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

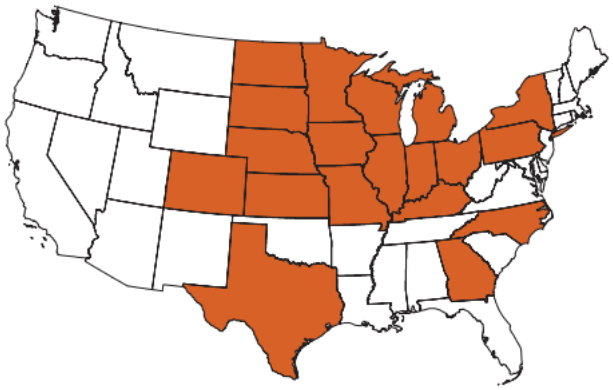


Fig. 1. States in the 2020 Soybean Chemical Use Survey

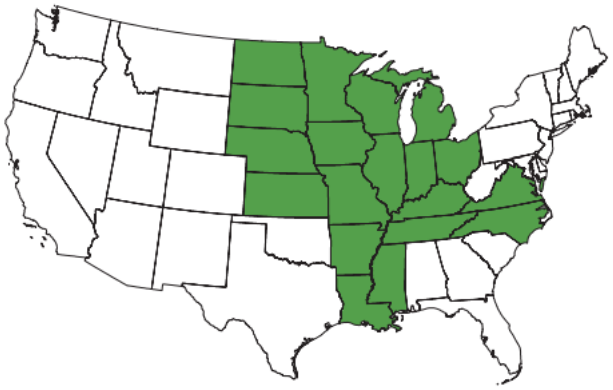


Fig. 1. States in the 2020 Vegetable Chemical Use Survey
(number of crops surveyed in state)

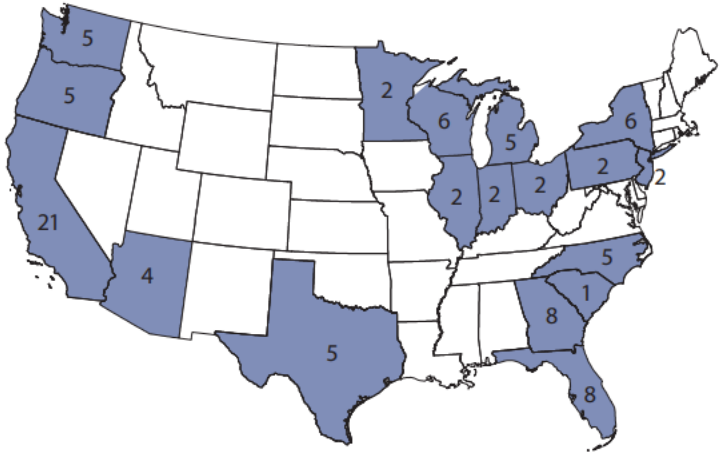
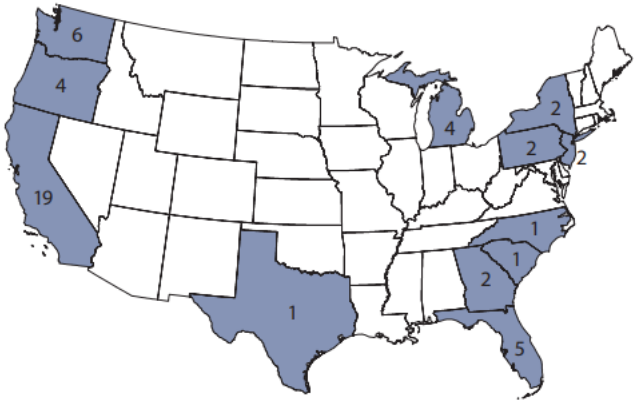


Fig. 1. States Included in the 2019 Fruit Chemical Use Survey
(number of crops surveyed in state)



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

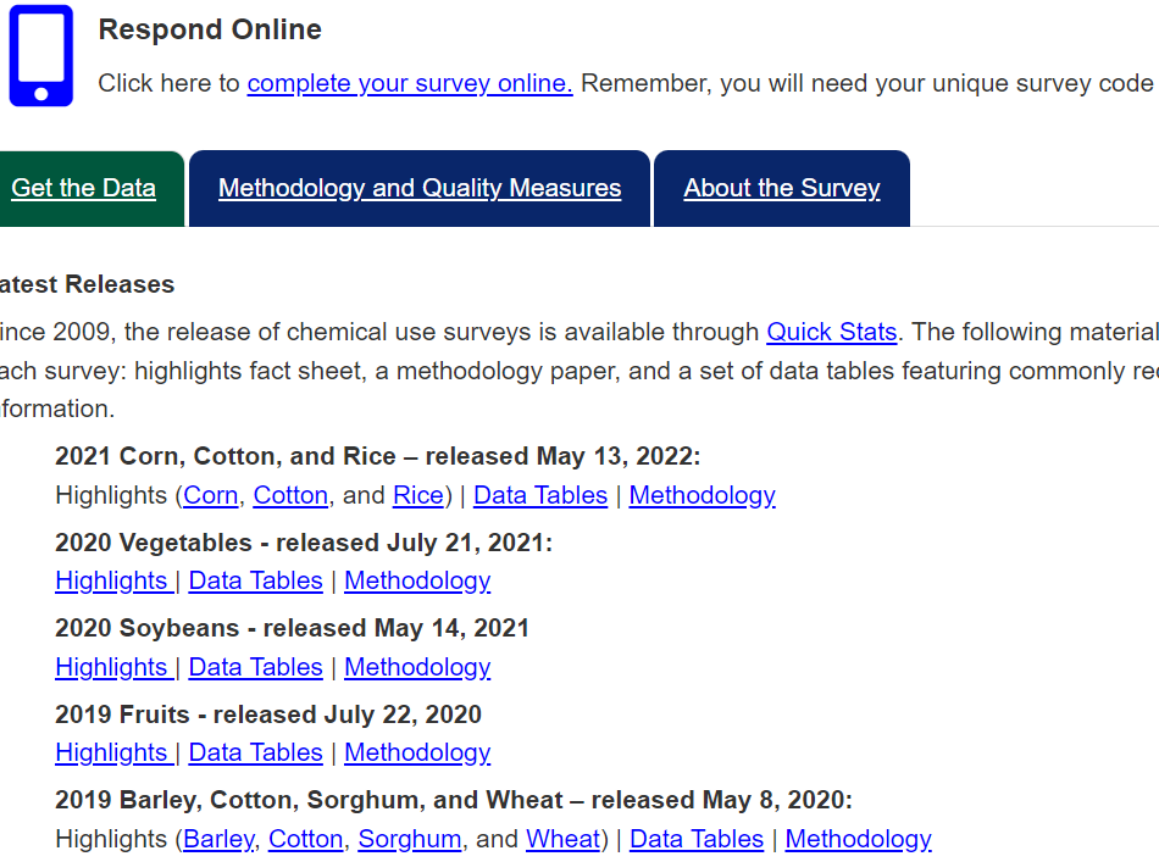
2020 Veg Chem Use Results

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



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 re 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

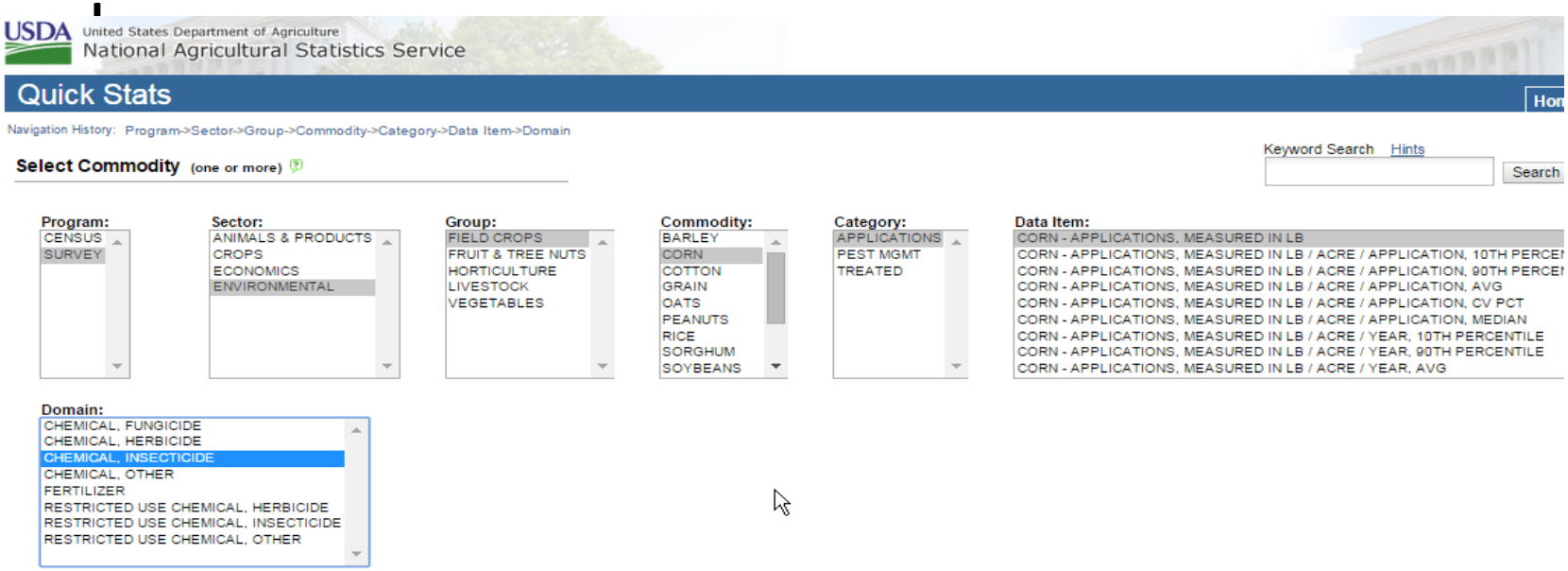
2020 Soybeans - released May 14, 2021
Highlights | Data Tables | Methodology

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

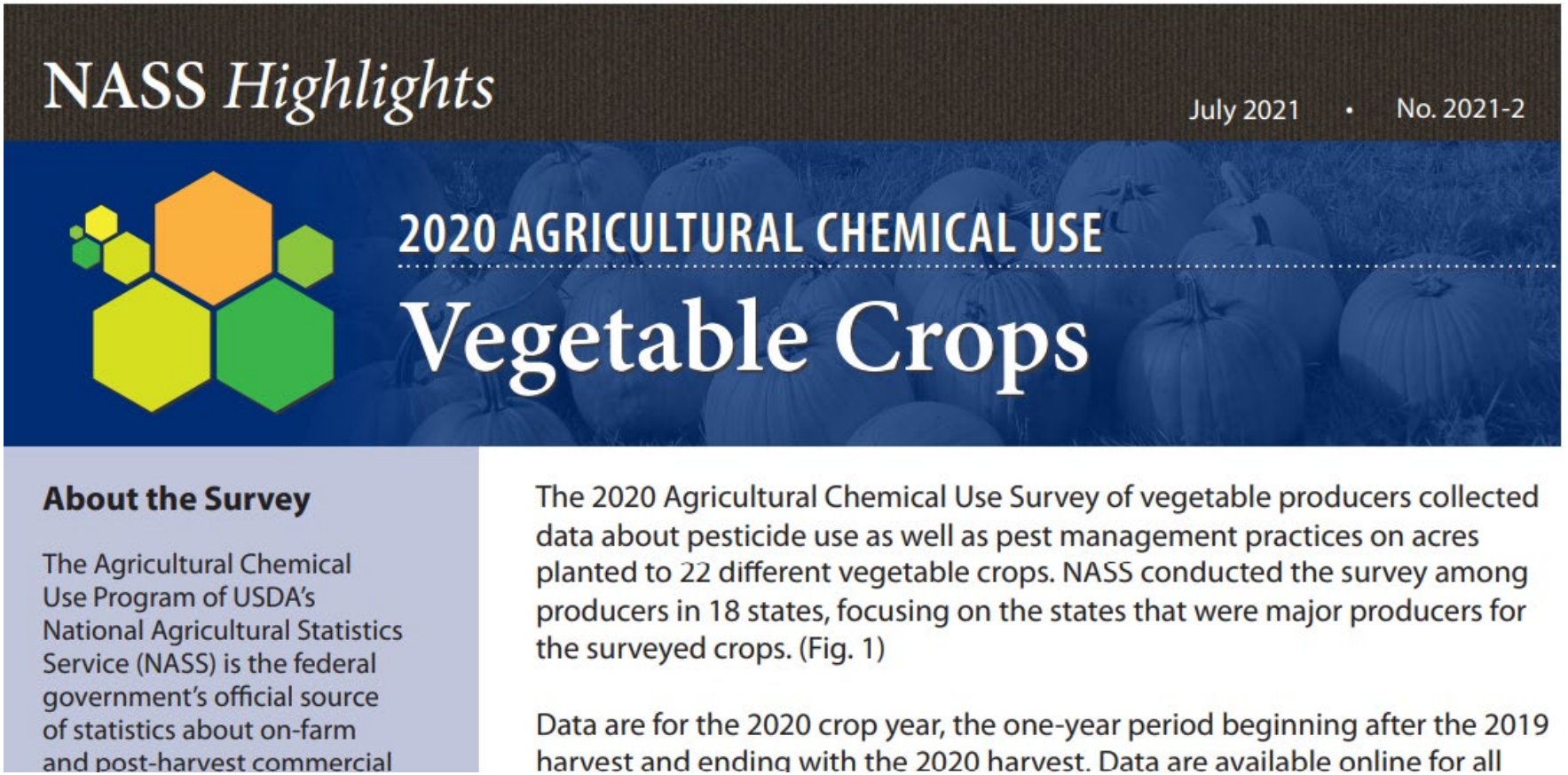
Quick Stats

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



Highlights

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



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
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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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