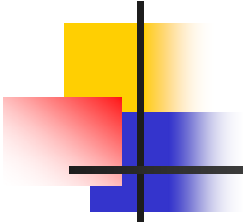


NASS ENVIRONMENTAL DATA PROGRAM

STAC Presentation

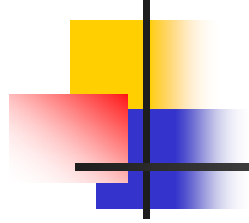
May 1, 2007

NASS Environmental Program



- Why we do what we do
- What we do
- How we do what we do

Why we do what we do – Program History



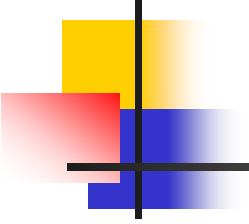
- Program Began in 1990 with Department Water Quality & Food Safety Initiatives
- FQPA, FIFRA, chemical risk assessments
- Support relevant research of cooperative gov't agencies and universities.



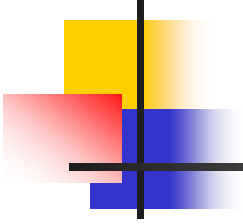
Why we do what we do – Changes to Environmental Program

- Program areas have grown from 3 to 6
- Program Areas: Field Crops, Fruit, Vegetables, Nursery/Floriculture, Livestock, and Post-Harvest
- New data collected includes Pest Management
- Dropped Nuts from Fruit and Nut Chemical Use Surveys

What we do now – Field Crops

- 
- Fertilizer, Pesticide, and Pest Management data collected for every survey
 - Field Level data collected
 - Core Crops surveyed every other year
 - Even Year crop years (2006): Soybeans, Wheat (Winter, Durum, Other Spring)
 - Odd Year crop year (2007): Corn, Cotton (Upland), Potatoes

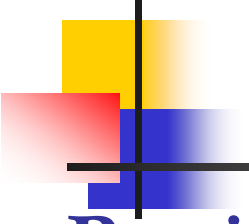
What we do now – Field Crops cont.



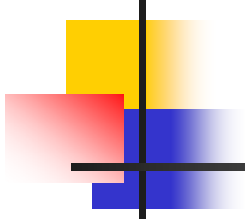
Expanded crop data collected in conjunction with ERS (Economic Research Service, USDA)

- 2006: Soybeans and organic soybeans
- 2007: Cotton and apples
- More detailed management and financial data collected

What we do now – Fruits and Vegetables

- 
-
- Pesticide and Pest Management data collected for every survey
 - Fertilizer data collected every other survey (2002, 2003, 2006, 2007, etc)
 - Enterprise/Whole Farm data collected
 - Vegetable crops surveyed in even years (2006)
Fruit crops surveyed in odd years (2005)

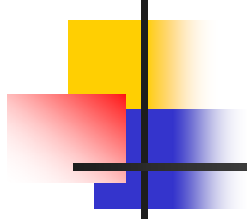
What we do now – Fruits and Vegetables



Fruit crops (2005) include:

- Apples, Apricots, **Avocados**, Blackberries, Blueberries, Sweet Cherries, Tart Cherries, Dates, Figs, Grapefruit, Grapes, Kiwifruit, Lemons, Nectarines, **Olives**, Oranges, Peaches, Pears, Plums, Prunes, Raspberries, Tangelos, Tangerines, and Temples

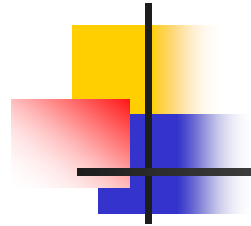
What we do now – Fruits and Vegetables



Vegetable crops (2006) include:

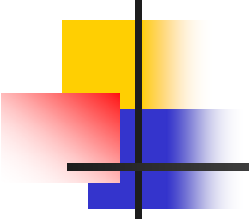
- Asparagus, Snap Beans (FM), Snap Beans (PR), Lima Beans (PR), Broccoli, Cabbage (FM), **Cantaloupe**, Carrots (FM), Carrots (PR), Cauliflower, Celery, Sweet Corn (FM), Sweet Corn (PR), Cucumbers (FM), Cucumbers (PR), Garlic, **Honeydew**, Head Lettuce, Other Lettuce, Dry Onions, Green Peas (PR), Bell Peppers, Pumpkins, Spinach (FM), Squash, **Strawberries**, Tomatoes (FM), Tomatoes (PR), **Watermelons**

What we do now – Nursery/Floriculture

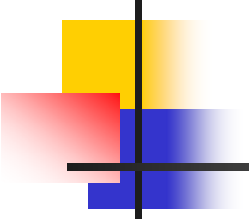


- Every three years (reference years 2006, 2003, and 2000)
- Pesticide and Pest Management data collected
- Crops: **Nursery** (Deciduous Shade Trees, Deciduous Flowering Trees, Broadleaf Evergreen, Coniferous Evergreen, Deciduous Shrubs, Transplants for Commercial Vegetable and Strawberry Production, Nursery Propagation or Lining-Out Stock, Fruit and Nut Plants, Christmas Trees, Palms, Ornamental Grasses, Other Woody Ornamentals and Vines); **Floriculture** (Bedding Plants, Flowering Plants, Cut Flowers, Foliage Plants, Floriculture Propagation Material, Cut Cultivated Greens, Herbaceous Perennials); **Non-production Area**

What we do now – Livestock

- 
- Pesticides applied to Livestock and Facilities
 - NAHMS (National Animal Health Monitoring System) survey determines which livestock surveyed
 - Conducted for APHIS (Animal Plant Health Inspection Service)
 - Past Livestock surveyed: Swine, Cattle, Sheep, Dairy
 - Next Livestock to be surveyed: Dairy Cattle and Dairy Facilities (2007)

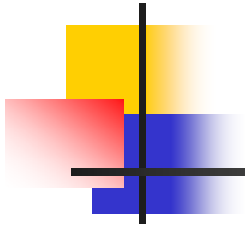
What we do now – PostHarvest

- 
- Pesticide and Pest Management data collected for every survey
 - Survey of Packers, Processing Facilities, Off-farm Storage Facilities, etc. – Not Farmers.
 - Historic crops: Apples, Pears, Wheat, Oats, Soybeans, Corn, Peanuts, Rice, Sorghum, Oranges, Potatoes
 - March 28, 2007 Release: Oats and Potatoes

That's an overview of
What We Do

Now let's look at
How We Do It
for Field Crops,
Fruit, and Vegetables

How do we do it – COVERAGE Goals

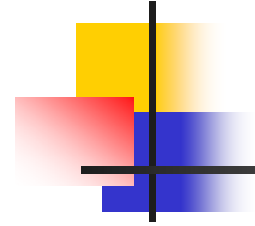


With a fixed amount of \$, the goal is to have data for as many commodities with as much acreage coverage of those commodities as possible.

The Coverage goal is 80-85 percent of planted (usually) acres. This helps determine which States are surveyed.

Other considerations include State projects, overlapping of States, and partnership needs

How do we do it – DATA Goals



■ Crop-Specific Fertilizer and Pesticide Usage statistics

1. Area Applied

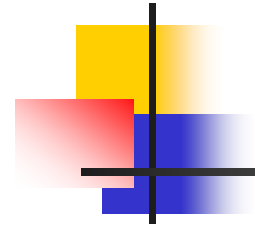
2. # of Applications

3. Rate Per Application

4. Rate Per Crop Year

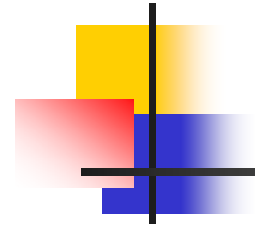
5. Total Amount Applied

How do we do it – DATA Goals



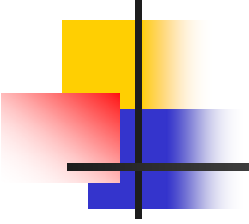
- Fertilizer statistics for N, P, K, and S
- Pesticide statistics at the Active Ingredient and pesticide class levels
 - Only area applied and total amount applied for class levels
- Pest Management practices (IPM) statistics
 - Percent of farms and percent of acres using a specific practice
 - Crop-specific for Field Crops
 - Entire operation for Fruit & Vegetable Crops

How we do it – Data Collection cont.



- Phase 2 (Field Crops, Vegetables, and Fruit)
 - Personal Enumeration via NASS Field Offices (FO)
 - Collect all data from farmer (data-keepers, such as bookkeepers/accountants, pesticide applicators, etc)
 - Pesticide data collected at Product level

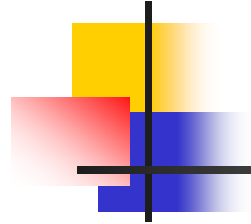
How we do it – Editing

- 
-
- Data collected is keyed and edited in Field Offices (FO)
 - HQ and FOs review edit and analysis
 - Within Record edit and analysis
 - Across Record edit and analysis
 - Individual Data Analysis System (IDAS)

How we do it – Analysis/Summary

- 
- HQ attaches expansion factors (weights) and summarizes data
 - HQ review summarized data (historical comparisons)
 - Confidentiality and Precision constraints
 - Must have minimum # of reports
 - Secondary suppression
 - HQ creates Publication

NASS Chemical Use Data



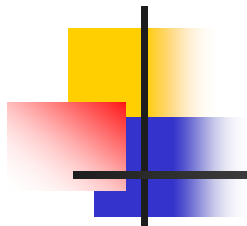
■ Strengths

- Statistically defensible
- Variety of commodities
- Confidentiality of growers
- Successful cooperative agreements
- Public Domain data

■ Weaknesses

- Incomplete coverage (not annual, not all commodities)
- Published by Political boundaries (State level data)
- Fall data is released following year

Chemical Usage Data Tables



Corn: Fertilizer Use by State, 2005
Percent of Acres Treated and Total Applied

State	Planted Acreage	Percent of Acres Treated and Total Applied							
		Nitrogen		Phosphate		Potash		Sulfur	
	<i>1,000 Acres</i>	<i>Percent</i>	<i>Mil. lbs.</i>	<i>Percent</i>	<i>Mil. lbs.</i>	<i>Percent</i>	<i>Mil. lbs.</i>	<i>Percent</i>	<i>Mil. lbs.</i>
CO	1,100	89	126.2	63	24.4	21	4.2	33	3.3
GA	270	98	38.7	86	16.1	87	24.5	53	2.5
IL	12,100	98	1,728.3	84	780.4	84	1,160.5	4	14.9
IN	5,900	100	869.3	93	420.2	88	648.2	14	8.1
IA	12,800	92	1,653.2	70	579.0	71	762.3	5	4.5
KS	3,650	97	482.1	81	112.7	26	34.9	17	5.3
KY ¹	1,250	98	210.5	78	75.5	77	86.9		
MI	2,250	97	277.8	88	89.6	81	148.4	21	3.7
MN	7,300	94	953.9	86	378.1	77	400.3	9	8.2
MO	3,100	99	489.5	79	149.5	78	180.1	19	10.0
NE	8,500	99	1,162.5	75	237.3	22	38.8	30	35.0
NY ¹	990	94	62.2	88	33.2	79	34.9		
NC	750	97	90.5	74	25.5	86	53.1	18	1.1
ND	1,410	99	169.3	94	58.8	38	13.3	8	0.9
OH	3,450	99	551.7	87	224.9	76	264.5	12	3.2
PA	1,350	88	108.4	64	40.7	58	37.4	6	3.0
SD	4,450	95	477.7	79	154.2	37	41.9	13	5.5
TX	2,050	94	282.0	81	73.9	28	10.6	29	6.9
WI	3,800	93	380.9	84	118.8	84	191.7	22	9.1
Total	76,470	96	10,114.7	81	3,592.8	65	4,136.5	13	125.9

¹ Insufficient reports to publish data for one or more of the fertilizer primary nutrients.

**Corn: Fertilizer Primary Nutrient Applications,
Program States and Total, 2005**

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	<i>1,000 Acres</i>	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>Mil. lbs</i>
Colorado	1,100					
Nitrogen		89	1.9	67	129	126.2
Phosphate		63	1.1	33	35	24.4
Potash		21	1.6	12	19	4.2
Sulfur		33	1.3	7	9	3.3
Georgia	270					
Nitrogen		98	2.0	74	147	38.7
Phosphate		86	1.3	54	70	16.1
Potash		87	1.1	98	104	24.5
Sulfur		53	1.1	15	18	2.5
Illinois	12,100					
Nitrogen		98	1.8	83	146	1,728.3
Phosphate		84	1.0	73	76	780.4
Potash		84	1.0	111	114	1,160.5
Sulfur		4	1.0	31	31	14.9
Indiana	5,900					
Nitrogen		100	2.2	67	147	869.3
Phosphate		93	1.4	56	77	420.2
Potash		88	1.1	111	124	648.2
Sulfur		14	1.0	10	10	8.1

**Corn: Planted Acreage, Pesticide,
Percent of Area Receiving Applications and Total Applied,
Program States and Total, 2005**

State	Planted Acreage	Area Receiving and Total Applied							
		Herbicide		Insecticide		Fungicide		Other	
	<i>1,000 Acres</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>	<i>Percent</i>	<i>1,000 lbs</i>
CO	1,100	90	1,494	24	252				
GA	270	91	495	14	25				
IL ¹	12,100	99	30,967	52	1,426				
IN ¹	5,900	97	14,136	41	722				
IA	12,800	96	24,726	11	187				
KS	3,650	87	7,436	11	89				
KY	1,250	100	3,187	18	26				
MI ¹	2,250	99	5,145	14	153				
MN	7,300	100	10,361	12	214				
MO	3,100	96	7,707	11	41				
NE	8,500	98	18,416	20	456				
NY	990	96	2,325	21	146				
NC	750	98	1,669	17	130				
ND ¹	1,410	99	1,094						
OH ¹	3,450	99	9,322	9	215				
PA	1,350	97	3,346	21	154				
SD	4,450	100	6,036	12	239				
TX	2,050	94	3,344	24	236				
WI	3,800	97	6,369	22	134				
Total ¹	76,470	97	157,575	23	4,849	*	93		

* Applied on less than one percent of acres.

¹ Insufficient reports to publish data for one or more pesticide classes.

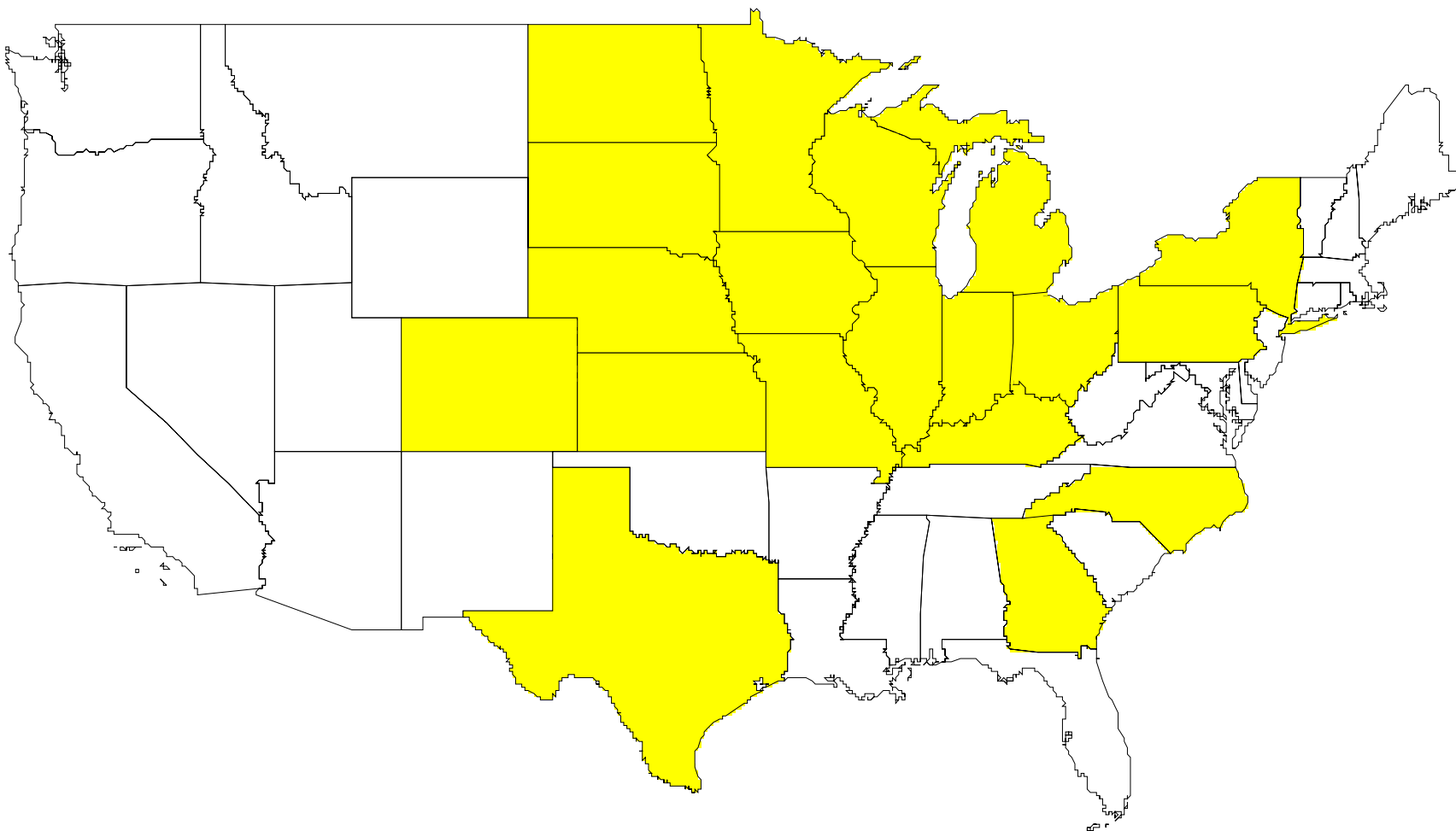
**Corn: Agricultural Chemical Applications,
Program States, 2005¹**

Active Ingredient	Area Applied	Appli- cations	Rate per Application	Rate per Crop Year	Total Applied
	<i>Percent</i>	<i>Number</i>	<i>Pounds per Acre</i>	<i>Pounds per Acre</i>	<i>1,000 lbs</i>
Herbicides					
2,4-D, 2-EHE	3	1.1	0.450	0.474	1,160
2,4-D, BEE	*	1.0	0.339	0.339	126
2,4-D, dieth sal	*	1.0	0.451	0.451	25
2,4-D, dimeth. salt	3	1.0	0.352	0.360	799
2,4-D, isoprop. salt	1	1.3	0.068	0.087	38
Acetochlor	23	1.0	1.645	1.661	29,802
Alachlor	1	1.0	1.747	1.765	1,562
Ametryn	*	1.0	0.857	0.857	18
Atrazine	66	1.1	1.028	1.133	57,390
Bromoxynil	1	1.0	0.243	0.243	199
Bromoxynil heptanoat	*	1.0	0.250	0.260	56
Bromoxynil octanoate	*	1.0	0.251	0.257	85
Carfentrazone-ethyl	*	1.0	0.013	0.013	5
Clopyralid	5	1.0	0.110	0.110	449
Cyanazine	*	1.0	1.337	1.337	389
Dicamba	1	1.0	0.137	0.142	154

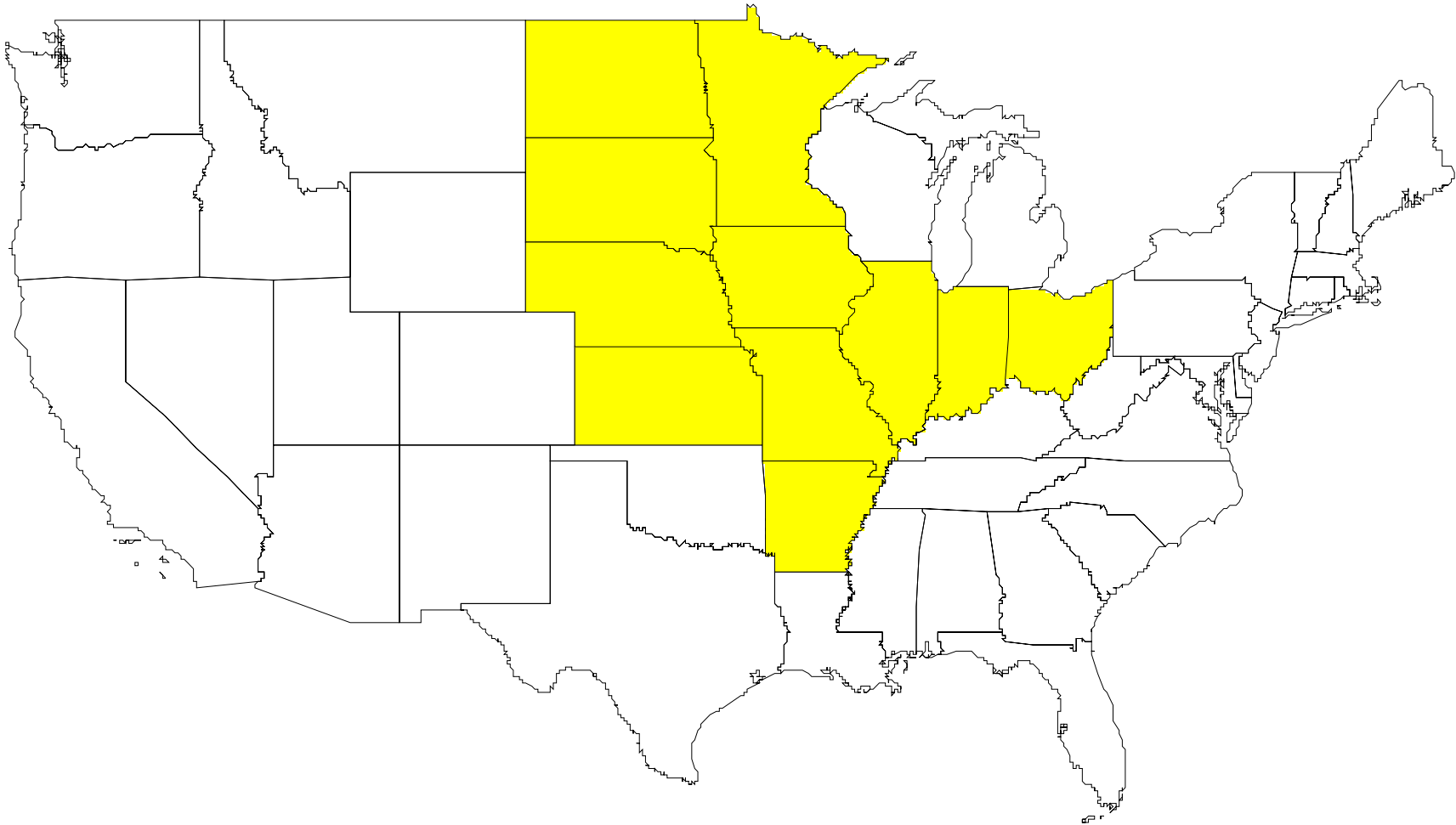
**Corn: Rate per Crop Year Distribution,
Program States, 2005¹**

Active Ingredient	10th Percentile	Median	90th Percentile	Mean	cv(%)
	<i>lbs per Acre</i>	<i>lbs per Acre</i>	<i>lbs per Acre</i>	<i>lbs per Acre</i>	
Herbicides					
2,4-D, 2-EHE	0.234	0.462	0.950	0.474	8
2,4-D, dimeth. salt	0.118	0.336	0.475	0.360	9
Acetochlor	0.900	1.750	2.430	1.661	2
Alachlor	0.625	1.875	2.500	1.765	7
Atrazine	0.469	1.000	1.938	1.133	2
Clopyralid	0.056	0.117	0.156	0.110	3
Dicamba	0.100	0.137	0.231	0.142	7
Dicamba, Digly Salt	0.094	0.125	0.406	0.203	10
Dicamba, Dimet. salt	0.063	0.125	0.250	0.156	9
Dicamba, Pot. salt	0.206	0.406	0.481	0.354	6
Dicamba, Sodium salt	0.063	0.109	0.138	0.105	5
Diflufenzopyr-sodium	0.025	0.043	0.053	0.041	5
Dimethenamid-P	0.319	0.850	0.984	0.747	4
Flufenacet	0.120	0.400	0.577	0.378	9
Flumetsulam	0.023	0.043	0.058	0.045	10
Foramsulfuron	0.015	0.028	0.033	0.026	10

ARMS II Corn States

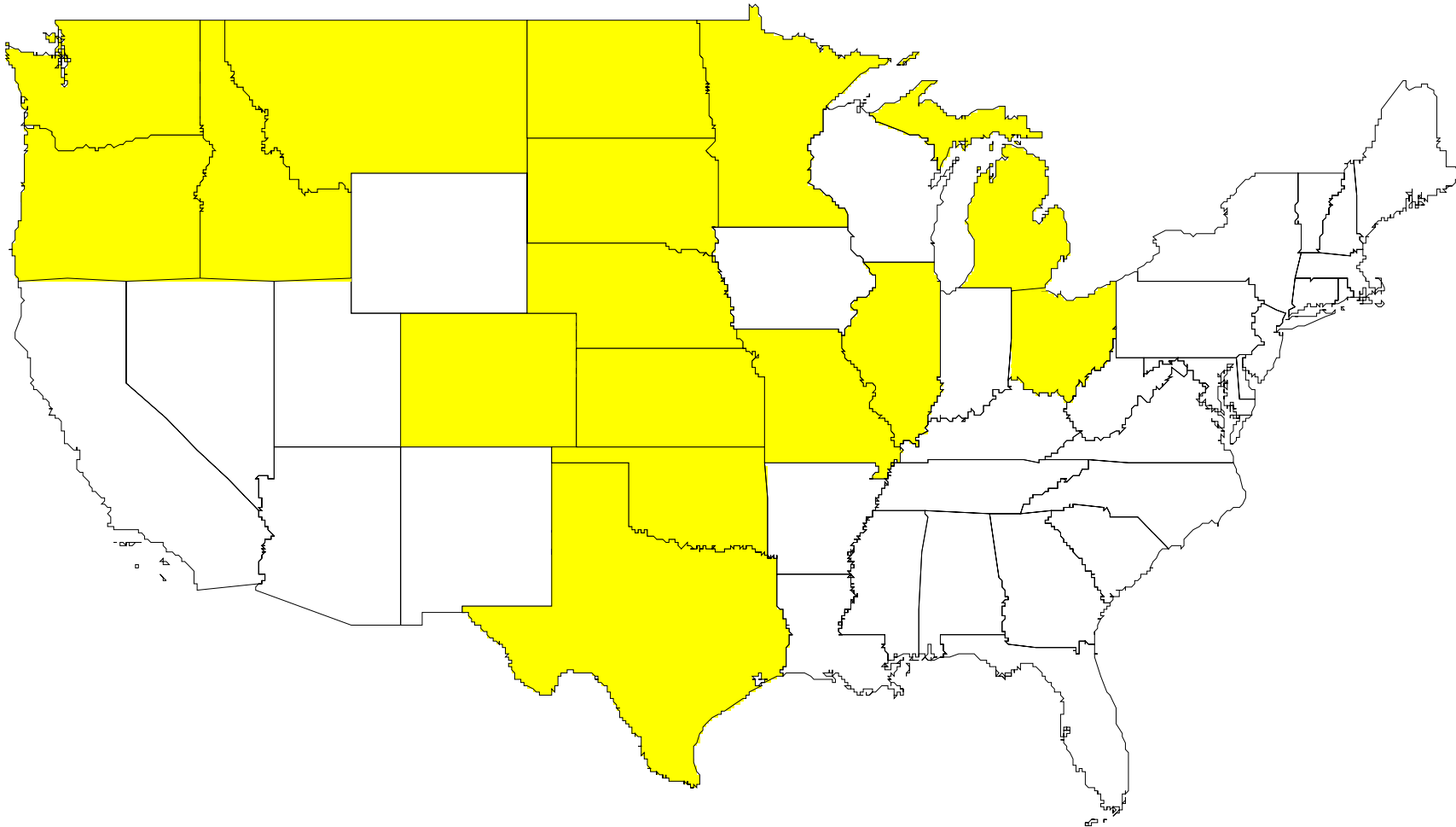


ARMS II Soybean States



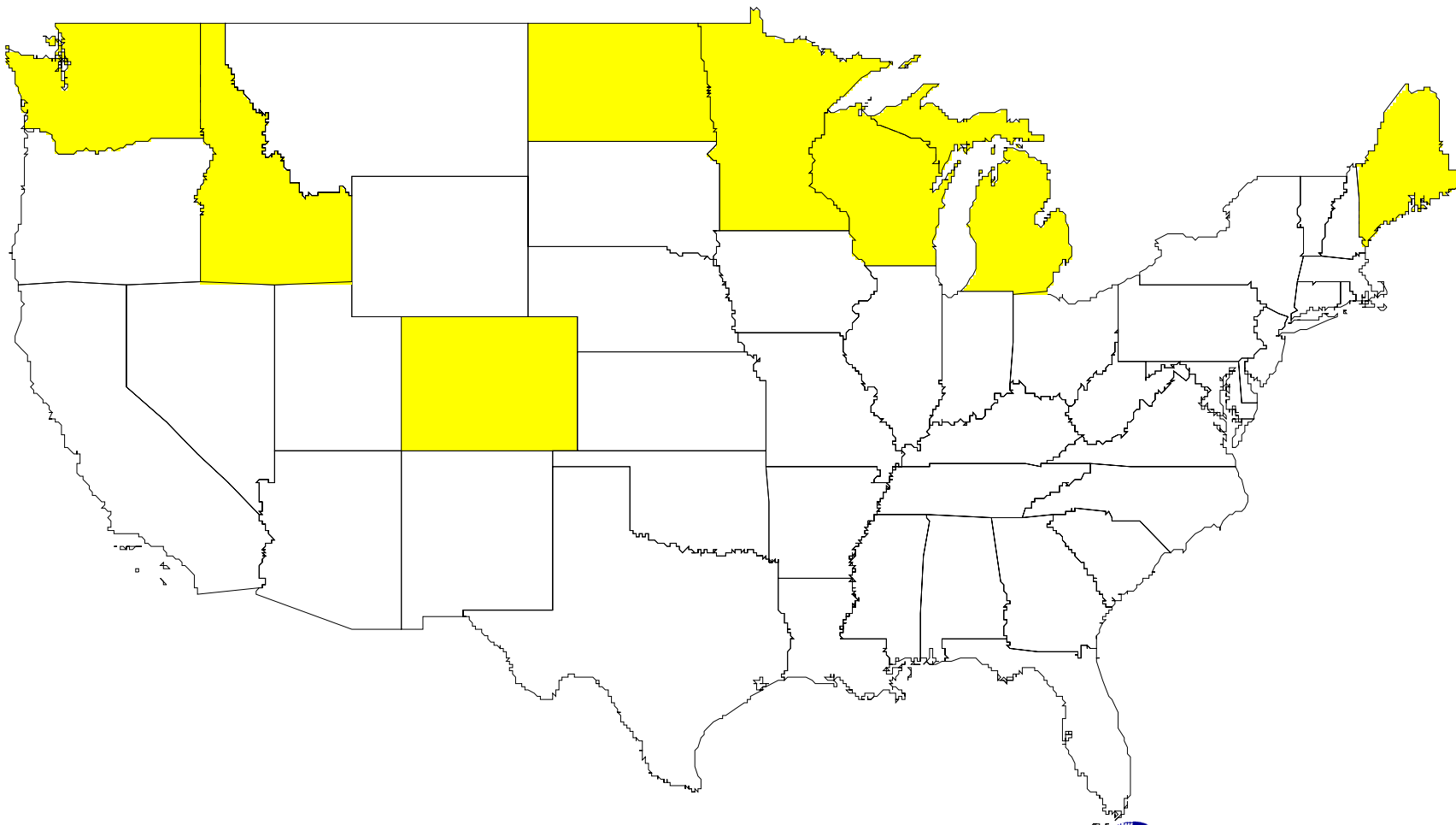
National Agricultural
Statistics Service

ARMS II All Wheat States



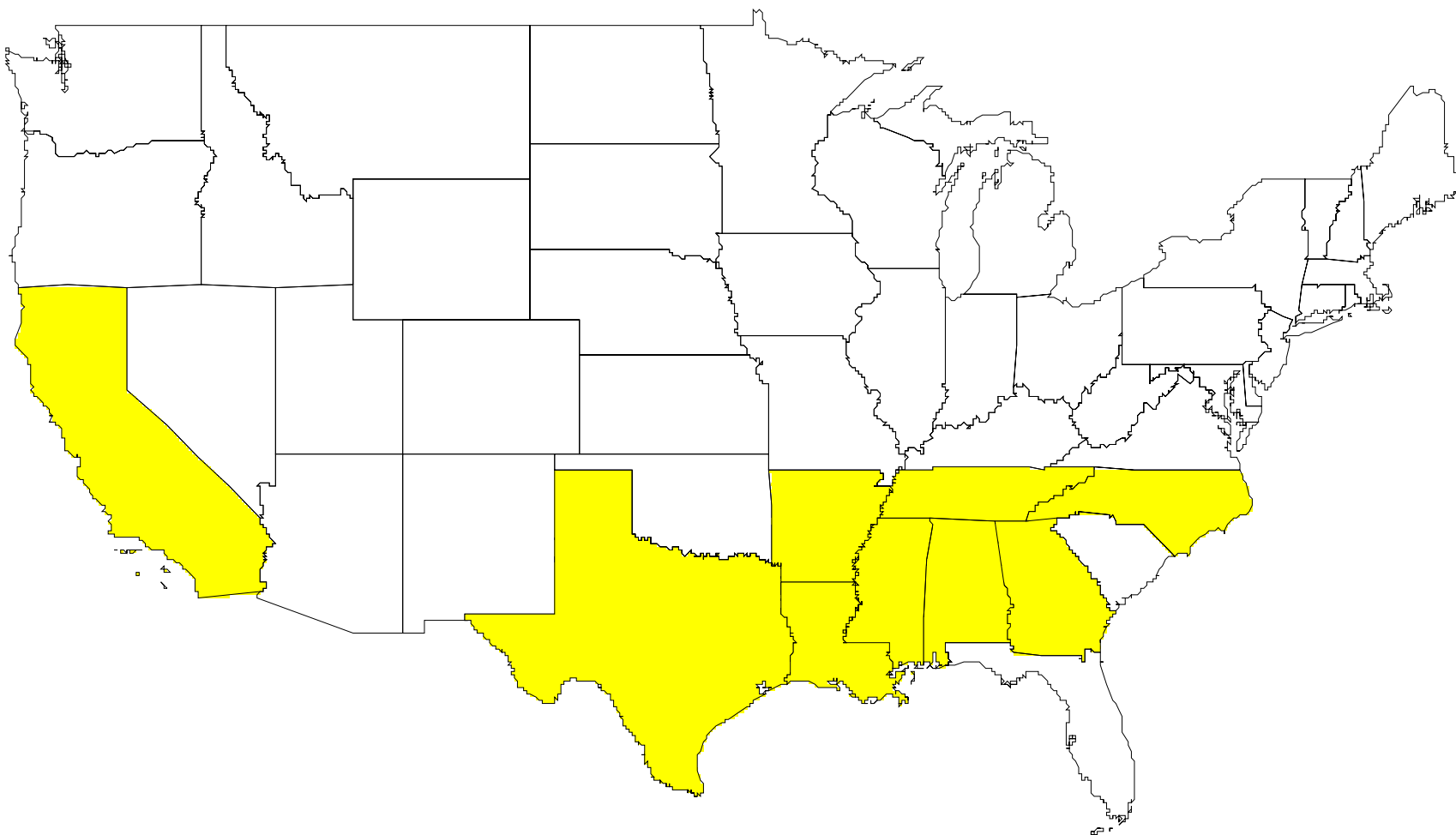
National Agricultural
Statistics Service

ARMS II Fall Potato States



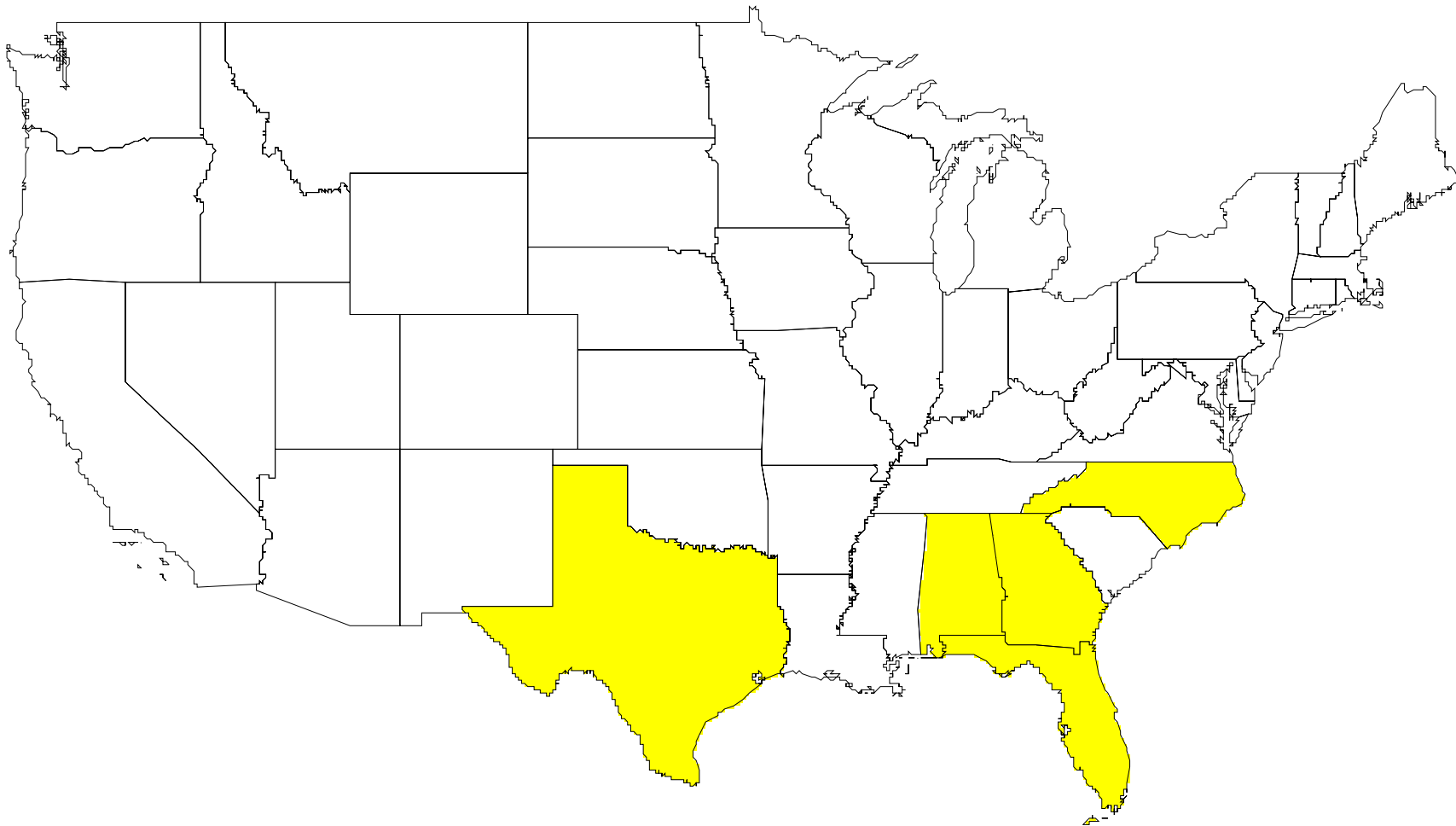
National Agricultural
Statistics Service

ARMS II Upland Cotton States

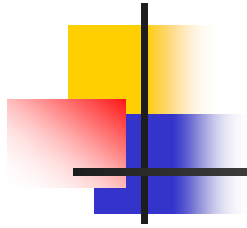


National Agricultural
Statistics Service

ARMS II Peanut States



National Agricultural
Statistics Service



Any Questions?

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