

MINNESOTA ANNUAL PESTICIDE AND FERTILIZER SURVEY

CLEAN COPY FOR CROP YEAR 2021 SURVEY COLLECTED SPRING OF 2022 Wheat and Soybean – Updated 3/22/2021

(Conducted by phone only)

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The Minnesota Department of Agriculture, in cooperation with the National Agricultural Statistics Service (NASS), will conduct periodic surveys of major crop producers that collect information on pesticide and fertilizer use and pesticide use rates. Survey respondents are randomly selected, and the reported results are based on advanced standardized statistical analyses conducted by NASS nationwide. Your response is necessary to help provide the best statistics possible. If there are any questions, contact the Minnesota State Statistician at (615) 728-3113.

1. Did this operation plant any *[[WHEAT]]* or *[[SOYBEAN]]* in 2021?

¹☐ Yes - Continue ³☐ No – Go to Conclusion

Section 2 – 2021 *[[Wheat]]* Crop Acres

2. How many acres of *[[Wheat]]* were planted for the 2021 crop year?

Acres

xxx

[If *[[Wheat]]* acres greater than zero, then continue, otherwise go to **Section 3.**]

3. How many acres of *[[Wheat]]* were treated with herbicides?

Acres

xxx

4. How many acres of *[[Wheat]]* were treated with insecticides? (Exclude seed treatments).

xxx

5. How many acres of *[[Wheat]]* were treated with fungicides? (Exclude seed treatments).

xxxx

Section 3 – 2021 *[[Soybean]]* Crop Acres

6. How many acres of *[[Soybean]]* were harvested for the 2021 crop year?

Acres

xxx

[If *[[Soybean]]* acres are greater than zero then continue, otherwise go to **Section 4.**]

7. How many acres of *[[Soybean]]* were treated with herbicides?

Acres

xxx

8. How many acres of *[[Soybean]]* were treated with insecticides? (Exclude seed treatments).
9. How many acres of *[[Soybean]]* were treated with fungicides? (Exclude seed treatments).

xxx
xxxx

Section 4

INSTRUCTION: The next questions will ask about USAGE OF INDIVIDUAL HERBICIDES, INSECTICIDES AND FUNGICIDES ON 2021 CROPS.

Include applications in the fall of 2020 on crops for the 2021 harvest. Report the acres treated with each individual chemical during 2021 by crop or land use. If pesticides were applied in combination, report each separately. (**Exclude** seed treatments and inoculants.)

1. In the following table, please report all herbicides, insecticides and fungicides used on the 2021 *[Wheat]* crop.

[illegible]

1. In the following table, please report all herbicides, insecticides and fungicides used on the 2021 *[[Soybean]]* crop.

[illegible]

[If Herbicide, Insecticide or Fungicide type or quantity is unknown] May we call your dealer, co-op or applicator about the chemicals applied to your operation? Yes__ No__

If Yes, What is the name of the company? _____

Who should we contact for this follow up information? _____

Who should we contact at that company? _____

If Section 3, Q8> 0, then Continue, Elseif Section 2, Q6>0 skip to Question 10, Else goto Question 11.

1. You have just reported applying insecticides to your soybean crop. The next questions will ask about those insecticide applications. For the insecticide that was applied to the 2021 soybean crop, how it was applied (choose all that apply)?
 - a. Farmer- ground application
 - b. Farmer- aerial application
 - c. Dealer- ground application
 - d. Dealer- aerial application
 - e. Other
2. You reported using insecticides on your soybean acres. What insects were you targeting? (choose all that apply)
 - a. Soybean aphid,
 - b. Spider mites,
 - c. Others
 - d. Do not know

If 2a=soybean aphid then ask questions 3,4,5,6, otherwise move to question 7

3. Who scouted your soybean fields for aphids? (choose all that apply)
 - a. Farmer
 - b. Dealer
 - c. Crop consultant
 - d. Other than the above
 - e. Did not scout
 - f. Do not know
4. What threshold (aphids per plant) did you use for applying the insecticide for soybean aphid (select one)?
 - a. Did not use thresholds
 - b. 1-30,
 - c. 31-50,
 - d. 51-100,
 - e. 101-150,
 - f. 151-200,
 - g. 201-250
 - h. Over 250
 - i. Do not know
5. Were records kept for soybean aphid thresholds?
 - a. Yes, for all fields
 - b. Yes, for some fields
 - c. No
 - d. Do not know
6. What factors other than thresholds did you consider to make insecticide application for soybean aphid (choose all that apply)?
 - a. Did not consider anything other than thresholds
 - b. Followed an IPM plan
 - c. Followed a calendar schedule
 - d. Followed advice from dealer
 - e. Followed advice from crop consultant
 - f. Followed other farmers

7. What factors other than cost and effectiveness were considered important when choosing an insecticide product (choose all that apply)?
 - a. Safety to the applicator
 - b. Safety to insect predators
 - c. Setbacks from water
 - d. Label language regarding bees
 - e. Weather
 - f. Aphid resistance
 - g. None
8. Were there any bee hives within 3 miles of any soybean field when insecticide was applied?
 - a. Yes
 - b. No
 - c. Do not know
9. What setbacks from water, if any, were used?
 - a. No setbacks
 - b. Setbacks listed on the label
 - c. Label did not require setbacks from water
 - d. No water around the field
 - e. Do not know
10. What percentage of your soybean seeds were treated with insecticide (for all soybean acres)? (This question is placed at the end to avoid confusion with other insecticide application questions)
 - a. None
 - b. 1-25
 - c. 26-50
 - d. 51-75
 - e. 76-99
 - f. 100
 - g. Do not know

Integrated Pest Management

The next questions are intended for all crops with a focus on use of IPM for insect pests. Integrated Pest management, or IPM, is an approach that uses multiple pest control tactics in order to minimize economic, environmental, and human health risks.

11. What is your primary source of information on Integrated Pest Management for insects?
 - a. University extension
 - b. Independent crop consultant
 - c. Seed or chemical company representative
 - d. Internet
 - e. Other farmers
 - f. Other
 - g. I do not get information about IPM for insects
12. Which of these Integrated Pest Management practices do you use for insect pest management (select all that apply)?
 - a. Biological control (Enum note: use of beneficial insects to kill pests)
 - b. Cultural control (Enum note: tillage, crop rotation, delayed planting)
 - c. Resistant or tolerant crop seed selection (Enum note: Bt traits, cultivar selection)
 - d. Physical control (Enum note: barriers around crops such as high and low tunnels)
 - e. Chemical control (Enum note: pesticides)
 - f. Other
 - g. I don't have pests to manage
13. What do you view as the primary challenge for implementing Integrated Pest Management?
 - a. Cost
 - b. Time
 - c. Understanding of how to use Integrated Pest Management
 - d. Other
 - e. I don't see any challenges

14. If insecticide was used on your wheat, was the decision to use insecticide based on scouting results from the field where the applications were applied?
- a. Yes
 - b. No
 - a) Occasionally
 - b) Insecticide was not used
15. If insecticide was used on your soybean, was the decision to use insecticide based on scouting results from the field where the applications were applied?
- a. Yes
 - b. No
 - c) Occasionally
 - d) Insecticide was not used
16. Do you use pest update information from any of the following sources to make insect pest management decisions (choose all that apply)?
- a. Text alerts
 - b. Postal mail
 - c. Email
 - d. Social media
 - e. Websites and/or blogs
 - f. Other
 - g. I do not use pest updates to make management decisions
17. What factors do you consider when choosing an insecticide (list all that apply)?
- a. Insect resistance to certain insecticides
 - b. Rotation of modes of action
 - c. Toxicity of insecticide to bees
 - d. Toxicity of insecticide to humans
 - e. Prior experience with insecticide
 - f. Cost of insecticide
 - g. Other
 - h. No insecticides are used

Section 6 – [Wheat] Fertilizer Management

I will now ask you about your fertilizer inputs on [Wheat] acres.

Did all your [Wheat] fields receive manure for the [2021] crop year?

1. Yes, all my [Wheat] fields received manure. Go to Section 7.
2. No, I have at least 1 [Wheat] field with no manure applied. - Continue

First on a [Wheat] field with no manure or compost applied in the fall of [2020] and no manure or compost applied anytime during the 2021 crop year.

A1. Do you have a [Wheat] field without manure applied in the fall of 2020 or anytime in [2021] before or during the crop year? Yes_____ [continue] No_____ [Skip to Section 7]

Think about your largest [Wheat] field that you planted in 2021 without any manure.

I will now ask you questions about that specific field. All following questions will be in relation to that specific field.

A5. How many acres are in this field in 2021? _____

A2. Was this field irrigated? Yes No

A3. What was the crop grown on this field in 2020 before the 2021 [Wheat] crop? (Not including cover crop)

- 1 Soybeans
- 2 corn
- 3 alfalfa (any alfalfa mix)
- 4 small grains (oat, wheat, rye, barley)
- 99 other

A4. If Wheat [A3 (2)] What was the crop harvested from this field in the 2019 season, before the last two crops?

- 1 Soybeans
- 2 corn
- 3 alfalfa (any alfalfa mix)
- 4 small grains (oat, wheat rye, barley)
- 99 other

What was the yield goal when planting this field in 2021? _____ bushels per acre.

A6. What was the average yield of this field over the past three [Wheat] crops? (or estimate if unknown) _____

A7. Was any commercial fertilizer applied to this [Wheat] field for the 2021 [Wheat] crop? Yes No
IF no go to Section 7.

A8. Was any commercial fertilizer applied with a variable rate or more than one rate such as by management zone or grid on this [Wheat] field? Yes No

If yes, please use a field average for all the fertilizer rate questions.

A9. What was the total units (actual pounds) per acre of nitrogen applied to this field from all sources and all applications on this field? _____

A9. What type of fertilizer was used to supply the majority of the nitrogen applied to this field?

- 10 Anhydrous Ammonia
- 11 Urea (urea and coated urea such as ESN or Super U)
- 12 Liquid N (such as 28% or 32%)
- 13 Other
- 99 Unknown

A10. Did you use a nitrogen inhibitor or stabilizer on this field? Yes No DK

I will now ask you for all your commercial fertilizer applications made on this field for the 2021 crop year, again including any 2020 fall applications of commercial fertilizer. Each individual application will be recorded separately, preferably as units per acre.

