

Agricultural Pesticide Use in Florida: A Summary, 2007-2009¹

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Introduction

Commercial farms in Florida span over nine million acres and earn annual profits of more than \$7.5 billion. High temperatures and heavy rainfall create heavy pest pressure that leads the majority of Florida farmers to rely upon pesticides for high-yielding, cost-effective crop production (FDACS 2010). Statewide pesticide usage data from 2007 to 2009 for 14 crops and 169 active ingredients (66 insecticides, 46 fungicides, 36 herbicides, and 21 other) were recently released by the Florida Department of Agriculture and Consumer Services (FDACS 2010). Table 1 lists the top ten pesticides used in Florida based on the number of pounds applied and the crops associated with each use. Tables 2, 3, 4, and 5 specifically list the most common fungicides, insecticides, herbicides, and other pesticides applied by total pounds of applied active ingredient, respectively. The annual use rates and crop usage are also included in each table. "Other" pesticides refer to active ingredients that are characterized as other than herbicides, insecticides, or fungicides; these include chemicals such as fumigants, miticides, and postharvest sanitizers.

The top ten applied pesticides by total pounds of active ingredient in Florida include (1) petroleum distillate, (2) methyl bromide, (3) chloropicrin, (4) glyphosate, (5) copper hydroxide, (6) aldicarb, (7) chlorothalonil, (8) mancozeb, (9) diuron, and (10) carbaryl (Table 1). Copper hydroxide was the most applied fungicide in pounds of active ingredient, followed by chlorothalonil, mancozeb, maneb, captan, thiram, mono-potassium salt, thiophanate methyl, fenbuconazole, and azoxystrobin (Table 2). The most applied insecticide in pounds of active ingredient was petroleum distillate, followed by aldicarb, carbaryl, endosulfan, sulfur, methomyl, chlorpyrifos, dimethoate, fenpropathrin, and imidacloprid (Table 3). Glyphosate ranked number one for the most applied herbicide in pounds of active ingredient, followed by diuron, simazine, sulfosate, bromacil, triclopyr, pendimethalin, atrazine, paraquat, and 2,4-D iso. salt (Table 4). The fumigant methyl bromide was the leading "other" pesticide applied, followed by the fumigants chloropicrin and dichloropicrin, the sanitizer hydrogen peroxide, and the miticide spiroadiclofen (Table 5).

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Reference

Florida Department of Agriculture and Consumer Services. *Summary of Agricultural Pesticide Use in Florida: 2007-2009*, October 2010. Accessed May 25, 2011. http://www.flaes.org/pdf/PUI_narrative_2010.pdf.

Table 1. Top Ten Pesticides Applied in Florida, 2007–2009 ¹		
Active Ingredient	Total lbs a.i Applied	Crop Usage
Petroleum Distillate	25,647,600	Snap beans, sweet corn, cucumber-fresh, bell pepper, squash, tomato, watermelon
Methyl Bromide	5,940,200	Bell pepper, squash, strawberry, watermelon
Chloropicrin	2,117,900	Cabbage, bell pepper, squash, strawberry, tomato, watermelon
Glyphosate, iso. salt	1,532,800	Snap beans, sweet corn, cucumber-fresh, cucumber-pickle, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
Copper hydroxide	1,176,500	Snap beans, cabbage, cucumber-fresh, cucumber-pickle, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
Aldicarb	869,100	Snap beans, grapefruit, orange, tangelo, tangerine
Chlorothalonil	800,900	Snap beans, cabbage, sweet corn, cucumber-fresh, cucumber-pickle, orange, bell pepper, squash, strawberry, tomato, watermelon
Mancozeb	639,500	Snap beans, cabbage, sweet corn, cucumber-fresh, orange, squash, tomato, watermelon
Diuron	512,300	Grapefruit, orange, tangelo, tangerine
Carbaryl	372,700	Snap beans, sweet corn, cucumber-fresh, cucumber-pickle, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
¹ Crops surveyed: beans (snap), cabbage, corn (sweet), cucumber (fresh), cucumber (pickles), grapefruit, orange, pepper (sweet-bell), squash, strawberry, tangelo, tangerine, tomato, and watermelon.		

Table 2. Top Ten Fungicides Applied in Florida, 2007-2009¹		
Active Ingredient	Total lbs a.i Applied	Crop Usage
Copper hydroxide	1,176,500	Snap beans, cabbage, cucumber-fresh, cucumber-pickle, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
Chlorothalonil	800,900	Snap beans, cabbage, sweet corn, cucumber-fresh, cucumber-pickle, orange, bell pepper, squash, strawberry, tomato, watermelon
Mancozeb	639,500	Snap beans, cabbage, sweet corn, cucumber-fresh, orange, squash, tomato, watermelon
Maneb	256,700	Cabbage, sweet corn, cucumber-fresh, cucumber-pickle, bell pepper, squash, strawberry, watermelon
Captan	221,400	Strawberry, cucumber-fresh, grapefruit, orange, tangelo, tangerine
Thiram	92,800	Strawberry
Mono-potassium salt	45,800	Grapefruit, orange, tangelo, tangerine
Thiophanate methyl	27,500	Snap beans, cucumber-fresh, cucumber-pickle, orange, squash, strawberry, tangerine, tomato, watermelon
Fenbuconazole	15,400	Grapefruit, orange, tangelo, tangerine
Azoxystrobin	10,700	Snap beans, cabbage, sweet corn, cucumber-fresh, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon

¹Crops surveyed: beans (snap), cabbage, corn (sweet), cucumber (fresh), cucumber (pickles), grapefruit, orange, pepper (sweet-bell), squash, strawberry, tangelo, tangerine, tomato, and watermelon.

Table 3. Top Ten Insecticides Applied in Florida, 2007-2009¹		
Active Ingredient	Total lbs a.i Applied	Crop Usage
Petroleum distillate	25,647,600	Snap beans, sweet corn, cucumber-fresh, bell pepper, squash, tomato, watermelon
Aldicarb	869,100	Snap beans, grapefruit, orange, tangelo, tangerine
Carbaryl	372,700	Snap beans, sweet corn, cucumber-fresh, cucumber-pickle, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
Endosulfan	171,300	Snap beans, cabbage, sweet corn, cucumber-fresh, bell pepper, squash, strawberry, tomato, watermelon
Sulfur	126,100	Snap beans, cabbage, cucumber-fresh, squash, strawberry, watermelon
Methomyl	127,200	Snap beans, cabbage, sweet corn, cucumber-fresh, bell pepper, squash, strawberry, tomato, watermelon
Chlorpyrifos	118,600	Cabbage, sweet corn, grapefruit, orange, bell pepper, tangelo, tangerine, squash, strawberry
Dimethoate	118,300	Snap beans, cucumber-fresh, grapefruit, orange, tangelo, tangerine, tomato, watermelon
Fenprothrin	52,400	Grapefruit, orange, strawberry, tangelo, tangerine, tomato
Imidacloprid	48,900	Snap beans, cabbage, cucumber-fresh, grapefruit, orange, squash, tangelo, tangerine, tomato

¹Crops surveyed: beans (snap), cabbage, corn (sweet), cucumber (fresh), cucumber (pickles), grapefruit, orange, pepper (sweet-bell), squash, strawberry, tangelo, tangerine, tomato, and watermelon.

Table 4. Top Ten Herbicides Applied in Florida, 2007-2009¹		
Active Ingredient	Total lbs a.i Applied	Crop Usage
Glyphosate, iso. salt	1,532,800	Snap beans, sweet corn, cucumber-fresh, cucumber-pickle, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
Diuron	512,300	Grapefruit, orange, tangelo, tangerine
Simazine	313,400	Grapefruit, orange, tangelo, tangerine
Sulfosate	166,200	Grapefruit, orange, tangelo, tangerine
Bromacil	73,700	Grapefruit, orange, tangelo, tangerine
Triclopyr	71,300	Grapefruit, orange, tangerine
Pendimethalin	49,700	Snap beans, cabbage, sweet corn, grapefruit, orange, bell pepper, squash, tangelo, tangerine, tomato, watermelon
Atrazine	36,400	Sweet corn, orange
Paraquat	29,900	Cabbage, grapefruit, orange, bell pepper, squash, strawberry, tangelo, tangerine, tomato, watermelon
2, 4-D, iso. salt	25,400	Grapefruit, orange, tangelo, tangerine

¹Crops surveyed: beans (snap), cabbage, corn (sweet), cucumber (fresh), cucumber (pickles), grapefruit, orange, pepper (sweet-bell), squash, strawberry, tangelo, tangerine, tomato, and watermelon.

Table 5. Top Five Other Pesticides Applied in Florida, 2007-2009¹		
Active Ingredient	Total lbs a.i Applied	Crop Usage
Methyl Bromide	5,940,200	Bell pepper, squash, strawberry, watermelon
Chloropicrin	2,117,900	Cabbage, bell pepper, squash, strawberry, tomato, watermelon
Dichloropicrin	60,700	Cabbage, bell pepper, strawberry, tomato, watermelon
Hydrogen peroxide	43,000	Cucumber-fresh, grapefruit, orange, bell pepper, tangelo, tangerine, strawberry
Spirodiclofen	11,000	Grapefruit, orange, tangelo, tangerine

¹Crops surveyed: beans (snap), cabbage, corn (sweet), cucumber (fresh), cucumber (pickles), grapefruit, orange, pepper (sweet-bell), squash, strawberry, tangelo, tangerine, tomato, and watermelon.