



Agricultural Chemical Use Statistical Program

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Chemical Use Topics

- Program History
- Survey and Estimation Methodology
- Quality Measures
- Data Products



Chemical Use Program History

- NASS began collecting and publishing chemical use data in the early 1990's.
- Partially in reaction to the 1990 Alar scare, the Government responded to public concerns with initiatives on Food Safety and Water Quality. These Initiatives have evolved over the years, but the need for reliable, timely environmental data has not changed.
- Since 1990, NASS has surveyed U.S. farmers to collect information on the chemical ingredients they apply to agricultural commodities through fertilizers and pesticides. On a rotating basis, the program currently includes fruits, vegetables and major field crops.
- The program also collects information on the pest management practices farmers implement to reduce their dependence on agricultural chemicals (e.g., practices that make pesticides more effective or are an alternative to pesticides).

Field Crop Partnership

- NASS conducts chemical use surveys for **field crops** in cooperation with the USDA's Economic Research Service as part of the Agricultural Resource Management Survey (ARMS II) program.
- The ARMS II Survey is conducted annually from October through December.
- Integrating ARMS II as part of the ARMS survey cycle allows fertilizer and pesticide data to be analyzed with farm finances, farm household characteristics and other production practices.

Sampled States

Fig. 1. States in the 2021 Corn Chemical Use Survey

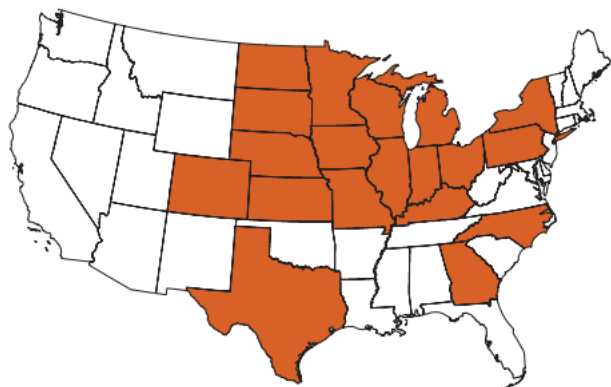


Fig. 1. States in the 2020 Soybean Chemical Use Survey

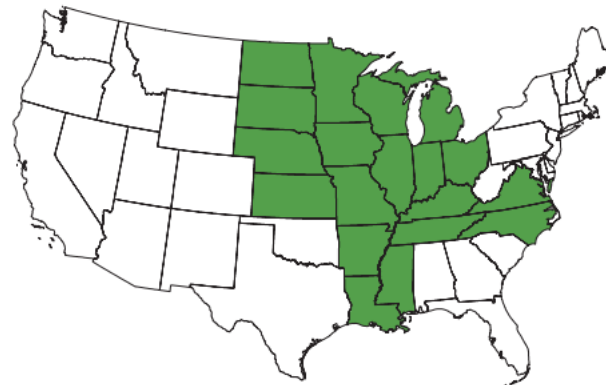


Fig. 1. States in the 2020 Vegetable Chemical Use Survey
(number of crops surveyed in state)

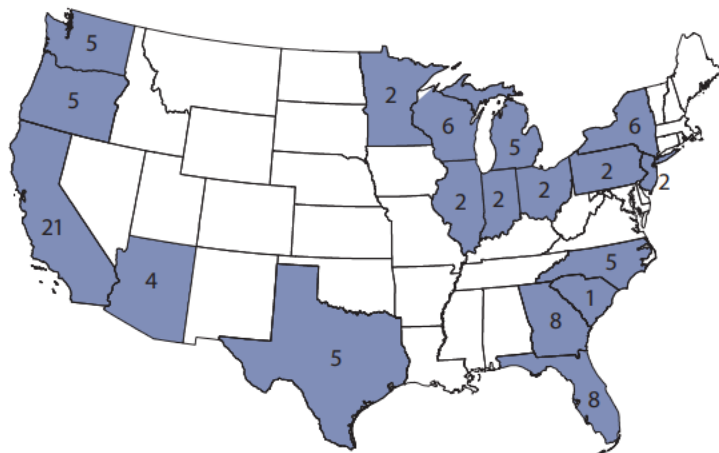
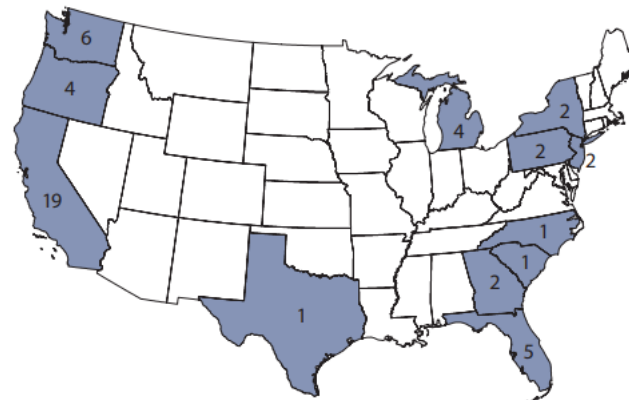


Fig. 1. States Included in the 2019 Fruit Chemical Use Survey
(number of crops surveyed in state)





ARMS II and Chemical Use

Crop Rotation

Crop Year	Commodity
2017	Fruit, cotton, soybeans, wheat
2018	Vegetables, corn, soybeans, peanuts
2019	Fruit, wheat, sorghum, cotton, barley
2020	Vegetables, soybeans
2021	Fruit, corn, cotton, rice
2022	Vegetables, wheat, potatoes

2019 Fruit Chem Use Results

The 2019 Agricultural Chemical Use Survey collected fungicide data applied 21 different fruit crops. NASS conducted the survey among producers in 12 states, focusing on the states that were major producers for the surveyed crops.

Top 5 Crops: Fungicides	000 lbs. Applied
Grapes	58,391
Apples	7,476
Oranges	2,829
Cherries	1,534
Strawberries	1,520

2020 Veg Chem Use Results

The 2020 Agricultural Chemical Use Survey collected fungicide data applied to 22 different vegetable crops. NASS conducted the survey among producers in 18 states, focusing on the states that were major producers for the surveyed crops.

Top 5 Crops: Fungicides	000 lbs. Applied
Lettuce	1,824
Carrots	893
Watermelons	798
Cucumbers	616
Onions	527

Data Products

- [https://www.nass.usda.gov/Surveys/Guide to NASS Surveys/Chemical Use/index.php](https://www.nass.usda.gov/Surveys/Guide%20to%20NASS%20Surveys/Chemical%20Use/index.php)



Respond Online

Click here to [complete your survey online](#). Remember, you will need your unique survey code

[Get the Data](#)

[Methodology and Quality Measures](#)

[About the Survey](#)

Latest Releases

Since 2009, the release of chemical use surveys is available through [Quick Stats](#). The following material each survey: highlights fact sheet, a methodology paper, and a set of data tables featuring commonly requested information.

2021 Corn, Cotton, and Rice – released May 13, 2022:

Highlights ([Corn](#), [Cotton](#), and [Rice](#)) | [Data Tables](#) | [Methodology](#)

2020 Vegetables - released July 21, 2021:

[Highlights](#) | [Data Tables](#) | [Methodology](#)

2020 Soybeans - released May 14, 2021

[Highlights](#) | [Data Tables](#) | [Methodology](#)

2019 Fruits - released July 22, 2020


[Highlights](#) | [Data Tables](#) | [Methodology](#)

2019 Barley, Cotton, Sorghum, and Wheat – released May 8, 2020:

Highlights ([Barley](#), [Cotton](#), [Sorghum](#), and [Wheat](#)) | [Data Tables](#) | [Methodology](#)

Quick Stats

- Since May 2010 Agricultural Chemical use data are published to the Quick Stats 2.0 database


United States Department of Agriculture
National Agricultural Statistics Service

Quick Stats

Navigation History: Program->Sector->Group->Commodity->Category->Data Item->Domain

Select Commodity (one or more)

Keyword Search [Hints](#)

Program:
CENSUS
SURVEY

Sector:
ANIMALS & PRODUCTS
CROPS
ECONOMICS
ENVIRONMENTAL

Group:
FIELD CROPS
FRUIT & TREE NUTS
HORTICULTURE
LIVESTOCK
VEGETABLES

Commodity:
BARLEY
CORN
COTTON
GRAIN
OATS
PEANUTS
RICE
SORGHUM
SOYBEANS

Category:
APPLICATIONS
PEST MGMT
TREATED

Data Item:
CORN - APPLICATIONS, MEASURED IN LB
CORN - APPLICATIONS, MEASURED IN LB / ACRE / APPLICATION, 10TH PERCENTILE
CORN - APPLICATIONS, MEASURED IN LB / ACRE / APPLICATION, 90TH PERCENTILE
CORN - APPLICATIONS, MEASURED IN LB / ACRE / APPLICATION, AVG
CORN - APPLICATIONS, MEASURED IN LB / ACRE / APPLICATION, CV PCT
CORN - APPLICATIONS, MEASURED IN LB / ACRE / APPLICATION, MEDIAN
CORN - APPLICATIONS, MEASURED IN LB / ACRE / YEAR, 10TH PERCENTILE
CORN - APPLICATIONS, MEASURED IN LB / ACRE / YEAR, 90TH PERCENTILE
CORN - APPLICATIONS, MEASURED IN LB / ACRE / YEAR, AVG

Domain:
CHEMICAL, FUNGICIDE
CHEMICAL, HERBICIDE
CHEMICAL, INSECTICIDE
CHEMICAL, OTHER
FERTILIZER
RESTRICTED USE CHEMICAL, HERBICIDE
RESTRICTED USE CHEMICAL, INSECTICIDE
RESTRICTED USE CHEMICAL, OTHER

Highlights

- <https://www.nass.usda.gov/Publications/Highlights/index.php>

NASS Highlights

July 2021 • No. 2021-2



2020 AGRICULTURAL CHEMICAL USE

Vegetable Crops

About the Survey

The Agricultural Chemical Use Program of USDA's National Agricultural Statistics Service (NASS) is the federal government's official source of statistics about on-farm and post-harvest commercial

The 2020 Agricultural Chemical Use Survey of vegetable producers collected data about pesticide use as well as pest management practices on acres planted to 22 different vegetable crops. NASS conducted the survey among producers in 18 states, focusing on the states that were major producers for the surveyed crops. (Fig. 1)

Data are for the 2020 crop year, the one-year period beginning after the 2019 harvest and ending with the 2020 harvest. Data are available online for all



Pre-Defined Queries

- https://www.nass.usda.gov/Data_and_Statistics/Pre-Defined_Queries/index.php

Environmental:

- [Agricultural Chemical Usage - 2021 Corn, Cotton, and Rice](#)

- [Agricultural Cher](#)

- [Agricultural Cher](#)

- [Agricultural Cher](#)

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2020 Vegetable Chemical Use - Released July 21, 2021

The following are requested queries from our Quick Stats database system dealing with Vegetable Chemical Use and have been developed for your convenience based on their timeliness and user feedback.

[Please click here for a listing of symbol and selected data item definitions.](#)

Pesticide Use

[Asparagus](#)

[Cauliflower](#)

[Lettuce, Head](#)

[Spinach](#)

[Beans, Snap](#)

[Celery](#)

[Lettuce, Other](#)

[Squash](#)

[Broccoli](#)

[Corn, Sweet](#)

[Onions](#)

[Tomatoes](#)

[Cabbage](#)

[Cucumbers](#)

[Peas, Green](#)

[Watermelons](#)

[Cantaloupes](#)

[Garlic](#)

[Peppers, Bell](#)

[Carrots](#)

[Honeydews](#)

[Pumpkins](#)

Pest Management

[Vegetable Totals \(excluding Potatoes\), Incl Strawberries, In the Open](#)

Quality Measures

- https://www.nass.usda.gov/Publications/Methodology_and_Data_Quality/index.php
- Scope and Purpose
- Survey Timeline
- Sampling
- Sampling Frames and Methods
- Data Collection and Editing
- Analysis Tools
- Nonsampling Errors
- Nonresponse Adjustment
- Outliers
- Estimators
- Estimation
- **State level sample sizes and response rates**

Future Data Dissemination

- NASS is developing a new cloud-based data dissemination system. 2023 should be the year with a larger roll-out.
- The new database will replace Quick Stats. **There will be a new data taxonomy/structure.** Users will be able to do ad-hoc queries. All years of historic data are planned to be loaded to the new database.
- The new system will be API-driven.
- The data dictionary will be available.
- The new user interface will make it much easier to sort, query, and find data.

All Reports Available At

www.nass.usda.gov

For Questions

(800) 727-9540

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