

**Minor Crop Farmer Alliance
Carbaryl Case Study
Use and Usage Data for Citrus and Blueberry
Florida**

Introduction:

Florida Fruit and Vegetable Association, in collaboration with the Minor Crop Farmer Alliance, is developing use and usage information for specific counties in Florida for the insecticide Carbaryl (1-naphthyl N-Methylcarbamate). This use and usage information for the crops Blueberry and Citrus along with geospatial information associated with farm location will be used to refine the risk profiles associated with use of this insecticide as regards listed endangered and threatened species in Florida. The Environmental Protection Agency’s (“EPA’s) Office of Pesticide Programs is required to consult with the US Fish and Wildlife Service and National Marine Fisheries Service (collectively “the Services”) if there is a potential adverse effect to any Species (or its designated habitat) listed under the US Endangered Species Act. The first step in this process is production of a Biological Evaluation (“BE”) of this potential risk under a framework developed by EPA and the Services. The Carbaryl BE was released by the EPA for public comment on March 17, 2020. This Florida data collection effort for the MCFA carbaryl case study is designed to determine if grower supplied information could be of value to the EPA and Services as the ESA risk assessment, consultation and risk mitigation processes take place. EPA, USDA and the Services provided information about the types and quality of information that can inform their assessments. MCFA considered that information in the development and design of the Case Study. The information collection is on a purely voluntary basis and not in response to any agency or department information collection request. The information developed will be presented at an MCFA sponsored public workshop to guide grower participation as pesticides are evaluated for endangered species impacts.

The use and usage information utilized in the current Carbaryl BE was developed from existing national data bases and was described in Appendix 1-4. The information for the crops of interest are extracted below.

Citrus (National Summary)

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied	Avg. Annual Total Acres Treated	% Applied by Air	Avg. Single AI Rate	Max Single Labeled Rate lb/a
Grapefruit	Kynetec (2013 – 2017)	FL, TX	10,000	3,000	0%	3.09	12.24
Lemons	CADPR (2012 -2016)	CA	2,000	<500	0%	4.44	12.24
Oranges	Kynetec (2013 – 2017)	CA, FL	40,000	20,000	15%	1.90	12.24
<i>Other citrus</i>	Not Surveyed at National Level						12.24

Blueberry (National summary)

Crop	Data Source	States with Reported Usage	Avg. Annual Pounds AI Applied	Avg. Annual Total Acres Treated	% Applied by Air	Avg. Single AI Rate	Max Single Labeled Rate lb/a
Blueberry	NASS (2015)	GA, MI, NC, NJ, OR	5,000	-	-	1.80	2.04

Citrus (State Summary)

Crop Citrus Crop Group 10	Data Source	State	Avg. Annual crop Acres Grown	Avg. Annual Pounds AI Applied	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Grapefruit	Kynetec (2013 – 2017)	Florida	40,000	2,000	0%	0%	3.09
		Texas	20,000	8,000	0%	45%	10%
Lemons	CADPR (2012 -2016)	California (80%)	50,000	2,000	0%	< 1%	< 1%
	Kynetec (2013 – 2017)	AZ, CA	60,000	Surveyed but No Usage Reported			
Oranges	Kynetec (2013 – 2017)	California	200,000	10,000	0%	10%	< 2.55
		Florida	400,000	20,000	0%	10%	< 5%
Tangerines	CADPR (2012 -2016)	California (80%)	60,000	10,000	Data withheld due to likely overcounting caused by reporting issue		
	Not Surveyed at National Level	Other States (20%)	Not Surveyed at National Level				
<i>Other citrus</i>	Not Surveyed at National Level						

Blueberry (State Summary)

Crop Berry and Small Fruit	Data Source	State	Avg. Annual crop Acres Grown	Avg. Annual Pounds AI Applied	Min. Annual PCT	Max. Annual PCT	Avg. Annual PCT
Blueberry	NASS (2011, 2015)	Michigan	19,300	1,000	0%	5%	< 2.5%
		New Jersey	1,627	< 500	0%	< 5%	< 1%
		AL, AR, CA, FL, GA, IN, ME, NY, NC, OR, WA	100,000	Surveyed but No Usage Reported			

Data Collection Methodology:

Utilizing production information from the 2017 USDA Census of Agriculture and the co-location information developed for the BE, specific counties in Florida will be selected to identify and collect information from Blueberry and Citrus producers in those counties (Shown in Table 1). The data collection form appended to this document will be utilized.

County	Citrus Production		Blueberry Production	
	Acres	Rank in State	Acres	Rank in State
Alachua	< 166	26	1,749	1
Charlotte	14,674	9	-	-
Collier	30,752	6	-	-
DeSoto	67,604	2	242	5
Hardee	44,347	5	85	13
Hendry	64,226	3	-	-
Hernando	437	24	196	10
Highlands	58,827	4	12	15
Hillsborough	3,038	16	695	3
Indian River	19,228	8	-	-
Lake	6,567	13	355	5
Manatee	14,658	10	14	14
Marion	986	21	611	4
Orange	1,130	19	200	9
Pasco	1,900	12	231	7
Polk	67,770	1	1,612	2
St. Lucie	20,562	7	-	-
Sumpter	-	-	205	8

Species of concern located in these counties were accessed through the USFWS IPaC database (<https://ecos.fws.gov/ipac/location>). The crosswalk for species and counties in Florida is provided in attachment 1.

Basic information to be collected include the same type of usage information reflected in the California pesticide use reporting database administered by the California Department of Pesticide Regulation. To establish trend information, growers will be asked to use their application records for each application of Carbaryl made over the past five calendar years to each of their farm locations.

More specific application equipment information will be requested to establish more accurate assessments for possible off target exposure that could result from the applications. If available from grower records more refined temporal information will be collected. (i.e., time of day, weather conditions, wind speed). Growers will also be asked to document any other application attributes that could impact potential off-site movement.

Since blueberry and citrus are permanent crops with limited options for crop rotation, field maps of the farms subject to the applications during each year covered will also be requested to establish physical parameters that could influence potential off-site movement.

Each farm location will be given a unique identifier to maintain data integrity and to allow individual application record analyses at the county specific level without being referenced back to specific users. Information on farm locations will be mapped at the county level but will not be directly referenced by owner/operator.

Carbaryl Biological Evaluation Case Study

For each of your unique farm locations in one of the counties shown in Table 1, please complete the following information. Each location will be assigned a unique identifier for analysis and reporting purposes. Please complete the information even if you have no use of Carbaryl.

Farm : _____ Your Farm Identifier: _____

County: _____

Location: Township: _____ Range: _____ Section: _____

Mailing Address: _____

Contact Person: _____

Telephone: _____ Email: _____

Commodity (Blueberry/Citrus): _____

Total Crop Acres: _____ Total Farm Acres: _____

If available, please provide a farm map showing production blocks if that is how application records are maintained. We are also going to try to provide commodity specific location information compiled at the county level. If you have access to this type of location information for you farm please provide in digital format for inclusion on county level maps.

Carbaryl Applications:

For each Carbaryl application made to the farm, during the periods identified, please provide the following information. This information needs to be compiled from archived records. If specific information is not available, please indicate by N/A. As part of the analysis we will be attempting to document any practices that would minimize off-site movement of the targeted applications. Please provide in the comments sections any specific practices or physical barriers that are in place in the farm to achieve reduction of off-site movement (wind breaks, field-edge buffer zones, drift control agents, farm level best management practices, *et. cetera*).

2019

Specific Farm Location (Your identifier): _____ Crop: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type (ground rig boom, ground rig granular, ground air blast, aerial): _____

Equipment Used (manufacturer, etc.) _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any) (spray drift reduction technologies, hedgerow planting, maintenance of riparian habitat, upwind applications to prevent off-site movement, etc.): _____

Conservation Practices to Limit Off-Site Movement (if any) (windbreaks, vegetative filter strips, field edge buffers, no-till/reduced till, retention ponds, etc.): _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Application Information:

2018

Specific Farm Location (Your identifier): _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____ Application Type: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Application Information:

2017

Specific Farm Location (Your identifier): _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Application Information:

2016

Specific Farm Location (Your identifier): _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Application Information:

2015

Specific Farm Location (Your identifier): _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____

Date: _____

Product Name: _____ EPA Reg. No.: _____

Formulation: _____

Block(s) Treated: (if farm map is available): _____

Use Rate (a.i. per Acre): _____ Acres Treated: _____

Application Type: _____ Equipment Used: _____

Nozzle type: _____ Pressure: _____ Total Spray Volume per Acre: _____

Tank Mix? Yes _____, No _____ Products co-applied (if any): _____

Start Time: _____ End Time: _____ Temperature: _____ Wind Speed: _____ Direction: _____

Target Pest(s): _____

Drift Management Practices (if any): _____

Conservation Practices to Limit Off-site Movement: _____
