; at last pesticide, Go to Q19]

2. banded (sprayed over the rows; includes in furrow, ridged up, planter box, or band sprayer)

[Go to next pesticide; at last pesticide, Go to Q19]

3. or something else..

DK [Go to next pesticide; at last pesticide, Go to Q19]

Ref [Go to next pesticide; at last pesticide, Go to Q19]

**18c1. What was this?** \_\_\_\_\_ DK Ref  
S2CPP<sup>1</sup> [All responses Go to next pesticide; at last pesticide, Go to Q19]

**18d. (During (reference year)), did you usually inject the (pesticide) into the soil, or use some other method of application?**

S2CPQ<sup>1</sup> 1. injected or drilled (includes row fumigation) [Go to next pesticide; at last pesticide, Go to Q19]

2. something else...

DK [Go to next pesticide; at last pesticide, Go to Q19]

Ref [Go to next pesticide; at last pesticide, Go to Q19]

**18d1. What was this?** \_\_\_\_\_ DK Ref  
S2CPR<sup>1</sup> [All responses Go to next pesticide; at last pesticide, Go to Q19]

---

<sup>1</sup> In Spouse Supplemental Pesticide File.

18e. (During (reference year)), which application method did you usually use?

S2CPS<sup>1</sup> READ RESPONSES. CHOOSE ONE.

1. hand-held sprayer (gun, wand, hand boom or pump)
2. backpack sprayer
3. band sprayer
4. gas canister
5. mist blower or fogger DK Ref
6. pre-treated seed
7. personally applied to seed [Responses #1-9, DK and Ref, Go to next pesticide; at last pesticide, Go to Q19]
8. greenhouse sprayer
9. dusting
10. something else...

18e1. What was this? DK Ref

S2CPT<sup>1</sup> [All responses Go to next pesticide; at last pesticide, Go to Q19]

19. What types of farm animals did you (or your spouse) have on your farming operation during (reference year)?

MARK ALL THAT APPLY. PROBE FOR COMPLETE LIST. WHEN COMPLETE, PRESS ENTER. ENTER AT MOST 6 VALUES.

1. <u>Non</u> -dairy cattle (beef, feeder, stock) S2_AN_CATTLE_NONDAIRY	8. Llamas S2_AN_LLAMAS
2. Dairy cattle S2_AN_CATTLE_DAIRY	9. Emu S2_AN_EMU
3. Hogs/swine S2_AN_HOGS	10. Goats S2_AN_GOATS
4. Poultry S2_AN_POULTRY	11. Buffalo S2_AN_BUFFALO
5. Sheep S2_AN_SHEEP	12. Beefalo S2_AN_BEEFALO
6. Horses S2_AN_HORSES	13. Something else S2_AN_OTHER
7. Ostriches S2_AN_OSTRICHES	14. None [Go to Q25] S2_AN_NONE

[Response choices 1-12, Go to Q19a]

DK [Go to Q25]  
Ref [Go to Q25]

19a. What was the other farm animal? DK Ref

S2ASPEC<sup>1</sup>

<sup>1</sup> In Spouse Supplemental Pesticide File.



[ASK Q20 FOR EACH ANIMAL, (animal) is an automatic fill in]

20. How many (animal) did you have during (reference year)?

|\_|\_|\_|\_|  
<<1-9,999,997>>

\_\_\_DK  
\_\_\_REF

1. <u>Non-dairy</u> cattle (beef, feeder, stock) S2_AN_CATTLE_NONDAIRY_NUMBER	8. Llamas S2_AN_LLAMAS_NUMBER
2. Dairy cattle S2_AN_CATTLE_DAIRY_NUMBER	9. Emu S2_AN_EMU_NUMBER
3. Hogs/swine S2_AN_HOGS_NUMBER	10. Goats S2_AN_GOATS_NUMBER
4. Poultry S2_AN_POULTRY_NUMBER	11. Buffalo S2_AN_BUFFALO_NUMBER
5. Sheep S2_AN_SHEEP_NUMBER	12. Beefalo S2_AN_BEEFALO_NUMBER
6. Horses S2_AN_HORSES_NUMBER	13. Something else S2_AN_OTHER_NUMBER
7. Ostriches S2_AN_OSTRICHES_NUMBER	

[ALL RESPONSES Go to next animal]

21. During (reference year), which type of animal (or confinement area) received the most pesticide applications from you?

S2AIMOST CHOOSE ONE FROM LIST

[List=Response Categories=animals reported in Q19]

[Response to Q21= (animal) automatic fill in for Q21a-Q24]

\_\_\_ DK [Go to Q25if Q11c = yes; else Go to Q31]

[ASK FOR ANIMAL SPECIFIED IN Q21]

21a. What pesticides did you personally use on (animal), during (reference year)?

S2\_PESTICIDE\_VERBATIM<sup>1</sup> TYPE PESTICIDE NAME, THEN CHOOSE FROM LIST BY ENTERING. IF NO PESTICIDES USED, TYPE AND ENTER NONE. ENTER AT MOST 6 PESTICIDES. AT LAST PESTICIDE, TYPE AND ENTER DONE.

\_\_\_\_\_ \_\_\_Ref \_\_\_\_\_None \_\_\_Other \_\_\_Done  
[Insert pesticide list; [Go to Q25] [Go to Q25] [Go to Q21a1] [Go to Q22]

pesticide can be  
listed ONCE PER  
ANIMAL]

PROBE FOR COMPLETE LIST. ENTER AT MOST 6 PESTICIDES. AT LAST PESTICIDE, TYPE AND ENTER DONE.

Are there any other pesticides that you personally used on (animal) during (reference year)?

<sup>1</sup> In Spouse Supplemental Pesticide File.

21a1. What was this pesticide? \_\_\_\_\_  
S2\_PESTICIDE\_VERBATIM<sup>1</sup>

[Ask next pesticide or probe]

[Ask Q22 - Q24 FOR EACH PESTICIDE for (animal) specified in Q21. (Animal) is an automatic fill in.]

22. How was the (pesticide) normally applied?

S2APAPP<sup>1</sup> READ RESPONSES. CHOOSE ONE.

1. sprayer or duster (backpack sprayer, air sprayer) [Go to Q22b]
  2. dips, pour-ons (also hand wipes, oral paste, or boluses) [Go to Q23]
  3. injection [Go to Q23]
  4. animal rubbing device, ear tags, or feed and water additives (also dust bags, rope wicks) [Go to Q23]
  5. something else..
- \_\_\_DK [Go to Q23]  
\_\_\_Ref [Go to Q23]

22a. What was this? \_\_\_\_\_

\_\_\_DK \_\_\_Ref

S2APAO<sup>1</sup> [All responses Go to Q23]

22b. Was this application done in an enclosed area?

S2APAE<sup>1</sup> 1. Yes \_\_\_Ref  
0. No \_\_\_DK

23. During (reference year), how many days did you personally use (pesticide) for (animal)? |\_\_|\_\_|\_\_| \_\_\_DK \_\_\_Ref  
S2\_DAYS<sup>1</sup> <<1-365>> <1-80>

24. On average, how many hours per day did you personally use (pesticide)? |\_\_|\_\_| \_\_\_DK \_\_\_Ref  
S2\_HOURS<sup>1</sup> <1-8>

<<1-24>>

---

<sup>1</sup> In Spouse Supplemental Pesticide File.

25. We'd like to ask you about (other) pesticide applications you may have made during (reference year).

(During (reference year)), did you personally use pesticides for:

READ RESPONSES AND WAIT FOR YES/NO REPLY. MARK ALL YES RESPONSE. WHEN COMPLETE PRESS ENTER.

1. Weed or brush control for pastures, fence rows & other farm areas [Go to Q25b] S2\_NC\_WEEDCONTROL<sup>1</sup>
  2. Stored grains or grain bin applications [Go to Q25b] S2\_NC\_GRAINBIN<sup>1</sup>
  3. Building applications [Go to Q25b] S2\_NC\_BUILDINGS<sup>1</sup>
  4. Nursery & garden applications (including shrubs, flowers & ornamentals) [Go to Q25b] S2\_NC\_GARDENS<sup>1</sup>
  5. Trees, including fruit trees [Go to Q25b] S2\_NC\_TREES<sup>1</sup>
  6. Lawn and turf applications [Go to Q25b] S2\_NC\_LAWNS<sup>1</sup>
  7. Rodent control [Go to Q25b] S2\_NC\_RODENTCONTROL<sup>1</sup>
  8. Other, specify S2\_NC\_OTHER<sup>1</sup>
- \_\_\_DK [Go to Q31]  
\_\_\_Ref [Go to Q31]

25a. What was this? \_\_\_\_\_ \_\_\_DK \_\_\_Ref  
S2NCAO<sup>1</sup>

[NUMBER OF SCREENS/questions=NUMBER OF NON-CROP APPLICATIONS/ AUTOMATIC FILL IN OF (non-crop application)]  
[ASK Q25b FOR EACH NON-CROP APPLICATION]

25b. What pesticides were typically used for (non-crop application) (during (reference year))?

S2\_PESTICIDE\_VERBATIM<sup>1</sup> TYPE PESTICIDE NAME, THEN CHOOSE FROM LIST BY ENTERING.

IF NO PESTICIDES USED, TYPE AND ENTER NONE.

FOR EACH NON-CROP:

_____	___Ref	___Other	___None	___Done
[Insert pesticide list; pesticide can be listed ONCE PER NON-CROP] [Atrazine and 2,4-d: Go to Signal Screen]	[Go to next (non-crop)] [After last non-crop GO to Q26] [If DK, Ref for all non-crop applications, Go to Q31]	[Go to Q25c1]	[Go to next (non-crop)] [After last non-crop GO to Q26]	

PROBE FOR A COMPLETE LIST. ENTER AT MOST 4 PESTICIDES. AT LAST ENTRY, TYPE AND ENTER DONE.

Are there any other pesticides that you used on (non-crop) (during (reference year))?

---

<sup>1</sup> In Spouse Supplemental Pesticide File.

25b1. What was this pesticide? \_\_\_\_\_  
S2\_PESTICIDE\_VERBATIM<sup>1</sup>

\_\_\_DK

\_\_\_Ref

[Ask next pesticide or probe]

---

**SIGNAL SCREEN**

Did you use (pesticide name) alone or was it part of a manufacturer's mixture?

IF ALONE: SUPPRESS AND CONTINUE.

IF MANUFACTURERS MIXTURE: Could you tell me the brand name?

-----IF YES: CLOSE AND REPLACE (pesticide name) WITH BRAND NAME.

-----IF NO: Could you tell me what chemicals it was mixed with?

-----IF YES: CLOSE AND REPLACE (pesticide name) WITH CHEMICAL NAME,

-----THEN USE INGREDTRI TO SEARCH FOR BRAND NAME.

-----IF NO: SUPPRESS AND CONTINUE AS IF (pesticide name) WAS USED

-----ALONE.

IF PERSONALLY MIXED: SUPPRESS AND CONTINUE, ENTERING OTHER CHEMICALS IN MIXTURE AS SEPARATE PESTICIDES FROM LIST.

---

[Number or screens (questions) will equal number of pesticides/ Automatic fill-in of (pesticide)]

[Ask Q26-Q30 for each pesticide for each non-crop application]

26. During (reference year), when using (pesticide) for (non-crop application), did you personally mix or fill (load) application equipment?

S2NCMIX<sup>1</sup>                      1. Yes                      \_\_\_ Ref  
   0. No                      \_\_\_ DK

27. (During (reference year)), did you personally apply (pesticide) for (non-crop application)?

S2NCAPP<sup>1</sup>                      1. Yes                      \_\_\_ Ref  
   0. No [Skip to Q29]                      \_\_\_ DK

[If Q26 and Q27 = 'No', 'DK', or 'Ref', Go to next pesticide. If last pesticide, go to Q31]

28. (During (reference year)), what application method(s) did you use to apply the (pesticide) for (non-crop application)?

S2NCMT<sup>1</sup> READ FIRST 7 RESPONSES FOR FIRST PESTICIDE. THEN READ WHEN NECESSARY. CHOOSE ONE RESPONSE.

- 1. Hand-held sprayer (gun, wand, boom, or pump) [Go to Q29]
  - 2. Broadcast from farm vehicle (NOT hand-held) [Go to Q29]
  - 3. Backpack sprayer [Go to Q29]
  - 4. Mist blower or fogger [Go to Q29]
  - 5. Airblast [Go to Q29]
  - 6. Banded spray [Go to Q29]
  - 7. Gas canister [Go to Q29]
  - 8. Dried pellets [Go to Q29]
  - 9. Sealed packets [Go to Q29]
  - 10. Dusting (including powders) [Go to Q29]
  - 11. Spray bottle [Go to Q29]
  - 12. Something else....
- \_\_\_DK [Go to Q29]  
\_\_\_Ref [Go to Q29]

28a. What was this? \_\_\_\_\_ \_\_\_DK \_\_\_Ref

S2NCMO<sup>1</sup>

<sup>1</sup> In Spouse Supplemental Pesticide File.

29. During (reference year), how many days per year did you personally mix, load or apply (pesticide) for (non-crop application)?  
S2\_DAYS<sup>1</sup>

\_\_\_\_|\_\_\_\_|\_\_\_\_|      \_\_\_DK      \_\_\_Ref  
<<1-365>> <1-80>    [Go to Q31]    [Go to Q31]

30. On average, how many hours per day did you personally mix, load or apply (pesticide) for (non-crop application)?  
S2\_HOURS<sup>1</sup>

\_\_\_\_|\_\_\_\_|      \_\_\_DK      \_\_\_Ref  
<<1-24>> <1-8>

31. Was (reference year), a typical year for you as far as number of pesticides you used and the amount you used?  
S2TYPICA

1. Yes      \_\_\_ Ref  
0. No      \_\_\_ DK

[If Q17a=No, DK or Ref, for all four pesticides for all crops, AND Q26=No, DK or Ref for all non-crops, Go to Q33]

32. During (reference year), when you mixed or loaded pesticides did you normally wear any of the following special clothing or protective equipment?

READ RESPONSES. MARK ALL THAT APPLY. WHEN COMPLETE PRESS ENTER.

1. Chemically resistant overalls like Tyvek    [Go to Q33]    S2\_TYVEK\_MIX
2. Chemically resistant boots/shoes (different than normal work boots)    [Go to Q33]    S2\_BOOTS\_MIX
3. Cartridge respirator, gas mask    [Go to Q33]    S2\_RESP\_MIX
4. Full face shield    [Go to Q33]    S2\_FACE\_SHIELD\_MIX
5. Gloves    S2\_GLOVES\_MIX
6. None    [Go to Q33]
- \_\_\_DK    [Go to Q33]
- \_\_\_Ref    [Go to Q33]

---

<sup>1</sup> In Spouse Supplemental Pesticide File.

**32a. Which type of glove do you normally wear (when mixing or loading pesticides)?**

**S2GLOVES** READ RESPONSES- CHOOSE ONE

1. fabric or leather gloves [Go to Q33]
  2. chemically resistant gloves, or those designed for pesticide use (includes natural, butyl, chloroprene, nitrile, and fluorocarbon (Viton); or various plastics: polyvinyl chloride (PVC), polyvinyl alcohol, and polyethylene; brand names Silver Shield and 4H) [Go to Q33]
  3. thin, disposable gloves (includes surgical gloves) [Go to Q33]
  4. other waterproof rubber or plastic gloves [Go to Q33]
  5. something else...
- \_\_\_DK [Go to Q33]  
\_\_\_Ref [Go to Q33]

**32a1. What type are these?** \_\_\_\_\_ \_\_\_DK \_\_\_Ref

**S2GOTHER**

**[If Q18=No, DK or Ref for all four pesticides for all crops AND Q11b=No, DK or Ref AND Q27= No, DK or Ref for all pesticides for all non-crop, Go to Q34]**

Now, I want to ask about applying pesticides.

**33. During (reference year), when you applied pesticides, did you normally wear any of the following special clothing or protective equipment?**

READ RESPONSES. MARK ALL THAT APPLY. WHEN COMPLETE PRESS ENTER.

1. Chemically resistant overalls like Tyvek S2\_TYVEK\_APPLY
2. Chemically resistant boots/shoes (different than normal work boots) S2\_BOOTS\_APPLY \_\_\_ DK \_\_\_ Ref
3. Cartridge respirator, gas mask S2\_RESP\_APPLY
4. Full face shield S2\_FACE\_SHIELD\_APPLY
5. Gloves S2\_GLOVES\_APPLY
6. None

**[If Q33 is not equal to 5, Go to Q34]**

33a. Which type of glove do you normally wear (when applying pesticides)?

S2AGLOVE READ RESPONSES- CHOOSE ONE

1. fabric or leather gloves [Go to Q34]
2. chemically resistant gloves, or those designed for pesticide use (includes natural, butyl, chloroprene, nitrile, and fluorocarbon (Viton); or various plastics: polyvinyl chloride (PVC), polyvinyl alcohol, and polyethylene; brand names Silver Shield and 4H) [Go to Q34]
3. thin, disposable gloves (includes surgical gloves) [Go to Q34]
4. other waterproof rubber or plastic gloves [Go to Q34]
5. something else...

33a1. What type are these? \_\_\_\_\_ \_\_DK \_\_Ref

S2AGOTHE

[IF Q32 AND Q33 do not equal 5, Go to Q36]

34. How many pairs of gloves (that you used for mixing, loading or applying) did you go through during (reference year)?

S2GPAIRS

|\_|\_|\_|\_| |\_\_DK |\_\_Ref  
<1-997>

[If Q33 does not equal 5, Go to Q36]

Thinking about the gloves you just described:

35a. During (reference year), did you normally use this type of glove when applying herbicides?

S2GHERB

1. Yes \_\_\_\_\_DK
2. No \_\_\_\_\_Ref
3. Did not use

35b. (During (reference year)), did you normally use this type of glove when applying insecticides?

S2GINS

1. Yes \_\_\_\_\_DK
2. No \_\_\_\_\_Ref
3. Did not use



35c. (During (reference year)), did you normally use this type of glove when applying fumigants?

S2GFUM

- 1. Yes  DK
- 2. No  Ref
- 3. Did not use

35d. (During (reference year)), did you normally use this type of glove when applying fungicides?

S2GFUNG

- 1. Yes  DK
- 2. No  Ref
- 3. Did not use

36. Since (year of enrollment), did you have any incidents with fertilizers, herbicides or other pesticides that caused you an unusually high personal exposure?

S2HIEXP

- 1. Yes  DK [Go to Q38]
- 0. No [Go to Q38]  Ref [Go to Q38]

36a. How many of the exposure incidents have you had since (enrollment date)?   DK  Ref

S2HENUM

36b. Were any of the incidents during (last calendar year)?

S2HELVR

- 1. Yes  DK [Go to Q38]
- 0. No [Go to Q38]  Ref

36c. Regarding the most recent incident, what was the name of the chemical you were exposed to?

S2HECHEM SELECT ONLY ONE PESTICIDE. IF MORE THAN ONE, MAKE REMARK. ENTER FERTILIZER AS 'OTHER'.

\_\_\_\_\_  DK  Ref  
[Insert pesticide list]

[If "Other" NOT selected, Go to Q36d]

Q36c1: What was this? \_\_\_\_\_  DK  Ref

S2HECOTH

**36d. (Regarding the most recent incident,) what parts of your body were exposed?**

READ RESPONSES. MARK ALL THAT APPLY. HIGHLIGHT AND ENTER TO RECORD RESPONSE. WHEN COMPLETE, HIGHLIGHT ANSWER FIELD AND ENTER.

- 1. Head [\[Go to Q36e\]](#) S2\_HEAD
- 2. Face (eyes, nose, mouth) [\[Go to Q36e\]](#) S2\_FACE
- 3. Torso, arms, legs [\[Go to Q36e\]](#) S2\_TORSO\_ARMS\_LEGS
- 4. Hands [\[Go to Q36e\]](#) S2\_HANDS
- 5. Feet [\[Go to Q36e\]](#) S2\_FEET
- 6. Lungs (from breathing) [\[Go to Q36e\]](#) S2\_LUNGS
- 7. Digestive tract (from swallowing) [\[Go to Q36e\]](#) S2\_DIGESTIVE\_TRACT
- 8. Something else... S2\_BP\_SOMETHING\_ELSE

\_\_\_DK

\_\_\_Ref [\[Go to Q36e\]](#)

**36d1. What part was this?** \_\_\_\_\_ \_\_\_DK \_\_\_Ref

S2HEBOTH

**36e. (Regarding the most recent incident,) what pesticide or fertilizer-related job were you doing when the exposure occurred?**

S2HEJOB

- 1. Mixing
- 2. Loading [\[Go to Q36g\]](#)
- 3. Applying [\[Go to Q36f\]](#)
- \_\_\_DK [\[Go to Q36g\]](#)
- 4. Cleaning/maintenance/repair of equipment [\[Go to Q36g\]](#)
- 5. Cleaning up a spill [\[Go to Q36g\]](#)
- 6. Something else...
- \_\_\_Ref [\[Go to Q36g\]](#)

**36e1. What was this?** \_\_\_\_\_ fill in \_\_\_DK[\[Go to Q36g\]](#) \_\_\_Ref[\[Go to Q36g\]](#)

S2HEJOTH

**36f. What application method were you using?**

- S2HEAPPL**
1. broadcast from farm vehicle **[Go to Q36g]**
  2. hand spray gun or wand **[Go to Q36g]**
  3. backpack sprayer **[Go to Q36g]**
  4. banded sprayer **[Go to Q36g]**
  5. gas canister **[Go to Q36g]**
  6. mist blower or fogger **[Go to Q36g]**
  7. pre-applied to seed **[Go to Q36g]**
  8. greenhouse sprayer (only in any greenhouse applications) **[Go to Q36g]**
  9. airblast **[Go to Q36g]**
  10. applied dried pellets **[Go to Q36g]**
  11. power, knapsack or air sprayer or duster **[Go to Q36g]**
  12. hand treatment such as pour-ons, hand wipes, oral paste or boluses **[Go to Q36g]**
  13. injection **[Go to Q36g]**
  14. animal self-application method, like rubbing devise, dust bags, ear tabs, rope wicks or in feed additives **[Go to Q36g]**
  15. something else...
- \_\_\_DK **[Go to Q36g]**  
\_\_\_Ref **[Go to Q36g]**

**36f1. What was this?** \_\_\_\_\_ fill in \_\_\_\_\_DK \_\_\_\_\_Ref

**S2HEAOTH**

**36g. Did you have any of the following symptoms that you think may have been related to this incident?**

**36g1. (Did you have) headaches or dizziness?**

- S2HEHEAD**
- |        |        |
|--------|--------|
| 1. Yes | ___DK  |
| 0. No  | ___Ref |

**36g2. (Did you have) nausea or vomiting?**

- S2HENAUS**
- |        |        |
|--------|--------|
| 1. Yes | ___DK  |
| 0. No  | ___Ref |

**36g3. (Did you have) skin irritation?**

- S2HESKIN**
- |        |        |
|--------|--------|
| 1. Yes | ___DK  |
| 0. No  | ___Ref |

**36g4. (Did you have) eye irritation?**

S2HEEYEI      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g5. (Did you have) tightness or discomfort in your chest?**

S2HETIGH      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g6. (Did you have) difficulty breathing?**

S2HEDIFB      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g7. (Did you have) difficulty walking?**

S2HEDIFW      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g8. (Did you have) blurred or double vision?**

S2HEBLUR      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g9. (Did you have) drooling or tearing?**

S2HEDROO      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g10. (Did you have) twitching, jerking or involuntary movements of arms or legs?**

S2HETWIT      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g11. (Did you) pass out?**

S2HEPASS      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g12. (Did you have) convulsions, seizures or fits?**

S2HECONV      1. Yes      \_\_\_DK  
                         0. No      \_\_\_Ref

**36g13. (Did you have) any other symptoms that we have not mentioned?**

- S2HEOTHE** 1. Yes DK **[Go to Q36h]**  
0. No **[Go to Q36h]** Ref **[Go to Q36h]**

**36g13a. What were these symptoms?** \_\_\_\_\_ DK Ref  
**S2HEOSPE**

**36h. How soon after the incident did you wash off or change clothes?**

- S2HEWASH** 1. <30 minutes  
2. 30-59 minutes  
3. 1-3 hours  
4. 4-6 hours  
5. 7-9 hours  
6. >9 hours after the incident  
DK  
Ref

**37. Did this incident result in a health care visit?**

- S2HECARE** 1. Yes DK **[Go to Q38]**  
0. No **[Go to Q38]** Ref **[Go to Q38]**

**37a. Were you hospitalized?**

- S2HEHOSP** 1. Yes DK  
0. No Ref

For the next set of questions, I'd like you to think about the time period from **(date of enrollment)** to the present time.

**38. After mixing or applying pesticides, do (did) you usually bathe or shower before continuing with other farm activities?**

- S2BATHE** 1. Yes DK  
0. No Ref

**39. Do (did) you usually wear the same work clothes you used to mix or apply pesticides two or more days without washing them?**

- S2CLOTHE** 1. Yes DK  
0. No Ref

40. Do (did) you usually take your work boots or shoes off before entering your home?

- S2BOOTS      1. Yes                    \_\_\_DK  
                  2. No                      \_\_\_Ref  
                  3. Do not wear

41. Are (were) the clothes you use(d) when mixing or applying pesticides usually washed separately?

- S2WASHED      1. Yes                    \_\_\_DK  
                  0. No                      \_\_\_Ref

42. Are (were) agricultural or commercial pesticides ever stored (even temporarily) in your home or basement?

- S2STORED      1. Yes                    \_\_\_DK  
                  0. No                      \_\_\_Ref

43. How far is your house from the nearest field or orchard where pesticides are applied?

- S2FIELD      1. No pesticides applied on farm  
                  2. Less than 50 feet  
                  3. 50-99 feet  
                  4. 100-199 feet  
                  5. 200-1/4 mile (1320 ft)  
                  6. GT 1/4 mile  
                  \_\_\_DK  
                  \_\_\_Ref

[Ask Q44-47 only if Q18a = yes for any pesticide reported in crop section or Q28 = 2 for any non-crop pesticides]

44. Does (did) the farm vehicle you usually use to apply pesticides have an enclosed cab?

- S2ENCLOS      1. Yes                    \_\_\_DK                    [Go to Q47]  
                  0. No                    [Go to Q47]                    \_\_\_Ref[Go to Q47]

45. Do (did) you usually spray with the windows closed?

IF ANSWER IS 'IT DEPENDS ON THE WEATHER', THEN ASK: When it is (was) warm, what do you do?

- S2WINDOW      1. Yes                    \_\_\_DK  
                  0. No                      \_\_\_Ref

46. Does (did) your cab have a charcoal filter?

- S2FILTER      1. Yes                    \_\_\_DK  
                  0. No                      \_\_\_Ref

47. Do (did) you usually repair your own spraying or mixing equipment?

S2REPAIR

1. Yes DK  
0. No Ref

[IF Q11a is NO, DK, or Ref, Go to Q51]

48. In most of your fields, how often do (did) you rotate the crops that you grow?

S2ROTATE READ RESPONSES.

1. every year [Go to Q49] DK [Go to Q49]  
2. every other year [Go to Q49] Ref [Go to Q49]  
3. every third year [Go to Q49]  
4. never [Go to Q49]  
5. something else...

48a. How often is (was) that? \_\_\_\_\_ fill in DK Ref

S2ROFTEN

49. For most of the herbicides, insecticides and fungicides that you use(d), do (did) you...

S2AMOUNT READ RESPONSES

1. usually apply less than the minimum recommended label rate DK  
2. usually apply more than the recommended label rate REF  
3. usually apply the recommended rate

50. Have you substituted biological or cultural practices (resistant varieties, pheromones, Bt sprays, tillage, planting/harvesting date adjustments, etc.) for any of your chemical pesticide applications?

S2SUBSTI

1. Yes DK  
0. No Ref

51. Since (year of enrollment), has your house been treated for termites?

S2TERMIT

1. Yes DK [Go to Q53]  
0. No [Go to Q53] Ref [Go to Q53]

52. How many times has this house been treated (do not include inspections for termites)?

S2TTIMES

1. Once DK  
2. Twice REF  
3. Three times  
4. Four times  
5. Five times  
6. More than five times

53. Since (year of enrollment), has this house been treated for flies, fleas, cockroaches, ants, or insects other than termites?

S2FLIES

1. Yes DK [Go to Q54]  
0. No [Go to Q54] Ref [Go to Q54]

53a. How often is this house usually treated?

S2FOFTEN

1. Every month or more often DK  
2. Every 2–4 months REF  
3. Every 5–11 months   
4. Every year   
5. Less than once a year

54. How often is your lawn treated for weeds, or molds?

S2LAWNOF

1. Never or rarely [Go to Q55] DK  
2. Once a year   
3. Twice a year   
4. Once a month   
5. More than once a month   
DK REF

54a. Who usually treats your lawn?

S2LAWNWH

1. Self DK  
2. Spouse REF  
3. Someone else

55. Do you have any cats or dogs?

S2CATDOG

1. Yes DK [Go to Q57]  
0. No [Go to Q57] Ref [Go to Q57]

56. Do you use any of the following?

S2CDINS1 / S2CDINS2 / S2CDINS3 / S2CDIN4 / S2CDINS5 / S2CDINS6 / S2CDINS7

READ RESPONSES- MARK ALL THAT APPLY

1. Flea powders DK  
2. Flea collars   
3. Flea/tick shampoo or dips   
4. Home fumigants/flea bombs   
5. Oral treatments (like Program)   
6. External or topical treatments (like Advantage)   
7. Something else..   
8. None of these   
DK Ref

57. Do family members who have been working in farm areas usually take their work boots or shoes off before entering the house?

S2BOOTOF

1. Yes DK  
2. No Ref  
3. No one in family works in farm areas



**58. In your household, how are clothes usually washed that have been worn when mixing or applying pesticides?**

**S2CLOTHW**

READ RESPONSES

1. Always wear disposable clothing (like Tyvek®) [Go to Q60] \_\_\_\_\_DK
2. Mixed with family wash \_\_\_\_\_REF
3. Soaked separately then mixed with family wash
4. Washed separately in family machine
5. Sent out or washed in machine used only for this purpose
6. No pesticide contaminated laundry in household [Go to Q60]

**59. How many days per year do you personally wash clothes that have been worn during pesticide mixing or application?**

**S2DAYSWA**

1. Less than 5 days \_\_\_\_\_DK
2. 5–10 days \_\_\_\_\_REF
3. 11–15 days
4. 16–20 days
5. More than 20 days

**The next questions ask about your views regarding the occupation of farming. Do you agree or disagree with the following statements?**

**60. Farming is more dangerous than jobs in industry or manufacturing.**

**S2DANGER**

1. agree \_\_\_\_\_DK
2. disagree \_\_\_\_\_REF

**61. Accidents are just one of the occupational hazards of farming that must be accepted if you are going to be in the business.**

**S2ACCIDE**

1. agree \_\_\_\_\_DK
2. disagree \_\_\_\_\_REF

**62. During a normal work week, it's common for me, while doing farm work, to experience a number of 'close calls' that under different circumstances might have resulted in personal injury or property loss.**

**S2CLOSEC**

1. agree \_\_\_\_\_DK
2. disagree \_\_\_\_\_REF
3. does not do farm work

**63. To make a profit, most farmers take risks that might endanger their health.**

**S2PROFIT**

1. agree \_\_\_\_\_DK
2. disagree \_\_\_\_\_REF

**[GO TO COOKING PRACTICES]**