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Online Training Available

<https://pmu.ifas.ufl.edu/>

<https://eces.ifas.ufl.edu/>

Additional Resources

University of Florida
Extension Publications

<http://edis.ifas.ufl.edu/>

Pest Management in and
Around Structures

<http://www.eXtension.org/>

PMU Focus - Effective Herbicide Rotations for the Lawn and Landscape

By: Chris Marble

Herbicides are the most effective and economical weed management tool for lawns and landscapes. While herbicides are effective, in some cases they may cause the development of herbicide resistant weeds if used incorrectly. Herbicide resistance is the ability of a weed population to survive an herbicide application that was known to control the population in the past. Herbicide resistance is usually caused by naturally occurring mutations in the plant's genetic structure. When these mutations occur, certain herbicides may no longer be able to control that weed population due to the way that particular herbicide works in the plant. If the ineffective herbicide is used over and over again, the population containing the genetic mutation (resistant population) is able to keep growing, reproducing, and spreading.

Resistance most commonly becomes a problem when the same herbicide or herbicides with the same mode of action (MOA) are used repeatedly in the same area year after year. The MOA is how the herbicide works in the plant to kill the weed. In order to delay or prevent the development of herbicide resistance, herbicides with different MOA should be rotated. This can be effective because if a weed population survives an herbicide application with one MOA, that weed population may be controlled by another herbicide with a different MOA.

Herbicides are often referred to by their trade name, such as Manor® (active ingredient metsulfuron-methyl). It is important to note that herbicides with different trade names may contain the same active ingredient, and also that herbicides with different active ingredients may have the same MOA and would not be good rotation partners. There are many charts available online which list herbicide trade names, active ingredients, and their MOA such as the Weed Science Society of America's herbicide mode of action table available at <http://weedscience.org/documents/showdocuments.aspx?DocumentID=1192> or the Herbicide Resistance Action Committee's mode of action table available at <http://www.hracglobal.com/pages/classificationofherbicidesiteofaction.aspx>. Further, most herbicides now list their group number on the front of the label which shows that MOA that herbicide uses.

The best ways to prevent herbicide resistance are to rotate herbicide MOA from year to year or to rotate herbicides within the same season. In addition to preventing or delaying herbicide resistance, this strategy may also improve weed control. Certain herbicides are stronger or weaker on certain weed species, and always keep in mind that no herbicide controls all the weeds. You will likely have escapes if only one or two products are used over and over again. While herbicide rotation can reduce the chances of resistance development, in many cases it also offers greater turf and ornamental safety and improved weed control because a wider variety of products are used that control a broader spectrum of weeds. For more information on herbicide resistance and how you can develop your own effective herbicide rotation, please see [Turfgrass Herbicides: Mechanisms of Action and Resistance Management](#) by Drs. Ramon Leon and Bryan Unruh.

Note: The next [L&O Foundations: Oct 5-7, 2016](#); [L&O Masters with state exam: Nov 9-11, 2016](#).

Landscape IPM Course and LMA

Get ready to learn this summer: Enroll in Landscape IPM: Ornamentals and Turf, and take your first steps toward getting a UF Pest Management Certificate or becoming LMA Certified! Classes begin June 27th!

A three credit/six week course will be offered starting June 2016 at the University of Florida (UF). The course is called "Landscape IPM: Ornamentals and Turf" and its course number IPM 4254. This course will be offered for UF credit and will be available for students that are enrolled at UF or for people outside UF that are interested in the material. UF will offer the course next summer (2016) and it will be available 100% online. You must have computer and internet access to take this class. This course is for UF juniors and seniors and landscape and pest management supervisors and owners.

This course will be used as a measure for LMA Certification. The LMA will offer students who pass this class (with an A or a B) the opportunity to become LMA Certified without additional testing since they will be tested as part of the course. This course will also count towards a UF Certificate in Landscape Pest Management.

Learn more about the UF distance program, including costs and how to register-

<http://entnemdept.ufl.edu/academics-directory/online-learning/>

To register for this course please complete a Nondegree Registration Request at the following website:

<http://www.isis.ufl.edu/cgi-bin/eaglec?MDASTRAN=nda-intro>

Advance Registration: March 21st to May 3rd, then May 5th to June 23rd. Fee payments due July 8!

You will need to fill out some personal information on the form and the following course information:

- Select Year and Term of Registration: 2016 Summer (May)
- College: THE COLLEGE OF AGRICULTURAL AND LIFE SCIENCES – Entomology Undergrad Distance Courses
- Course Information: Prefix- IPM. Number- 4254.

If you have trouble filling out this form and registering for the course please contact Ms. Ruth Brumbaugh, Entomology and Nematology Department Student Services Coordinator. Phone: 352-273-3912 Email: brumbaugh@ufl.edu . *Please let Ms. Brumbaugh know you are attempting to register for the course as a Nondegree seeking student so she knows how to help you.*

If you would like more information about the course please contact the course instructor Dr. Jennifer L. Gillett-Kaufman Phone: (352)273-3950 Email: gillett@ufl.edu. She cannot help you with registration and will forward all registration requests to Ms. Brumbaugh.

Upcoming Training Opportunities:

We are offering a second round of Spring courses! Register now!

...Did you know that PMU can help you by

- Partially satisfying the 482/5E-14 requirement for initial technician training hours?

Our Oct 12-14 Termite Masters, Oct 26-28 GHP Masters, and Nov 9-11 L&O Masters courses are open! Similar to the Structural Fumigation School

(<http://conference.ifas.ufl.edu/fumigation/>), the state has graciously allowed us to hold the state certified operator examination at the end of each Masters course. We hold optional reviews in the evenings. To qualify, you must:

- Take the Foundations **and** Masters courses for GHP, WDO, or L&O
- Fill out an application package for the certified operator exam either
 - [Online](#); deadline one week before exam, or
 - [Paper](#); deadline for paper applications **September 1** for the Oct/Nov exams

May 2016 Offerings:

Foundations of General Pest Management 101

Last GHP Foundations until Sept 21-23, 2016

Date: May 13-15, 2016; Wed-Fri

Time: 8 AM-5 PM (W, TH); 8 AM-12 PM (F)

Place: UF/IFAS Apopka MREC, 2725 S. Binion Rd, Apopka, FL
32703-8504

Registration fee: \$375

Pest control matters. Mosquito-borne diseases, cockroach allergens, rodent-borne diseases all impact human health.

- Study domestic and peridomestic cockroach species and how to control them as well as rodent, small fly, filth fly, occasional invaders, mosquitoes, fire ant, and nuisance ant management.
- Review the labels of commonly used GHP products, practice pest inspections at PMU's house and develop treatment strategies focused on IPM.
- Do a vehicle inspection and spill drill with Paul Mitola from FDACS.

[Register here](#)

**Master of Termite Management (FULL, WAITLIST ONLY;
[Register here for OCT 12-14 TERMITE MASTERS](#))**

Date: May 25-27, 2016; Wed-Fri

Time: 8 AM-5 PM (W, TH); 8 AM-12 PM (F)

Place: UF/IFAS Apopka MREC, 2725 S. Binion Rd, Apopka, FL
32703-8504

Registration fee: \$375

Must have completed Foundations in order to advance. WDO State Examination is offered on Friday after the Masters course, if interested and qualified.

- Review termite identification, biology and control and learn about wood-destroying beetles and wood-decaying fungi.

Learn how:

1. To do a proper borate application
2. Baits work
3. To use foam and application techniques to optimize the distribution of liquid termiticides in soil with the Bayer

University toys

- Hear about the top 10 reasons that certified operators get in trouble and how to avoid them from Mark Ruff, industry attorney.
- Do an inspection for WDOs at PMU's house designed to challenge even experienced inspectors.
- Practice a licensee inspection with a DACS inspector and learn about the duties of a certified operator.

[Register here for OCT 12-14 TERMITE MASTERS](#)

June 2016 Offerings:

General Household Pests Basics 100

Date: June 30, 2016

Time: 8 AM-5 PM (TH)

Place: UF/IFAS Apopka MREC, 2725 S. Binion Rd, Apopka, FL 32703-8504

Registration fee: \$175

This one-day class is geared for the new technician, sales, or office staff. Additionally, this class will help fulfill the 40 hour training requirement for new ID card holders.

- Learn about the general Florida Statute 482 requirements for technicians and sales.
- Learn the basics concepts Integrated Pest Management.
- Learn how to monitor and make decisions about treatment.

[Register here](#)

Termite Basics 100

Date: July 1, 2016

Time: 8 AM-5 PM (F)

Place: UF/IFAS Apopka MREC, 2725 S. Binion Rd, Apopka, FL 32703-8504

Registration fee: \$175

This one-day class is geared for the new technician, sales or office staff. Will help fulfill 40 hour training requirement for new ID card holders.

- Learn about the general Florida Statute 482 requirements for

technicians and sales staff.

- Be introduced to basic termite biology and behavior in the context of structural infestations.
- Learn to determine different slab types in the field and the common ways termites enter structures
- Practice basic methods for treatment

[Register here](#)

Click on "Register here" for course descriptions or go to <http://pmu.ifas.ufl.edu/courses> for more information

Learn more from IFAS



- UF/IFAS has Extension Offices in each of Florida's sixty-seven counties. We also have twelve Research and Education Centers (RECs) and Research and Demonstration Sites (RDSs).
- If you need help a great place to start is your local County Extension Office. With an office located in every county it has never been easier to partner with the University of Florida and your local County Government. To find an office near you please visit:
<http://solutionsforyourlife.ufl.edu/map/>