

Florida's Organo-Auxin Herbicide Rule - 2009¹

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Organo-auxin (phenoxy) herbicides were first developed during the 1940s and have been used extensively in the United States since then. This group of chemicals has found a place in weed control schemes for peanut, corn, small grains, sugarcane, turf, pasture and forage crops and many other areas. On a worldwide basis more phenoxy herbicides are used than any other class of herbicides presently manufactured. The phenoxy herbicide group's unique ability to remove broadleaf weeds from grass crops has been exploited for successful weed control in many areas.

Organo-auxin herbicides have been formulated in a number of ways with each formulation possessing certain characteristics. Amine and ester formulations have been the most popular although other forms of phenoxy do exist. As a general rule ester formulations are more active than amines. This difference in control activity has made ester formulations very popular due to the fact that about one half the rate of the amine formulation could be used and achieve the same weed control level. Therefore, growers could buy less total herbicide in

the ester form to do the same job as a larger amount of a phenoxy in the amine form.

Although ester formulations are more active herbicidally than amine formulations, they do have serious drawbacks associated with their use. Specifically, ester formulations are typically very volatile and possess the ability to move away from the target site up to several days after the initial herbicide application has been made. Volatilization problems have led to the complete destruction of nearby sensitive crops if weather conditions were favorable for volatilization to occur. Sub-lethal doses of organo-auxin herbicides cause very visual effects, indicative of hormonal action (Figures 1 – 4). Due to volatilization problems, many states have totally banned the use of high-volatile ester formulations and discouraged use of lower volatile esters in sensitive areas. Florida is one such state with these regulations. Due largely to phenoxy herbicide applications in south Florida on sugarcane and drift or volatilization to nearby tomato crops and their subsequent destruction, the Florida Department of Agriculture and Consumer Services (FDACS) enacted the Organo-Auxin Herbicide Rule (Table 1). This rule

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applies to the application of organo-auxin herbicides anywhere within the state. It is the intent of this publication to clarify and disseminate the Florida Organo-Auxin Herbicide Rule to interested growers and applicators.



Figure 1. Organo-auxin herbicide drift symptoms on sensitive plants.



Figure 2. Organo-auxin herbicide drift symptoms on sensitive plants.



Figure 3. Organo-auxin herbicide drift symptoms on sensitive plants.

A suggested recordkeeping form developed by FDACS is available for applicators of organo-auxin herbicides to record their data. Although this specific



Figure 4. Organo-auxin herbicide drift symptoms on sensitive plants.

form is not required, it does contain spaces for providing the required data to be recorded (Figure 5).

The Florida Organo-Auxin Herbicide rule 5E-2.033 appears in the Florida Pesticide Law and Rules. All inquiries should be addressed to:

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Possible sources to obtain wind meters (Figure 6) are listed in Table 2.

Table 1. FLORIDA ORGANO-AUXIN HERBICIDE RULE NO. 5E-2.033 ORGANO-AUXIN HERBICIDES

Restrictions and Prohibitions		
1.	Synthetic organo-auxin herbicides: The Synthetic organo-auxin herbicides are defined as herbicides which produce hormonal auxin type effects on plants similar to the effects of 2,4-D. These herbicides include:	
	2,4-D	2,4-Dichlorophenoxyacetic acid, in all forms;
	MCPA	4-chloro-2-methylphenoxyacetic acid, in all forms;
	2,4-DP	2-(2,4-Dichlorophenoxy) propionic acid, in all forms;
	MCPP	2-(2-methyl-4-chlorophenoxy) propionic acid, in all forms;
	MCPB	4-(2-methyl-4-chlorophenoxy) butyric acid, in all forms;
	Dicamba	2-Methoxy-3, 6-dichlorobenzoic acid, in all forms;
	Triclopyr	(3,5,6,-Trichloro-2-pyridinyl) oxyacetic acid, in all forms;
2.	Sale and use of highly volatile forms of organo-auxin herbicides in the state is prohibited except for those products labeled for use as plant growth regulators on citrus. Highly volatile organo-auxin herbicides include the methyl, ethyl, propyl, isopropyl, and butyl esters of 2,4-D, etc.	
3.	Based upon the wind speed and direction at the time of application, the distance which must separate the closest edge of the area to be sprayed from susceptible crops is listed below. Susceptible crops are defined as commercially produced plants or crops that may be damaged when exposed to low concentrations of organo-auxin herbicides. Users of organo-auxin products on citrus as plant growth regulators are exempt from the wind speed restrictions below provided they adhere to the restrictions appearing on the product label.	
	Wind Speed	Aerial Equipment
	0 - 3 mph	1/2 mile downwind
		1/2 mile crosswind
		50 feet upwind
	3 - 6 mph	1 mile downwind
		1/2 mile crosswind
		50 feet upwind
	6 - 10 mph	2 miles downwind
		1/2 mile crosswind
		50 feet upwind
	Above 10 mph	Prohibited
	Note: "Crosswind" means wind from a direction 90 degrees (+/-10 degrees) to a line drawn between the proposed treatment site and a susceptible commercial crop site.	
4.	Wind speed will be measured at the crop site or up to two miles away. Wind speed measurements will be taken at spray boom height for ground application and at least six feet above the ground for aerial application. The measurement site will be located so that structures, plants, or terrain features do not interfere with the accuracy of the reading. Wind direction will be estimated as accurately as possible by the person taking the wind speed readings. THE APPLICATOR OR HIS REPRESENTATIVE SHALL TAKE AND RECORD WIND SPEED AND DIRECTION READINGS BEFORE SPRAYING STARTS AND ONCE EVERY HOUR OF THE SPRAYING OPERATION. A reading shall consist of an average of three measurements taken within a five-minute interval. These measurements shall be taken by rotating and positioning the anemometer into the wind in such a manner as to obtain the maximum wind velocity measurements which will be used to calculate the average reading. An anemometer accurate to within +/-10% shall be used to take the wind speed measurements. Possible sources to obtain wind meters are listed in Table 2.	
5.	Applicators should minimize the production of droplets with mean volume diameter less than 200 microns in diameter regardless of spray equipment utilized. When utilizing boom application equipment on the ground, flat fan nozzles or their equivalent should be used and application pressures shall not exceed 35 pounds per square inch. Applications of organo-auxin herbicides on citrus as a plant growth regulator utilizing air blast sprayers are exempt from the requirements of this section.	

Table 1. FLORIDA ORGANO-AUXIN HERBICIDE RULE NO. 5E-2.033 ORGANO-AUXIN HERBICIDES

6.	Persons making spray applications of organo-auxin herbicides to cumulative land or water surface areas exceeding 5 acres per 24 hour period, shall maintain the following records for two years:
a.	Name and address of the owner, lessee or tenant in control of the land, and the name and address of the applicator.
b.	Location of the site to be treated, location of the herbicide mixing and loading area and description of application equipment used.
c.	Date and time of application.
d.	Trade name, manufacturer, formulation, total amount of product to be applied per acre and the amount of active ingredient of the product applied per acre.
e.	Total acreage and crop or site treated.
f.	Average hourly wind speed and direction.
g.	Nozzle type including gallons per minute rating at specified pressure (usually 40 psi) and angle of spray emission if applicable.
7.	AERIAL APPLICATION OF ORGANO-AUXIN HERBICIDES BY FIXED WING AIRCRAFT FROM JANUARY 1 UNTIL MAY 1 OF EACH YEAR IN HENDRY, PALM BEACH, GLADES OR MARTIN COUNTIES IS PROHIBITED. The use of rotary wing aircraft using Microfoil spray booms or their equivalent for right-of-way and aquatic spray applications is allowed provided the terms of subsections 2, 3, 4, 5 and 6 are met.
8.	Applicators who apply organo-auxin herbicides to ditches, canals, or the banks of similar waterways will assure that they are not treating water that will be directly used for irrigation of sensitive crops.
9.	The ground application of low volatility 2,4-D products registered in the State of Florida for use as a growth regulator on red potatoes in small dosages substantially less than for herbicidal use is not subject to the use regulations and restrictions set forth in subsections (3) and (4) of this rule provided the product is not applied within 50 feet of susceptible crops, the spray boom height does not exceed 18 inches above the crop canopy and label instructions are followed.
	SPECIFIC AUTHORITY: 570.07(23) F.S. LAW IMPLEMENTED: 487.031(10); (13)(e) FS. HISTORY: New 2/4/86; Amended 7/10/89, 7/29/04.

Table 2. Possible sources to obtain wind meters.*

1.	Dwyer Instruments, Inc. P. O. Box 373 102 Hwy 212 Michigan City, IN 46361 Phone: 800-872-9141 www.dwyerinst.com
2.	Forestry Suppliers, Inc. P.O. Box 8397 Jackson, Mississippi 39284-8397 Phone: 800-647-5668 www.forestry-suppliers.com
3.	Ben Meadows Company 190 Etowah Industrial Court Canton, GA 30114 Phone: 800-241-6401 www.benmeadows.com

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4.	TSI Supply Company P.O. Box 151 Flanders, New Jersey 07836 Phone: 201-584-3417
5.	General Supply Corporation P.O. Box 9347 Jackson, Mississippi 39286-9347 Phone: 800-647-6450 www.generalsupplycorp.com
* Suitable wind meters range in price (3/20/03) from \$16.00 to \$25.00.	