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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/>

Breaking News!



Fig 1. PMU Training House



Fig 2. Mud tube and trim separation from door frame

Our house (Fig 1) at PMU final has a bonafide subterranean termite infestation and we are thrilled! A sharp PMP during our last class noticed the door trim pulling away from the frame and followed the separation to the source (Fig 2)

PMU Focus - How Nerves Work: Information Transmission

Why learn about how nerves work and the modes of action for of pest control products?

- Do you have customers who are worried about what your treatments may be doing to them in the process of taking care of their pest problem?
- Wonder why some products are fast-tracked through the EPA registration process?
- Want to know how to select products for more effective pest control?

These questions can be answered by understanding the mode of action of the products we use. In our August issue, we

focused on insecticides that target the nervous system such as those in the Pyrethroid class (e.g., Talstar®) and Oxadiazine class (e.g., Advion®). In order to understand how insecticides in these classes work, we need to understand the nerve.

The Big Picture: Nerves are a specialized type of cell, also called "neurons." Both pest species and non-target organisms alike contain neurons and that is another reason why understanding the mode of action of pesticides is important: It enables the well-trained PMP to select products that target the neurons of pest species while avoiding exposure to non-target organisms. [Click here](#) and scroll down for a video on how nerves work.

There are many kinds of neurons in an organism's body and their connections are much more complex than the version in Fig 1. Neurons form connections with other neurons and tissues like muscles; much like "friends" on Facebook. When you friend someone on Facebook, and they "confirm", you have formed a cyberspace "neuronal" connection. When you post something on Facebook, your friends receive the information through an "Internet impulse" which can also be "liked" thereby affecting other Facebook friends through a network of friends. Similar to the Facebook analogy, neurons transmit information (impulses) using electrical and chemical signals (Fig. 3).

Electrical charges traveling along a neuron are called **impulses**. When the impulse comes to the end of a nerve cell (**pre-synapse region**), it must find a way to cross the **synapse** (the gap between one neuron and the next) using chemicals called **neurotransmitters** and then continue to the **post-synaptic region**. Pesticides are designed to interrupt this process by permanently turning on or halting these processes, resulting in pest death.

Finer Points: Electrical impulses are generated and moved along a neuron by **ions** (negatively or positively charged atoms or molecules). These ions include sodium, potassium and chloride that move in and out of the neuron. Pesticides belonging to the pyrethroid class will impact sodium voltage-gated channels along a neuron (Fig 4). Neurotransmitters include acetylcholine, gamma-amino butyric acid (GABA) and glutamate. Fipronil (Termidor) is an example of a pesticide that blocks GABA receptor sites.

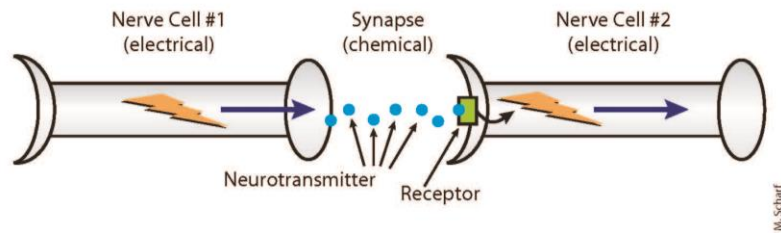


Fig. 3. The insect nervous system is composed of a series of interconnected cells, called neurons, along which travel electrical charges called impulses. A chemical messenger called a neurotransmitter carries impulses from the end of one nerve cell across the synapse (the space separating neurons) (Used with permission from Suiter and Scharf, 2009)

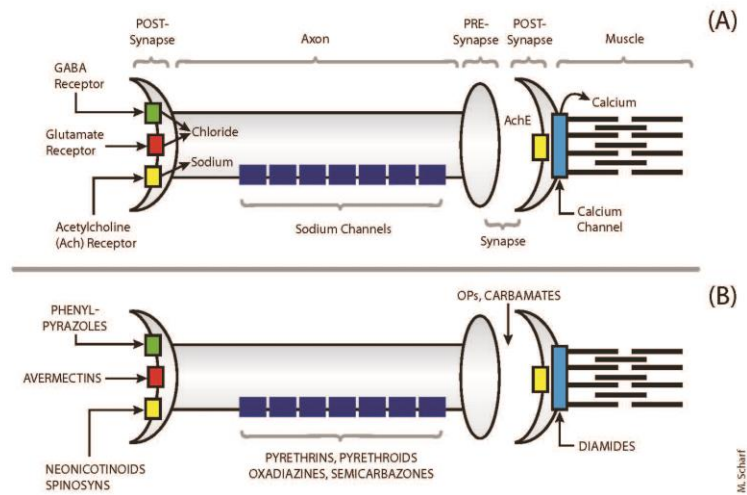


Figure 5. Neurological target site of various insecticide classes used by the urban and structural pest management industry.

Fig. 4. Target sites of various insecticide classes. (Used with permission from Suiter and Scharf, 2009)

Stay tuned for more on how insecticides work or better yet, join us for a PMU class!

Back by Popular Demand—

Next spring enroll in Landscape IPM: Ornamentals and Turf, and take your first steps toward getting a UF Pest Management certificate or becoming LMA certified!

A three credit/12 week course will be offered starting January 2014 at the University of Florida (UF). The course is called "[Landscape IPM: Ornamentals and Turf](#)" and is 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 spring (2014) 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/distance/>

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>

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

- Select Year and Term of Registration: 2014 Spring (January)
- 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 .

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 will be opening our 2014 courses in October, so check back with us as you plan your 2014 training season. [GHP Expert](#) is now open for registration! Classes are limited to 20 participants, including Masters and Expert levels. Master level classes are only offered once a year. Expert level classes are offered every other year.

If you plan on taking the [State Certified Operator examination](#) through PMU, please submit your applications by:

Extended to Sept 23 ~~Sept 16~~ for the Oct 18 PMU [State Exam](#) for GHP

(Write **"PMU OCT GHP"** on the top line of the state application)

Oct 13 for the Nov 15 PMU [State Exam](#) for Termite and WDO

(Write **"PMU NOV WDO"** on the top line of the state application)

Summary

Click on highlighted course titles for more information or to register.

Sept 25-27, [GHP Foundations](#) (last one for 2013, **CLOSED**)

Oct 2-4, [Foundations of Tree and Shrub Pest Management](#)

Nov 6-8, [Foundations of Turfgrass Pest Management](#)

Must advance through Foundations to qualify for these courses:

Oct 16-18, [GHP Masters](#)

Oct 18, 1 pm; GHP state exam (must also meet state requirement, write "PMU" on application)

Nov 13-15, [Termite Masters](#)

Nov 15, Termite and WDO exam (must also meet state requirement; write "PMU" on application)

Dec 18-20, [Master of Turfgrass Pest Management](#)

Must advance through Foundations and Masters for qualify for this course

Dec 4-6, [GHP Expert](#)

SEPTEMBER OFFERINGS

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Foundations of General Household Pest Management 101

Pest control matters. Cockroach allergen mitigation can be achieved with IPM. Class duration: 2.5 days.

- Study domestic and peridomestic cockroach species and how to control them as well as rodent, small fly, filth fly, 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 DACS.

Date: Sept 25-27, 2013; W-F

Registration Deadline: Sept 20, 2013; Friday (Closed, next course is Feb 26-28, 2014)

Place: UF/IFAS Apopka MREC

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

Cost: \$350

[Register here](#)

OCTOBER OFFERINGS

Foundations of Tree and Shrub Pest Management

Please contact Dr. Eileen Buss for more information about this class (email: eabuss@ufl.edu; Ph: (352) 273-3976).

Date: Oct 2-4, 2013; W-F

Place: UF/IFAS Apopka MREC

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

Cost: \$350

[Register here](#)

Master of General Household Pest Management

This fast-paced class is only offered once a year. **Must have completed Foundations in order to advance.**

- Learn about biting and stinging insects, stored product pests, and occasional invaders as well as how to recognize delusory parasitosis.
- Learn about modes of action, formulations and their impact on product selection.
- Play with the tools of the trade, vacuums, steamers, foamers and practice spray patterns.
- Prepare for an introduction to vertebrate pests that carry disease causing organisms.
- Learn about the legal liabilities of GHP work.
- Practice affidavit writing and working with DACS on licensee inspections.

Review labels of commonly used products including changes in pyrethroid labels, rodenticide labels and the impact of bee health on product use patterns.

Date: Oct 16-18, 2013; W-F

Registration Deadline: Oct 11, 2013; Friday

Place: UF/IFAS Apopka MREC

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

Cost: \$350

[Register here](#)

Learn more from IFAS



- UF/IFAS has Extension Offices in each Florida's sixty-seven counties. We also have twelve Research and Education Centers 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



office near you please visit:
<http://solutionsforyourlife.ufl.edu/map/>