

Agricultural & Natural Resources Update



ALACHUA COUNTY COOPERATIVE EXTENSION 2800 NE 39th Avenue, Gainesville, FL 32609 (352)955-2402

February 2009



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HERBICIDE RESISTANCE

Herbicides work by blocking biological pathways in plants such as photosynthesis. The location where the herbicide blocks the plant's pathway is called the site of action. The site of action for the herbicide Velpar™ (hexazinone) is photosystem II of the photosynthetic pathway. Many different herbicides have the same site of action. For example, 2, 4-D and Remedy™ (triclopyr) are both classified as growth regulator herbicides. These herbicides are auxin mimics that interfere with the normal production of the plant hormone auxin. To assist producers in choosing herbicides, the Weed Science Society of America (WSSA) created a classification system to group herbicides by their site of action. This system allows producers to quickly determine which herbicides kill plants in the same manner. Repeated use of herbicides with the same site of action will cause herbicide resistance in weeds.

There is no such thing as a one-size-fits all herbicide. Even some of the broad spectrum herbicides, such as glyphosate and imazapyr have poor control of certain weed species. The natural ability of certain weeds to survive herbicide treatment is called **herbicide tolerance**. For example, lantana and greenbrier both have always had tolerance to glyphosate. In other words, glyphosate never provides acceptable control of these weeds. In contrast to herbicide tolerance, **herbicide resistance** is defined as *inherited* ability of a plant to survive a herbicide application to which the natural plant is susceptible. For example, palmer amaranth is naturally susceptible to Cadre™ (imazpic), however genetic mutations in some plants, have allowed certain populations of the weed to become tolerant to imazpic. Then when imazpic is applied to control palmer amaranth, the normal plants are killed, but the resistant plants survive.

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Herbicide Resistance continued:

It is an important thing to point out that herbicides **do not** cause the genetic mutations that result in herbicide resistance. Rather, the plants that have herbicide resistance mutations have always occurred in the entire plant population. When herbicides are applied all the normal or susceptible plant die while the resistant plants survive. With all the normal plants killed the resistant plants have a much easier time reproducing. Soon, only the resistant are left and the herbicide can no longer be used.

Unfortunately, weeds also have the ability to become resistant to more than one herbicide. Cross resistance is when a weed has resistance to two or more herbicides with the same site of action. For example, if crabgrass is resistant to Fusilade™ (fluaziflop), a Group 1 herbicide more than likely it will have resistance to Select™ (clethodim), another Group 1 herbicide as well. Multiple resistance is when a weed becomes resistant to two or more herbicides with different sites of action. For example water hemp in Illinois has been found with resistance to the triazine herbicides (Group 5), PPO inhibiting herbicides (Group 14), acetolactate synthase (ALS) (Group 2) and glyphosate (Group 9).

The most important step to undertake to prevent herbicide resistance is to rotate herbicides with different sites of action. To help with this, many of the new herbicide labels will have the herbicide group number on the top of the label. Crop rotation is also a good way to reduce herbicide resistance. Just remember, many crops use the same type of herbicides. For example, many ALS inhibitors are labeled for peanuts, corn, soybeans, vegetables, and pastures. IFAS does not recommend tank mixing as an effective strategy to reduce herbicide resistance. Tank mixing should only be used when the herbicide combination is needed to control the weed spectrum or herbicide rates can be reduced. Finally, cultivation and spot spraying can be used to control resistant weeds that have escaped.

In addition, IFAS also recommends keeping accurate records of all pesticides applied. Not only does this allow you to know what herbicides have been applied in the past, it also is required for the Worker Protection Standard (WPS) and for pesticide inspections.

*Information for this article was compiled from "Herbicide Resistant Weeds" by :
Brent Sellers, Jason Ferrell, and Greg MacDonald, IFAS Weed Scientists
<http://edis.ifas.ufl.edu/AG239>*

Pesticide Updates

- ▶ The Florida Department of Agriculture and Consumer Services (FDACS) approved the registration of Natural Forces, LLC's insecticide/miticide sorbitol octanoate (Sorbishield®) to control insect and mite pests on most crops in most settings. The EPA registration number is 70950-3-84710. (FDACS PREC Agenda, 12/4/08)
- ▶ The FDACS approved the registration of Natural Forces, LLC's insecticide/miticide sucrose octanoate (Sucrashield®) to control insect and mite pests on most crops in most settings. The EPA registration number is 70950-2-84710. (FDACS PREC Agenda, 12/4/08)
- ▶ Based on a request by Chemtura Corp., the EPA has approved tolerances for the fungicide ipconazole (Vortex®). Tolerances of importance in Florida include cotton, peanut, and soybean. (Federal Register, 11/19/08)



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Pesticide Updates - continued:

- ▶ Based on a request by IR-4, the EPA has approved tolerances for the insecticide novaluron (Rimon®/Diamond®). Tolerances of importance in Florida include sugarcane and tomato. (*Federal Register*, 12/10/08)
- ▶ On November 8, the FDACS approved the EUP registration of DuPont's termiticide chlorantraniliprole (E2Y45) to evaluate the control of termites in post-construction situations. The EUP registration number is 352- EUP-172. (*FDACS PREC Agenda*, 12/4/08)
- ▶ The EPA has announced an extension of the final sale deadline for fenamiphos (Nemacur®) nematicide products (Nemacur® 10% Turf and Ornamental, 432-1291 and Nemacur® 3, 264-731). The final sale date is now March 31, 2009. (*Federal Register*, 12/10/09)

TIMBER PRICE REPORT

Timber Mart-South Summary

4th Quarter, 2008

Timber Mart-South Summary, 4th Quarter, 2008

The information in the following table was extracted from the Timber Mart-South fourth quarter 2008 report, released in January 2009. This information, compiled from many sources, is very useful for observing trends over time, but may not necessarily reflect current conditions at a particular location. Region 1 is central and northeast Florida; Region 2 includes the panhandle. In addition to general market conditions, prices vary from sale to sale depending on tract size and access; quality, quantity, and size of timber; distance to mills; and other market conditions. Landowners considering a timber sale would be wise to let a consulting forester help them obtain the best current prices.

Stumpage Prices, 2008, 4th Quarter

Product	Region	Average	Range	\$/Ton
Pine Pulpwood (\$/Std. Cord)	Northeast(1)	\$ 29	\$ 23-35	
	Northwest(2)	\$ 30	\$ 25-35	
	Average	\$ 29		\$11
Chip-n-Saw (\$/Std. Cord)	Northeast(1)	\$ 50	\$ 45-55	
	Northwest(2)	\$ 48	\$ 42-53	
	Average	\$ 49		\$ 18
Pine Sawtimber (\$/MBF Scrib.)	Northeast(1)	\$264	\$241-288	
	Northwest(2)	\$237	\$201-274	
	Average	\$251		\$ 33
Oak Sawtimber (\$/MBF Doyle)	Northeast(1)	\$125	\$109-141	
	Northwest(2)	\$122	\$109-135	
	Average	\$124		\$14
Mixed Hardwood Sawtimber (\$/MBF Doyle)	Northeast(1)	\$141	\$ 99-183	
	Northwest(2)	\$100	\$ 57-143	
	Average	\$121		\$ 14
Pine Plylogs (\$/MBF Scrib.)	Northeast(1)	\$253	\$244-263	
	Northwest(2)	\$222	\$171-274	
	Average	\$238		\$ 32
Power Poles (\$/MBF Scrib.)	Northeast(1)	\$410	\$380-439	
	Northwest(2)	\$446	\$403-490	
	Average	\$428		\$ 57
Hardwood Pulp (\$/Std. Cord)	Northeast(1)	\$ 18	\$ 14-23	
	Northwest(2)	\$ 18	\$ 14-21	
	Average	\$ 18		\$ 6

To simplify information available in the newsletter, it is sometimes necessary to use trade names of products, equipment and firms. No endorsement is intended, nor is criticism implied of similar products, equipment and firms not mentioned.

UPCOMING EVENTS

LANDSCAPING IPM SHORT COURSE

Tuesday, April 14th

1:00-5:00 p.m.

Alachua County Extension Office
2800 NE 39 Avenue, Gainesville

Registration fee for this is \$20.00. Please register by April 7th at (352)955-2402.

GREEN INDUSTRIES BEST MANAGEMENT PRACTICES

Friday, April 24th

8:45 a.m.-3:00 p.m.

Alachua County Extension Office
2800 NE 39 Avenue, Gainesville

4 CEUs including 2 CORE will be provided. Please register by April 17th at (352)955-2402.

FLORIDA MASTER NATURALIST PROGRAM

The freshwater wetlands module of the Florida Master Naturalist Program starts on April 6th. This 11 part class provides instruction on the general ecology, habitats, vegetation types, wildlife, and conservation issues of Freshwater Wetlands in Florida - Marshes, Swamps, and Permanent Wetlands (Lakes, Rivers, Springs, and Streams). For more information and to register for the module please visit :

<http://www.masternaturalist.ifas.ufl.edu>.