Upcoming Classes & CEU Workshops

Training Classes

- Wednesday, November 14th—
  General Standards Training Class & Exam.  
  Location: South Dade Government Center, Cutler Bay.  
  Time: 8:30—3:00.  
  CEUs: 4.0 Core

- Tuesday, December 4th—Private 
  Applicator Training Class & Exam.  
  Location: John D. Campbell Ag Center, Homestead.  
  Time: 8:30—3:00.  
  CEUs: 4.0 Private, Ag Row Crop, Ag Tree Crop, O & T

- Tuesday, December 18th—
  Ornamental & Turf Training Class & Exam.  
  Location: John D. Campbell Ag Center, Homestead.  
  Time: 8:30—3:00.  
  CEUs: 6.0 Private, O & T

Registration & pre-payment are required for these workshops. Please call Lize (305) 248-3311 X242 for a registration form or visit our website: http://miami-dade.ifas.ufl.edu/programs/pesticidetraining.htm

CEU Workshop

- Wednesday, November 14—Ficus 
  Whitefly and Other Ornamental 
  Pest Problems.  Location: John D. 
  Campbell Ag Center, Homestead.  
  Time: 9:00 a.m.—12:30 p.m..  
  CEUs requested: 4.0 Private, 
  O & T, Commerical / Limited L & O, 
  Limited Landscape Maintenance

Registration & pre-payment is required for this workshop. Please call Patty (305) 248-3311 X225 for a registration form

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Final Report on Alleged Pesticide Birth Deformities

A report released in late February by several authors from the Centers for Disease Control and Prevention as well as state-level personnel confirmed what had previously been concluded by the State of Florida, namely that there is little evidence linking adverse reproductive effects to exposure to specific pesticides during pregnancy (see Chemically Speaking, June 2006). In February 2005, three infants with congenital anomalies were identified in Collier County. They were born within 8 weeks of each other and the mothers worked for the same tomato grower. All three mothers worked during the period of organogenesis (the period when the fetus is developing organs) in fields treated with pesticides.

In Florida, approximately 3 percent of live births have major birth defects. There was evidence to suggest that the three observed major birth defects exceed this expected rate. Based on farmworker population and birth rate, these three infants would result in a birth defects...
incidence rate of 50 percent during the 12 weeks in question among female farmworkers employed in Florida. Obviously, a rate of this magnitude causes alarm and is another reason for the in-depth investigation at state and federal levels. However, despite the suggestive evidence, a causal link could not be established between pesticide exposures and the birth defects in the three infants. The grower in this case agreed in late 2005 to cease use of mancozeb, abamectin, and methamidophos. The report also stated that work practices should be implemented to reduce pesticide exposures. The full report is at: http://www.ehponline.org/members/2007/9647/9647.pdf (EHPonline, 2/21/07, Chem. Speak. 2-07).

**Biotech Fertilizer?**

Research in molecular biology has put highly desirable and widely adopted traits for herbicide and insect resistance into crop plants. It is expected that the science will soon impact the rate of progress in yield improvement, and that genetically modified plants may show increased stress tolerance and nutrient use efficiency. Such improvements beg the question - what is the likelihood of being able to replace nitrogen fertilizer altogether?

Plants of the legume family have always been able to metabolically acquire a portion of nitrogen requirement. A complex symbiosis with rhizobial bacteria lets them make the ammonium they need for protein synthesis directly from the nitrogen gas abundant in the air. They fix nitrogen using the nitrogenase enzyme of the bacteria. It costs the plant something for energy, but perennial species like alfalfa are efficient enough at it that they rarely respond to nitrogen fertilizer. Transferring the trait to non-legume crops would be a major challenge. The most important grain crops of the world - the cereals such as corn, wheat, and rice - are all non-legumes. They take most, if not all, of their N from the soil. They generally do not produce high yields without N fertilizer.

Research on the genetic control of the legume symbiosis has led to identification of the plant genes that trigger the formation of nitrogen-fixing nodules. A breakthrough was reported in the summer of 2006. Dr. Giles Oldroyd, a scientist working at the John Innes Centre in Britain, said: “The fact that we can induce the formation of nodules in the plant in the absence of the bacteria is an important first step in transferring this process to non-legumes. However, we still have a lot of work before we can generate nodulation in non-legumes.”

Considering that both the plant and the bacteria need to take many more steps after nodulation in order to begin the process of effectively taking nitrogen from the air, it is clear that the science behind the transfer of the process to non-legumes is in its infancy.

The Brazilian Agricultural Research Corporation announced in December 2006 that it has finished mapping and sequencing the genome of another bacterium that works as a natural fertilizer. *Gluconacetobacter diazotrophicus* is found in sugarcane, sweet potatoes, and pineapples. As an endophyte - living between the cells of the roots of its host - its association is not as intimate as that of the rhizobia that invade the root cells of a legume to form nodules. However, this organism is responsible for the low nitrogen requirements of sugarcane and contributes to the high energy efficiency of the Brazilian ethanol industry. (Farm & Rancher Guide, 4/2/07; Chem. Speak., 4/07).
The Agricultural Health Study

The Agricultural Health Study (AHS) is the largest, most comprehensive study of agricultural health conducted in the United States. Almost 90,000 people are participating in the Agricultural Health Study - about 31,000 from North Carolina and 59,000 from Iowa. Participants include certified private pesticide applicators (farmers) and their spouses in North Carolina and Iowa and certified commercial pesticide applicators (5,000) in Iowa only. Another important feature of the AHS is that it is one of the largest health studies of rural women ever conducted. About 3 percent of pesticide applicators in the study are women (1,359). Over half of the farmers’ spouses are active in farm work, including mixing and applying pesticides. The credibility of this study and the resulting research findings are high. Results were first released in late 2005 and new information was released in late 2006 and March 2007. The study will continue for at least another 10 years.

Previous studies of agricultural health indicated that farmers are healthier than the general population in some respects. For example, they live longer and are less likely to die from heart disease. Farmers are also less likely to die of some cancers such as lung, esophagus, bladder and colon. The study has made three general comparisons. First, investigators are comparing applicators and spouses to people in the general population of Iowa and North Carolina to see if there are differences in the cancer rates. Second, scientists compared applicators or spouses who have cancer or other diseases to those who don’t to see if there are pesticide exposure or other factors that may have contributed to the disease. Third, the scientists also are comparing applicators or spouses using a particular pesticide to those not using it to see if there are any differences in the risk of cancer or other health problems.

For cancer, investigators compared the rate of various types of cancer in applicators and spouses to the rates of those cancers in the general population of those states, adjusting for age and gender. Applicators are healthier than the general population and the overall rate for all types of cancer is lower than in the general population. The rates for 18 of 20 specific cancers are lower in applicators and spouses than in the general population. For prostate cancer, the rate is 14 percent higher in male applicators than in the general population, while the rate of skin melanomas is 50 percent higher among farm wives than in the general population. The scientists found no evidence of an association between breast cancer in farmers’ wives and exposure to any of 50 pesticides evaluated. Breast cancer risk was not increased with husband’s use of 2,4-D.

Diazinon was associated with a higher breast cancer risk with use by husbands, but ONLY in women with a family history of the disease, suggesting a possible gene-environmental interaction.

Wheeze is a symptom of respiratory conditions, especially asthma. A wheezing sound is produced when you breathe if the airways deep in your lungs are narrowed. The scientists took into account known risk factors for wheeze, including asthma or allergies and smoking history, and were able to separate any impact of these influences from that of pesticides. With that in mind, the scientists learned that wheeze was associated with several types of farm exposures, including eight pesticides - paraquat, EPTC, parathion, malathion, chlorpyrifos, atrazine and alachlor, as well as with applications involving fogging and misting animals. Wheeze also was associated with other exposures on the farm,

“...The Agricultural Health Study (AHS) is the largest, most comprehensive study of agricultural health conducted in the United States. Almost 90,000 people are participating in the Agricultural Health Study...”
including using diesel tractors and frequent solvent use. Certain animal production practices also were associated with wheeze, including egg and dairy production and the daily performance of livestock/veterinary procedures.

Retinal degeneration is the leading cause of vision loss in older adults, but little is known about its causes. The most common form of retinal degeneration is macular degeneration, characterized by less visual acuity and loss of central field of vision. Agricultural health study scientists found a consistent association between applicators who reported retinal degeneration and use of fungicides. The association got stronger with increasing lifetime-days of fungicide use. New information in the last few months has associated these fungicide active ingredients with retinal degeneration: benomyl, captan, chlorothanomil, copper ammonia carbonate, ferbam, maneb, metalaxyl, PCNB and sulfur. A second study looked at the relationship between retinal degeneration and pesticide use in farm wives and found the same results. The wives were nearly twice as likely to have retinal degeneration if they or their husbands used fungicides. The fungicides that drove this association were maneb, mancozeb and ziram.

The AHS has given scientists a unique opportunity to learn more about female reproductive health. In their studies, the scientists focused on women aged 21-40 years old. They learned that women who used pesticides of any type were more likely to experience longer menstrual cycles and missed periods. When they looked at those women who used pesticides thought to act like hormones (based on toxicology studies in animals), they saw even stronger associations with long cycles and missed periods. The probable hormonally-active pesticides included in the study were lindane, atrazine and mancozeb or maneb. (Univ. Neb. Crop Watch Newsletter, 4/6/07, Chem. Speak., 4/07).

Bt to Blame for Bee Colony Collapse?

Because honey bees play such a crucial role in agriculture, the recent news that large areas of the U.S. were experiencing a widespread sudden loss (or disappearance) of honey bee colonies caused alarm across the country. While some honey bee experts question the severity of the disorder, this phenomenon has been described by others as Colony Collapse Disorder (CCD). Groups critical of the widespread adoption of biotech crops in the U.S. and globally have recently begun a campaign alleging that CCD may be caused by crops expressing one or more Bt proteins. Unfortunately, entomologists have not been able to determine the cause of CCD. While the cause is not yet clear, there is strong evidence that the production of specific insecticidal proteins from the soil bacterium Bacillus thuringiensis (Bt) in crops to control targeted caterpillar pests and beetles does not pose a risk to honeybees.

There is extensive information on the lack of non-target effects to diverse groups of beneficial insects including honey bees and other pollinators from Bt microbial preparations that contain Bt proteins. Bt proteins are ideal for use in organic production and in Bt crops because they bind specifically to receptors on the mid-gut of sensitive pests and have no deleterious effect on beneficial/non-target insects under the conditions of use, including predators and parasitoids of targeted caterpillar pests and honeybees. The following is a synopsis of the Cry1Ab toxicity testing for larval and adult bees.

Bees were exposed to the Cry1Ab protein via ingestion of diluted honey at
On January 12, the Florida Department of Agriculture and Consumer Services (FDACS) registered the biofungicide *Gliocladium catenulatum* strain J1446 (Prestop®) for control of diseases on food crops, turf, and ornamental plants. The EPA Reg. No. for the Verdera Oy product is 64137-11. (PREC Agenda, 2/1/07).

The EPA has approved an exemption from the requirement of tolerance for the microorganism *Pythium oligandrum* DV 74 on food crops. (Fed. Reg., 5/16/07).

The EPA has approved a temporary exemption from the requirement of tolerance for the microorganism *Aspergillus flavus* NRRL 21882 on corn. The exemption will expire on May 2, 2009. (Fed. Reg., 5/16/07).

The EPA has once again approved a Section 18 specific exemption for the use of coumaphos (CheckMite+ Bee Hive Pest control strips) in beehives to control Varroa mites and the small hive beetle. The exemption will expire on 2/1/08. (FDACS letter, 2/20/07).

The EPA has approved new tolerances for the insecticide/miticide coumaphos in honey. The levels are 0.15 ppm in honey (previously 0.1 ppm) and 45 ppm in honeycomb (previously 100 ppm). (Fed. Reg., 5/23/07).

The EPA has approved tolerances for the herbicide diuron. Tolerances of importance in Florida include cactus, mint, and farm-raised freshwater finfish. (Fed. Reg., 6/13/07).

Based on a request by Dow AgroSciences, the EPA has approved tolerances for the herbicide penoxsulam. Tolerances of importance in Florida include fish, shellfish, and mollusc. (Fed. Reg., 7/25/07).

Based on a request by Dow AgroSciences, the EPA has approved tolerances for the insecticide spinosad (Spintor®). Tolerances of importance in Florida include fish, shellfish, and mollusc. (Fed. Reg., 8/29/07).

The USDA’s Animal and Plant Health Inspection Service (APHIS) is amending the fruits and vegetables regulations to allow the importation into the continental United States of mangoes from India under certain conditions. As a condition of entry, the mangoes must undergo irradiation treatment and be accompanied by a phytosanitary certificate with additional declarations providing specific information regarding the

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Pesticide Registrations, Tolerances, Etc.

**Food Crops**

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**Bees & Honey**

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**Fruit**

* The USDA’s Animal and Plant Health Inspection Service (APHIS) is amending the fruits and vegetables regulations to allow the importation into the continental United States of mangoes from India under certain conditions. As a condition of entry, the mangoes must undergo irradiation treatment and be accompanied by a phytosanitary certificate with additional declarations providing specific information regarding the
treatment and inspection of the mangoes and the orchards in which they were grown. In addition, the mangoes will be subject to inspection at the port of first arrival. This action allows for the importation of mangoes from India into the continental United States while continuing to provide protection against the introduction of quarantine pests. (Fed. Reg., 3/12/07).

* Based on a request by IR-4, the EPA has approved tolerances for the insecticide buprofezin (Courier®/Applaud®). Tolerances of importance in Florida include canistel, mango, papaya, sapodilla, black sapote, mamey sapote, and star apple. (Fed. Reg., 6/27/07).

* The EPA has modified the tolerance for use of the fungicide ferbam on mango. The new tolerance is 4 ppm, rather than 7 ppm. (Fed. Reg., 6/13/07).

* On September 12, the FDACS requested a Section 18 emergency exemption from the EPA for use of the fungicide fludioxonil (Scholar®) as a post harvest treatment of carambola for Dothiorella spp. infection. (FDACS letter of 9/12/07).

* The EPA is canceling SLN PR-920002 (Mocap® use on pineapple). (Fed. Reg., 8/20/07).

* Based on a request by BASF, the EPA has approved tolerances for the fungicide pyraclostrobin (Cabrio®/Headline®). Tolerances of importance in Florida include berry (group 13). (Fed. Reg., 9/26/07).

Vegetables & Herbs

* Based on a request by IR-4, tolerances for residues of the insecticide spiromesifen (Oberon®) have been approved. Tolerances of importance to Florida include: fruiting vegetables. (Fed. Reg., 1/24/07).

* Cerexagri has submitted an experimental use permit (EUP) application to the EPA for the use of its soil fumigant dimethyldisulfide (DMDS) for outdoor use on 500 acres of eggplant, pepper, tomato, strawberry, and squash in FL, GA, and NC. (Fed. Reg., 3/7/07).

* Tolerances have been accepted for the herbicide sethoxydim (Poast®). Tolerances of importance to Florida include root and tuber vegetables (group 1), radish, turnip, okra, and dillweed. (Fed. Reg., 2/28/07).

* The EPA has once again approved a Section 18 specific exemption in Florida for the use of thiophanate (Topsin® M) on fruiting vegetables to control white mold. The exemption will expire on 4/12/08. (FDACS letter, 4/9/07).

* Sovran fungicide (kresoxim) has been approved for use on cucurbits to control powdery mildew and gummy stem blight. The EPA registration number for the BASF product is 7969-154. (The Grower, May 2007).

* The EPA has approved conditional tolerances for the insecticide chlorantraniliprole (Coragen®). Tolerances of importance in Florida include celery, cucumber, lettuce (head and leaf), pepper, spinach, squash, tomato, and watermelon. They will expire on May 1, 2010. (Fed. Reg., 5/16/07).

* The EPA has approved tolerances for the herbicide clethodim (Select®). Tolerances of importance in Florida include herbs (subgroup 19A), leafy greens (subgroup 4A), and legume vegetables except soybean (group 6). (Fed. Reg., 5/9/07).

* The EPA has approved tolerances for the herbicide pendimethalin (Prowl®). Tolerances of importance in Florida include beans and pea, celery, cucumber, lettuce (head and leaf), pepper, spinach, squash, tomato, and watermelon. (Fed. Reg., 5/16/07).

* On June 18, the Florida Department of Agriculture and Consumer Services (FDACS) authorized the experimental use of the insecticide chloran-
tranilprole (Coragen®) in celery, cucumber, pepper, squash, tomato, watermelon, and other crops. The permit is EPA EUP No. 352-EUP-170 and is authorized through May 4, 2009. (FDACS letter of 6/18/07).

- Based on a request by IR-4, the EPA has approved tolerances for the herbicide lactofen (Cobra®). Tolerances of importance in Florida include okra and fruiting vegetables. (Fed. Reg., 6/20/07). Note: This is a Third Party Registration.

- Based on a request by IR-4 and Bayer CropScience, the EPA has approved tolerances for the insecticide imidacloprid (Admire®). Tolerances of importance in Florida include fresh herbs. (Fed. Reg., 6/20/07).

- The EPA has granted Syngenta’s Actara® and Platinum® (thiamethoxam) insecticides expanded labels that allow higher applications rates and use on additional vegetable crops. The new crops for Actara® include fruiting vegetables, cucurbits, leafy vegetables, and brassica crops. New crops for Platinum® include leafy vegetables and brassica crops have been added. (Syngenta Release, 6/19/07).

- On June 11, the FDACS authorized the experimental use of dimethyl disulfide (Paladin®) as a soil fumigant in cucurbits, pepper, strawberry, and tomato. The permit is EPA EUP No. 4581-EUP-1 and is authorized through May 1, 2008. Maximum area of treatment is 200 acres. (FDACS letter of 6/11/07).

- Based on a request by Dupont, the EPA has approved tolerances for the insecticide indoxacarb (Avaunt®). Tolerances of importance in Florida include sweet corn, okra, mint, soybean, leafy brassicas (group 5), cucurbit vegetables (group 9), fruiting vegetables (group 8), leafy vegetables (group 5) and tuberous and corm vegetables (group 1C). (Fed. Reg., 7/11/07).

- The FDACS has approved a Special Local Needs (SLN) registration for the use of imidacloprid (Provado®) applied by low pressure chemigation in watercress. The registration is FL-070004. (FDACS letter of 8/30/07).

- Based on a request by IR-4, the EPA has approved tolerances for the insecticide lambda-cyhalothrin (Karate®/Warrior®). Tolerances of importance in Florida include cucurbit vegetables (group 9), and tuberous and corm vegetables (subgroup 1C). (Fed. Reg., 8/15/07).

- Based on a request by IR-4, the EPA has approved tolerances for the insecticide pyriproxyfen (Knack®). Tolerances of importance in Florida include banana, pineapple, potato, sugarcane, bulb vegetable (group 3) except bulb onion, and root and tuber vegetables (group 1). (Fed. Reg., 8/15/07).

- Based on a request by GB Biosci- ence Corp., the EPA has approved an edible-podded pea tolerance for the fungicide chlorothalonil (Bravo®). (Fed. Reg., 7/27/07).

- Based on a request by Bayer Crop- Science, the EPA has approved toler- ances for the herbicide tem- botrione. Tolerances of importance in Florida include all parts of the corn (sweet or field) and associated meat animals. (Fed. Reg., 9/28/07).

- Based on a request by IR-4, the EPA has approved tolerances for the herbicide pendimethalin (Prowl®). Tolerances of importance in Florida are brassica head and stem (subgroup 5A) and grape. (Fed. Reg., 9/19/07).

Non-Food Crops

- On March 9, the FDACS authorized the herbicide quinclorac under the EUP FL07-EUP-02 for testing in retention ponds, lakes, and other non-flowing bodies of water where swimming, fishing, and water used for drinking and irrigation are prohibited. The EUP is authorized through
On July 20, the FDACS issued an exemption from the requirement of obtaining an experimental use permit for methyl soyate use on water bodies as a larvicide for mosquitoes. (FDACS letter, 7/20/07).

Other Actions

The FDACS is proposing the addition of *Murraya paniculata* (orange jasmine) to the citrus greening host list. This would prohibit the distribution of this plant from nurseries located in citrus greening quarantine areas. The map is located at: [http://doacs.state.fl.us/pi/chrp/greening/cgmaps.html](http://doacs.state.fl.us/pi/chrp/greening/cgmaps.html)

Although current EU legislation allows up to 0.9 percent adventitious presence of transgenes in organic food, the European parliament voted to lower the threshold to 0.1 percent when revised organic production and labeling standards are introduced later this year. (Pestic. & Toxic Chemical News, 4/9/07).

Minor crop producers and consumers will be the primary beneficiaries of a recent EPA proposal to revise its pesticide tolerance crop grouping regulations, which allow the establishment of tolerances for multiple, related crops based upon data from a representative set of crops. The proposed revision, published in a May 23, 2007, Federal Register notice, would create a new crop group for edible fungi (mushrooms), expand existing crop groups by adding new commodities, establish new crop subgroups, and revise the representative crops in some groups. These proposed changes reflect the global competition for new or ethnic commodities. EPA expects these revisions to promote greater use of crop groupings for tolerance-setting purposes and, in particular, to assist in retaining or making available pesticides for minor crop uses. This is the first in a series of regulatory crop group updates. (EPA OPP Update, 5/30/07).