



# Wisconsin Ag News – Chemical Use

## Soybeans: Fall 2023



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The National Agricultural Statistics Service (NASS) Agricultural Chemical Use Program is the U.S. Department of Agriculture's official source of statistics about on-farm and post-harvest fertilizer and pesticide use and pest management practices.

In the fall of 2023, NASS collected data for the 2023 crop year, the one-year period beginning after the 2022 harvest and ending with the 2023 harvest, about chemical use and pest management practices used on soybean production. The data was collected as part of the Agricultural Resource Management Survey (ARMS) and the results are presented here.

**Fertilizer Use:** Of the three primary macronutrients, potash was the most widely used on soybean acres planted in Wisconsin. Farmers applied potash to 63 percent of planted acres at an average rate of 107 pounds per acre per year. Macronutrients nitrogen and phosphate were applied at an average rate of 17 and 53 pounds per acre per year, respectively. The secondary macronutrient, sulfur, was applied to 36 percent of acres planted to soybeans.

**Pesticide Use:** Herbicide active ingredients were applied to 98 percent of the soybean acres planted. 2, 4-D, choline salt and glyphosate iso. salt were the most widely used pesticides on soybean acres, but S-metolachlor was the active ingredient with the greatest total amount applied.

### Pesticide Use on Soybeans – Wisconsin and Program States: 2023

| Active ingredient             | Wisconsin             |                |               | Program states <sup>1</sup> |                |               |
|-------------------------------|-----------------------|----------------|---------------|-----------------------------|----------------|---------------|
|                               | Planted acres treated | Yearly rate    | Total applied | Planted acres treated       | Yearly rate    | Total applied |
|                               | (percent)             | (lbs per acre) | (1,000 lbs)   | (percent)                   | (lbs per acre) | (1,000 lbs)   |
| <b>Fungicide</b>              |                       |                |               |                             |                |               |
| Total <sup>2</sup> .....      | 20                    |                | 105           | 21                          |                | 3,678         |
| <b>Herbicide <sup>3</sup></b> |                       |                |               |                             |                |               |
| 2, 4-D, choline salt .....    | 56                    | 0.881          | 1,049         | 37                          | 0.713          | 21,406        |
| Chlorimuron-ethyl .....       | 15                    | 0.016          | 5             | 6                           | 0.022          | 117           |
| Chloransulam-methyl .....     | 10                    | 0.013          | 3             | 6                           | 0.021          | 92            |
| Flumioxazin .....             | 12                    | 0.067          | 17            | 10                          | 0.087          | 687           |
| Glyphosate .....              | 19                    | 1.282          | 524           | 10                          | 1.361          | 10,852        |
| Glyphosate dim. salt .....    | 22                    | 0.624          | 290           | 25                          | 0.559          | 11,056        |
| Glyphosate iso. salt .....    | 56                    | 0.827          | 985           | 46                          | 1.106          | 41,158        |
| Glyphosate pot. salt .....    | 18                    | 0.840          | 327           | 22                          | 1.407          | 24,723        |
| Imazethapyr .....             | 22                    | 0.060          | 27            | 8                           | 0.054          | 367           |
| Metribuzin .....              | 22                    | 0.302          | 142           | 16                          | 0.241          | 3,135         |
| S-Metolachlor .....           | 46                    | 1.287          | 1,246         | 20                          | 1.320          | 20,909        |
| Sulfentrazone .....           | 11                    | 0.116          | 27            | 19                          | 0.209          | 3,130         |
| Total <sup>2</sup> .....      | 98                    |                | 5,217         | 96                          |                | 196,352       |
| <b>Insecticide</b>            |                       |                |               |                             |                |               |
| Total <sup>2</sup> .....      | (D)                   |                | (D)           | 22                          |                | 1,987         |

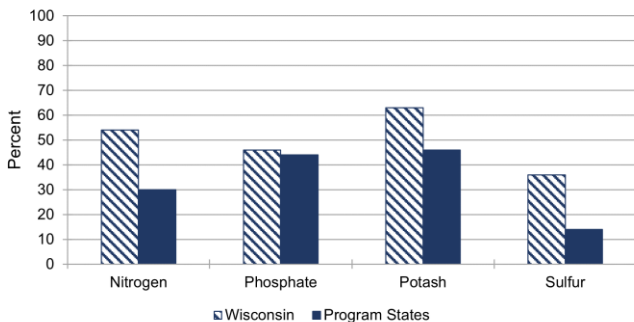
(D) Withheld to avoid disclosing data for individual operations.

<sup>1</sup> The 19 program states surveyed about soybeans in the 2023 ARMS were Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, Tennessee, Virginia, and Wisconsin.

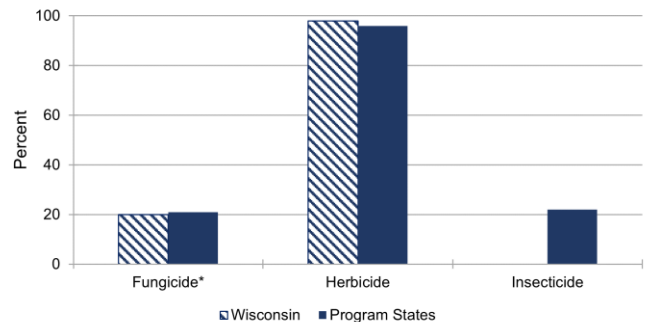
<sup>2</sup> Total Fungicide, Herbicide, and Insecticide include pesticides not listed in the table.

<sup>3</sup> Given the large number of herbicides applied to row crops, active ingredients applied to less than 10 percent of planted acres in Iowa are not included in this table but can be found at [www.nass.usda.gov](http://www.nass.usda.gov).

Fertilizers, Percent of Soybean Planted Acres Treated  
Wisconsin and Program States: 2023



Pesticides, Percent of Soybean Planted Acres Treated  
Wisconsin and Program States: 2023



## Fertilizer Use on Soybeans – Wisconsin and Program States: 2023

| Active ingredient | Wisconsin             |                |               | Program states <sup>1</sup> |                |               |
|-------------------|-----------------------|----------------|---------------|-----------------------------|----------------|---------------|
|                   | Planted acres treated | Yearly rate    | Total applied | Planted acres treated       | Yearly rate    | Total applied |
|                   | (percent)             | (lbs per acre) | (1,000 lbs)   | (percent)                   | (lbs per acre) | (1,000 lbs)   |
| Nitrogen .....    | 54                    | 17             | 19,100        | 30                          | 22             | 537,000       |
| Phosphate .....   | 46                    | 53             | 51,100        | 44                          | 57             | 2,041,600     |
| Potash .....      | 63                    | 107            | 142,300       | 46                          | 88             | 3,287,000     |
| Sulfur .....      | 36                    | 22             | 16,800        | 14                          | 20             | 230,800       |

<sup>1</sup> The 19 program states surveyed about soybeans in the 2023 ARMS were Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, Tennessee, Virginia, and Wisconsin.

Crop rotation was the top pest management practice on Soybean acreage in Wisconsin.

## Pest Management Practices on Soybeans – Wisconsin and Program States: 2023

|  | Wisconsin         |                 | Program states <sup>1</sup> |                 |
|--|-------------------|-----------------|-----------------------------|-----------------|
|  | % of area planted | % of operations | % of area planted           | % of operations |
| <b>Avoidance</b>   |                   |                 |                             |                 |
| Crop or plant variety chosen for specific pest resistance .....  | 61                | 51              | 54                          | 55              |
| Planting locations planned to avoid cross infestation of pests .....                                     | 22                | 19              | 14                          | 13              |
| Planting or harvesting dates adjusted .....  | 13                | 10              | 13                          | 15              |
| Rotated crops during past 3 years .....  | 89                | 90              | 81                          | 78              |
| Row spacing, plant density, or row directions adjusted .....   | 28                | 24              | 19                          | 19              |
| <b>Monitoring</b>  |                   |                 |                             |                 |
| Diagnostic laboratory services used for pest detection via soil or plant tissue analysis .....           | 1                 | 1               | 7                           | 6               |
| Field mapping data used to assist decisions .....  | 6                 | 5               | 13                          | 11              |
| Scouted -  |                   |                 |                             |                 |
| established process used .....   | 11                | 9               | 17                          | 14              |
| for pests due to a pest advisory warning .....   | 4                 | 4               | 11                          | 10              |
| for pests due to a pest development model .....  | 9                 | 6               | 9                           | 7               |
| for pests or beneficial organisms-not scouted .....  | 5                 | 8               | 8                           | 10              |
| for pests or beneficial organism by conducting general observations while performing routine tasks ..... | 41                | 39              | 30                          | 31              |
| for pests or beneficial organism by deliberately going to the crop acres or growing areas .....          | 53                | 53              | 62                          | 59              |
| Weather data used to assist decisions .....  | 63                | 70              | 61                          | 59              |
| Written or electronic records kept to track pest activity .....  | 23                | 15              | 40                          | 34              |
| <b>Prevention</b>  |                   |                 |                             |                 |
| Beneficial insect or vertebrate habitat maintained .....   | 5                 | 6               | 8                           | 6               |
| Crop residues removed or burned down .....   | 13                | 16              | 12                          | 15              |
| Equipment and implements cleaned after field work to reduce spread of pests .....                        | 32                | 29              | 42                          | 39              |
| Field edges, ditches, or fence lines chopped, sprayed, mowed, plowed, or burned .....                    | 52                | 48              | 51                          | 48              |
| Field left fallow previous year to manage insects .....  | 0                 | 0               | 1                           | 1               |
| Flamer used to kill weeds .....  | 0                 | 0               | 1                           | 1               |
| No-till or minimum-till used .....   | 55                | 53              | 62                          | 61              |
| Plowed down crop residue using conventional tillage .....  | 28                | 24              | 17                          | 19              |
| Seed treated for insect or disease control after purchase .....  | 30                | 18              | 32                          | 28              |
| Water management practices used .....  | 0                 | 0               | 3                           | 2               |
| <b>Suppression</b>   |                   |                 |                             |                 |
| Beneficial organisms applied or released .....   | (Z)               | 1               | 1                           | 1               |
| Biological pesticides applied .....  | 8                 | 5               | 3                           | 3               |
| Buffer strips or border rows maintained to isolate organic from non-organic crops .....                  | 3                 | 2               | 5                           | 5               |
| Floral lures, attractants, repellants, pheromone traps, or biological pest controls used .....           | 0                 | 0               | (Z)                         | (Z)             |
| Ground covers, mulches, or other physical barriers maintained .....                                      | 38                | 33              | 37                          | 34              |
| Pesticides with different mechanisms of action to keep pest from becoming resistant to pesticides .....  | 38                | 42              | 40                          | 38              |
| Scouting data compared to published information to assist decisions .....                                | 20                | 11              | 22                          | 18              |
| Trap crop grown to manage insects .....  | 0                 | 0               | 1                           | (Z)             |

(Z) Less than half of the unit shown.

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More information and data for the USDA NASS Chemical Use Program can be found at:

[https://www.nass.usda.gov/Surveys/Guide\\_to\\_NASS\\_Surveys/Chemical\\_Use/](https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Chemical_Use/).