

**PESTICIDE REVIEW COUNCIL MEETING**

**MINUTES**

**September 25<sup>th</sup>, 2007**

**Florida Department of Agriculture & Consumer Services**

**Doyle Conner Bldg., Eyster Auditorium**

**3125 Conner Blvd.**

**Tallahassee, Florida 32399-1650**

**MEMBERS PRESENT:**

Dr. Brian Hughes, Department of Health (FDoH)

Dr. Rick Hicks, Department of Environmental Protection

Dr. Dennis Howard, Florida Department of Agriculture and Consumer Services (FDACS)

Dr. Keith Tolson, (proxy for Christopher Saranko), Toxicologist

Dr. Mark McLellan, Institute of Food & Agric. Sciences (IFAS)

Mr. Richard Pfeuffer, South Florida Water Management District (SFWMD)

Dr. Mel Kyle, Agricultural chemical industry

**MEMBERS NOT PRESENT**

Dr. Wendy Graham, Hydrologist

Mr. Ed Irby, Environmental groups

Mr. Dave Eggeman, Florida Fish and Wildlife Conservation Commission (FFWCC)

Dr. Christopher Saranko, Toxicologist

Vacant, Grower representative

**OTHERS PRESENT:**

Mr. Andy Rackley, FDACS

Mr. Steve Dwinell, FDACS

Dr. Davis Daiker, FDACS

Mr. Charlie Clark, FDACS

Mr. Mike Aerts, FFVA

Ms. Patty Lucas, FDACS

Mr. Thomas Eberhart, FDACS

Dr. Ashok Shahane, FDACS  
Ms. Marie Lopez, FDACS  
Mr. Paul Rygiel, FDACS  
Ms. Marian Berndt, USGS  
Mr. Paul Moody, FDACS  
Mr. Al Amleh, FDACS  
Mr. William Meeks, FDACS  
Mr. Jake Adams, FDACS  
Dr. Jianqiang Zhao, FDACS  
Ms. Rosanna Barrett, FDoH  
Mr. Brian Katz, USGS  
Ms. Teresa Rygiel, FDACS  
Mr. Tim Wallace  
Mr. Fred McCormack,  
Mr. Gary Mahon, USGS  
Mr. Danny Moore, Levine Fricke

**Opening Remarks:**

Dr. Dennis Howard, Chair, called the Pesticide Review Council (PRC) meeting to order at 9:07am, noting that this is a public meeting and the Council welcomes input; those who wish to comment or make a statement should fill out a speaker request form at the registration table. After introductions of all present, Dr. Howard noted that Dr. Wendy Graham, Mr. Ed Irby, and Dr. Chris Saranko had sent their regrets for being unable to attend. Dr. Saranko will be leaving the Council as he has moved out of state; he requested that Dr. Keith Tolson attend on his behalf today. The Governor's Appointments Office is processing a number of new applications and reapplications for membership on the Council and announcements are expected in the near future.

**Agenda Review and Modification:**

Dr. Howard outlined the agenda and asked if any revisions were needed. No amendments were suggested.

## **Review of Minutes from, May 23<sup>rd</sup>, 2007**

Dr. Howard asked Mr. Thomas Eberhart to outline the suggested amendments to the May 23<sup>rd</sup> minutes. Mr. Eberhart noted two changes suggested by members. A motion to accept the minutes as amended was made by Dr. Kyle and seconded by Mr. Pfeuffer. The motion carried unanimously.

### **Old Business:**

Dr. Howard informed the members that the Nominating Committee had selected a slate of new officers. Mr. Richard Pfeuffer acted as the Nominating Committee Chairman and outlined the nominees to the officer positions: Chair- Dr. Mark McLellan; Vice-Chair- Dr. Mel Kyle; Secretary- Dr. Brian Hughes. Dr. Howard opened the floor to discuss the nomination slate or make other nominations, no comments were recorded. A motion to accept the nominations as presented was made by Dr. Mark McLellan, IFAS and seconded by Dr. Keith Tolson, toxicologist. Dr. Tolson provided the Council with a letter from Dr. Christopher Saranko, toxicologist, with his vote. The Council unanimously voted to accept the plank as new officers. Dr. Howard thanked the current officers and the Nominating Committee for their service.

### **New Business:**

#### *Organization Guideline Changes*

Dr. Howard introduced language to amend the PRC Organizational Guidelines, changing the term for officers from two years to one year (to comport with statutes) and correcting minor typographic errors and outdated agency information. Proposed amendments can be found on the Bureau of Pesticides website at: <http://www.flaes.org/pesticide/pesticidereviewcouncil.html> after review of these changes, Dr. Hughes made a motion to approve the changes, Dr. Kyle seconded, and the motion carried unanimously.

### **Agency Status Reports:**

#### **FDACS, Agricultural Environmental Services**

##### *Director's Report*

Mr. Andy Rackley, Director of Agricultural Environmental Services, addressed the Council on two future issues of particular significance to the Department: potential pesticide impacts on air quality and dealing with fertilizer management on the local level. Mr. Rackley discussed recent cuts in the state budget and the Division's need to make some tough choices. Some programs and efforts will be cut or function in a reduced capacity. The Department has proposed fee increases in all areas that the Division of Agricultural Environmental Services regulates. While the legislative body is making cuts, we also have a body that is requesting we become self sufficient; however, the legislators have not yet given us the authority to increase those fees. These cuts could have an impact on our ability to provide sound scientific analysis of pesticide issues, and the affects will be felt whether your interests are environmental or product-based. The expertise of this Council can help to counter these cuts. While we are still advocating a fee increase, we have had mixed responses from those we regulate. When all is finalized, we expect that the budget will be cut from 8 to 10 percent. We will strive to do the things at a level we have done before; however, a few programs are already being considered for cuts. The first is mosquito control programs where we provide back-up aerial applications. Also, we may be forced to cut air quality analysis projects. As the budget develops, the Department will keep an open dialog with industry and concerned parties.

### **FDACS, Bureau of Pesticides**

#### *Bulletins Live! Website*

Dr. Davis Daiker gave an update on the Environmental Protection Agency's new "Bulletins Live!" website which allows pesticide users to access endangered species protection bulletins. This website has now gone live and a tutorial was included in the member handouts. This website differs from the Department's previous approach of developing county bulletins at the state level, in that EPA has now taken over the production and distribution of the bulletins, with state input. The endangered species risk determinations will be conducted during pesticide registration or registration review activities, and if the agency determines that mitigation is necessary, the label would direct the pesticide user to this website. In turn, the website would provide the active ingredient-specific mitigation requirements for specific species in a specific geographic area of a specified county.

Dr. Daiker ran through the website with a step-by-step example. The site can be accessed at <http://www.epa.gov/espp/bulletins.htm>. Dr. Daiker listed a few pesticides that are likely candidates for the development of county bulletins: aldicarb and nine rodenticides included in the EPA re-registration review and pesticides that are currently the subject of consultation between the U.S. Fish and Wildlife Service and the USEPA, such as, atrazine or carbofuran. Dr. Daiker noted that any website that is referred to through a pesticide label is fully enforceable from a compliance standpoint.

Mr. Mike Arts, FFVA, asked Dr. Daiker, “Who is responsible for putting together the species/habitat/time of year overlay for each of these thousands of scenarios?” Dr. Daiker stated that it would be the responsibility of the EPA, but FDACS will be proactive in reviewing the maps for species habitat. The Florida Natural Areas Inventory has provided species range maps that will be used to ensure correct bulletins. Mr. Aerts stated that some of the maps were developed in the late 80’s and early 90’s. Dr. Daiker agreed that some will be dated.

Dr. Dennis Howard stated that EPA has painted a broad brush and they will use a more conservative mitigation if current data is unavailable. The maps can be refined when more complete pesticide use patterns and species range become available. The Department will be ready when the first bulletin is issued and to assist in this complex matter. Mr. Aerts stated that he was concerned that while the website is not label language, it is fully enforceable. He also pointed out that Hillsborough County was not listed in the drop down list for Florida.

Dr. Brian Hughes stated that not all labels will have this website listed. Will it be only the ones that fail tier 1/tier 2 assessments in regard to environmental problems? Dr. Daiker stated it would not be from a tier 1, but if they make a determination, EPA will consult with Fish and Wildlife Service to see if a true risk exists to a specific species. The bulletins will be product- based, not active ingredient based and applies only to pesticides used outdoors.

#### *Southwoods Elementary Air Quality Report*

Mr. Paul Rygiel summarized South Woods Elementary air quality issues and discussed reports issued by the Pesticide Action Network of North America (PANNA), MACTEC (a consulting firm hired by the St. Johns County School District), and the FDACS. This issue was introduced to the PRC at the May 23<sup>rd</sup> PRC meeting, when the Council was informed that an activist group gave a seminar on pesticide air quality to a group of citizens. A St. Johns County

School District high school teacher attended the seminar and encouraged her students to do a science fair project on the issue of spray drift near schools.

The students acquired test methodology and equipment from PANNA and proceeded to gather air sample data in the vicinity of South Woods Elementary School. On December 6<sup>th</sup> to December 14<sup>th</sup>, eight 24-hour samples were collected by the students from a residence located 0.3 miles from the school after permission to use school grounds for that purpose was denied. The students collected samples from a distance of about 63 feet away from an agricultural field, which approximated the same distance that an agricultural field was from the edge of the school property. The PANNA report concluded that potentially unsafe levels of endosulfan and diazinon were detected in the air. That conclusion was based on a comparison of the maximum detected levels to health-based concentrations derived by PANNA (*i.e.*, reference exposure levels). The PANNA conclusion also assumed that a 1-year old child was continuously exposed for 24-hours to the maximum detection level.

MACTEC also conducted air sampling and produced a report on its findings. Three eight-hour indoor samples and three eight-hour outdoor samples were collected by MACTEC at the South Woods Elementary School property. They did not detect any pesticides in air at the school property above the Maximum Detection levels (MDLs). The MACTEC MDLs were higher than the highest detection levels reported by PANNA. The MACTEC report compared the MDLs (levels at which pesticides were not detected) to the occupational threshold values for these compounds.

MACTEC also collected and tested soil samples at the school for endosulfan and diazinon. Some of the soil samples contained endosulfan and diazinon, but none contained trifluralin. However, the detected levels were approximately 1000 times lower than the respective Florida residential Soil Cleanup Target Levels (SCTLs). Based on the MACTEC air and soil sample results at the school, and the low levels detected by PANNA near the school property, MACTEC concluded that no unacceptable risk exists at the school.

FDACS compared the PANNA and MACTEC reports by examining study designs, analytical results, and data interpretation. FDACS then independently evaluated the potential health risks at the school by comparing the detections in both reports to health-based comparison values that are used by various federal authoritative bodies (*e.g.*, USEPA, ATSDR, and DOE).

In addition, FDACS calculated “margins of exposure” for endosulfan and diazinon, using a formula employed by the USEPA in its human health risk assessments.

FDACS concluded that the pesticide levels in the air do not pose a health threat. The maximum detected levels were below all of the located health-based comparison values established by the various US federal agencies for those compounds. There were no apparent adverse health effects reported at the school in connection with nearby agricultural activities. There was no unacceptable risk based on the margin of exposure calculation used by the U-EPA. There was no conclusive evidence from the PANNA or MACTEC reports, scientific studies, or incident reports that similarly low levels of these pesticides in the air cause adverse health effects.

Further, no agricultural misuse was found following an agricultural use inspection conducted by the FDACS Bureau of Compliance Monitoring. The USEPA has concluded that there is a reasonable certainty that no harm should result to children or adults when the pesticide products are used as directed on the product labels. PANNA overestimated the risk by assuming that a one-year old is continuously outdoors near the edge of an agricultural field for 24 consecutive hours. They also assumed that the child is continuously exposed to the maximum detected concentrations, and they did not use USEPA methodology to calculate a “human equivalent dose” that accounts for physiological differences between lab rodents and humans. Moreover, PANNA’s report likely represents high-end exposure levels, since applications occurred during sampling and since the pesticide labels permit the grower to apply these products only a few times per year.

FDACS located a federal health-based comparison value for endosulfan of 21,000 ng/m<sup>3</sup>. This provisional USEPA reference concentration represents a level considered by the US EPA to be safe over continuous chronic or lifetime exposures, even for children and other potentially sensitive individuals. Both the highest endosulfan level reported by PANNA of 626 ng/m<sup>3</sup> and the detection limit reported by MACTEC (at which endosulfan was not detected; 3,300 ng/m<sup>3</sup>) are below the federal comparison value of 21,000 ng/m<sup>3</sup>. For diazinon, FDACS located federal health-based comparison values of 10,000 ng/m<sup>3</sup> (ATSDR intermediate-duration Minimal Risk Level) and 3,300 ng/m<sup>3</sup> (chronic screening value used by USEPA regions 3, 6, and 9). Both the highest diazinon level reported by PANNA of 897 ng/m<sup>3</sup> and the detection limit reported by

MACTEC at which diazinon was not detected (2,100 ng/m<sup>3</sup>) are below the respective federal comparison values of 10,000 ng/m<sup>3</sup> and 3,300 ng/m<sup>3</sup>).

FDACS submitted its report for comment to various agencies, including the USEPA, FDEP, FDoH, among others. A complete list including all of the various parties receiving the FDACS report can be found in the presentations of the PRC, September 25<sup>th</sup>, 2007 on the FDACS website: [www.flaes.org](http://www.flaes.org).

Dr. Howard added that it was in the Department's interest to pursue further studies as air quality issues will likely become more frequent. Schools are now being located on former agricultural lands, which tend to be less expensive than alternative types of property. This situation may create the potential for conflict between growers and school groups. FDACS and IFAS are seeking grant money through Region 4 in an effort to facilitate communication between the affected parties.

### **Pesticide Issues & Inventory Reports: Florida Department of Agriculture and Consumer Services**

Dr. Howard explained that this session is intended as a forum for each PRC member to give an itemized report of pesticide related issues that the state may be facing in the future. A list of 15 issues of interest to FDACS was presented, as follows:

- **FDACS Budget-** Funding for sustainable pesticide regulatory programs is a major issue, with impending budget cuts. We are seeking fee increases to replace dwindling general revenue funds.
- **Soil fumigant risk mitigation-** The USEPA has determined that soil fumigants currently in the re-registration process (e.g. methyl bromide, chloropicrin) pose unacceptable risks to bystanders. A number of mitigation measures have been proposed to keep this risk to an acceptable level through monitoring and management plans. USEPA options include extensive buffers that may be difficult to implement. Agricultural practices and regulatory oversight will need to adjust for continued use of these chemicals as well as for uses of new soil fumigants such as iodomethane.
- **Organic arsenicals-** These herbicides are approaching a regulatory crossroads. FDACS is awaiting the EPA's decision on re-registration of these chemicals. The Department

remains in contact with the MAATF regarding a prospective groundwater study to determine the impacts of arsenicals on ground water.

- **Farm worker protection-** Compliance: some elements of worker protection regulations continue to pose challenges; the Department will explore efforts to address this issue.
- **Groundwater protection-** Efforts to prevent pesticide contamination of ground water resources remains a priority. Monitoring efforts are in place at the Lake Wales Ridge and registrants are conducting field studies for several compounds.
- **Pesticide drift near sensitive sites-** Efforts are underway to develop good neighbor practices to improve communication and reduce the potential for conflicts between growers and bystanders.
- **Colony collapse disorder** – To what extent if any are pesticides linked to colony collapse disorder in honey bees? Is additional mitigation to protect honeybee colony health?
- **Citrus greening-** This serious disease of citrus currently can only be controlled through additional reliance on pesticides. Is there evidence of adverse effects from increased use?
- **Urban pesticide use-** Trends towards urbanization continue in Florida, but most efforts to understand potential environmental impacts of pesticides focus on agricultural sources.
- **Endangered species protection** – As EPA begins to implement endangered species protection efforts through pesticide product labels, Florida stakeholders will be watching to determine if benefits can be derived from state input to refine federal mitigation statements.
- **Mosquito control** – What efforts are underway to reduce the potential for detrimental effects of mosquito control pesticides on human health and the environment?
- **Electronic labeling-** Pesticide labels contain legally binding instructions for users. Labels traditionally are affixed to containers, but labels in electronic form are becoming more popular. EPA is considering a new approach for label distribution, wherein the container label provides only key elements while directions for use and advisory statements are accessible via a URL on the container. What are the benefits and drawbacks of this approach?

- **Control of nuisance wildlife** – FDACS and the Florida Fish and Wildlife Conservation Commission have been communicating to reduce potential conflicts between state pesticide regulations and FFWCC regulations to control nuisance wildlife such as moles and gophers.
- **Pesticide analytical laboratory capabilities-** The Bureau of Pesticides Laboratory Section is unique in Florida in that it is able to identify a wide variety of pesticides in an array of environmental matrices and at concentrations that can vary from parts per hundred to parts per trillion. A presentation on the Lab’s services and a tour of the facility may be of interest to the Council.
- **Post-harvest food safety-** Florida industry and researchers are working to identify anti-microbial products that can be used in packinghouses to enhance the food safety of harvested fresh vegetables.

### **Pesticide Issues & Inventory Reports: Agriculture Chemical Industry**

Dr. Mel Kyle reported on pesticide-related issues of concern to the agrichemical industry. Given their intertwining relationships, many of these issues are of interest to growers, as well.

Historically the Ag chemical industry with its crop protection products (pesticides) has played a significant role in providing plentiful food, fiber and good health to the world. Most recently an energy component of crops has come to the forefront. Protecting crops such as corn, whether for food or for ethanol production, is important to our society. With the energy component we may be looking at other registration alternatives and considerations where the crop would not go into the food chain. Pesticides are a critical crop protection tool that is constantly under scrutiny for environmental and human health risk. Enhancing the public perception of pesticides and ensuring that the best science is applied to the decision-making process for getting new products registered or having existing products reviewed are certainly two important umbrellas under which a number of pesticide projects and issues would fall.

At this time, in Florida we do not have a high profile pesticide-specific issue; however, some general cultural and use issues do impact pesticides and their use in Florida, as follows:

- **Urban-Agriculture Conflicts** - Florida’s rural lands are impacted as development pressures continue to increase. With the urban sprawl moving into agricultural and rural areas, the available farmed/production acres are at risk. The farming industry is now

next-door to urban developments with their infrastructure of schools, day care, shopping centers, and subdivisions. Large scale pesticide use is a critical crop protection/production practice that is often misunderstood, and taken out of context with this close exposure to the urban environment. In a recent case in Florida, an activist group, PANNA helped high school students in a science fair project studying pesticide drift near an elementary school with a neighboring farm. The data interpretation by PANNA and as reported in the press, characterized the potential exposure to school children as harmful, which may have caused undue alarm among the local community. While EPA and FDACS showed that the PANNA science was flawed and there was no real human health threat, perception of a harmful Ag Industry practice is already in place and very difficult, if not impossible, to abate.

- **Invasive pests-** With modern travel and transport technology in our now “flat world” with “free trade” practices; endemic and contained pest and diseases are being rapidly spread to other areas, including Florida, in a relatively uninhibited manner. Two recent Florida examples are citrus greening bacterial disease in citrus and orange rust fungus infestations in sugarcane. Pest management programs and products are needed to deal with these new pests. Also, we are looking for new pesticides and application strategies for existing pesticides to control the Asian citrus psyllid that causes the spread of the citrus greening bacteria and the citrus leaf miner that makes trees more susceptible to canker infections. No fungicide is presently registered to manage the orange rust fungus in sugarcane.
- **Organic arsenical herbicides** - The PRC has been effectively updated on the EPA re-registration evaluation for these products by Dr. Davis Daiker, FDACS. EPA has determined that the organic arsenical herbicides are not eligible for re-registration. Comment period on this decision was closed in January 19, 2007 and the industry is awaiting the final decision by EPA.
- **Methyl bromide phase out and alternatives-** Methyl bromide (MeBr) is an odorless, colorless gas that has been used as an agricultural soil and structural fumigant to control a wide variety of pests including insects, nematodes, weeds and pathogens. Because MeBr depletes the stratospheric ozone layer and is classified as a Class 1 ozone-depleting substance, the amount of MeBr produced and imported in the U.S. was

incrementally reduced until the phase-out took effect in January 1, 2005, except for allowable exemptions. These exemptions include the Quarantine and Pre-shipment (QAPS) exemption, to eliminate quarantine pest and the Critical Use Exemption (CUE) designed for agricultural users with no technically or economically feasible alternatives. The industry is actively seeking alternatives to MeBr.

- **Worker protection-** Issues such as enforcement and management of WPS (federally mandated standards) continue to be problematic and costly to the grower. Worker safety and exposure issues continue to pose litigation risk and or actions against the grower. While programs are in place to address this issue, the maintenance and operation of the program must have annual funding approvals.

### **Pesticide Issues & Inventory Reports: Florida Department of Environmental Protection**

Mr. Rick Hicks noted that although FDEP is not directly involved in pesticide regulation, there are a number of situations in which pesticide issues are of importance to his Department. These are as follows:

- **PREC reviews** - FDEP has been cooperating with the Bureau of Pesticides in FDACS and the Pesticide Registration Evaluation Committee in the technical review of about 3-4 pesticide registration applications per month. The FDEP Ground Water Protection Section (Rick Hicks and James Dodson) evaluates these chemicals for potential to cause ground water contamination. Drew Leslie, with the Bureau of Invasive Plant Management reviews pesticides that are proposed for aquatic use.
- **Ground water quality field studies-** FDEP can provide technical input on ground water related issues and studies on a number of issues. We have been working with Roger Durham of the Bureau of Pesticides and the MAA Task Force MSMA ground water leaching study and the Curfew (1,3-Dichloropropene) golf course study
- **Contaminated private drinking water wells-** The FDEP Water Supply Restoration Program has been working with FDoH to identify contaminated private drinking water wells. They try to provide alternative drinking water to homes with filters, extend new water lines, and drill new wells that are contaminated with EDB, bromacil, arsenic, and other chemicals. The FDEP Ground Water Delineation Program identifies areas of

ground water contamination to prevent their use as drinking water without adequate treatment. This initiative started with aldicarb and EDB concerns.

- **Invasive plant species management-** The Division of State Lands, Bureau of Invasive Plant Management controls invasive plants on state waters and upland areas. They oversee 9 contractors that maintain control of invasive aquatics statewide. FDEP biologists assigned to 8 regions of the state consult with state parks on aquatic plant management.
- **Cleanup and collection of pesticide wastes -** FDEP's Bureau of Waste Cleanup manages and provides technical input on waste cleanup activities when pesticides and other contaminants exceed cleanup target levels for ground water and soil (Chapter 62-777, FAC). The Division maintains staff toxicologists and contracts with UF toxicologists. They also manage state-funded cleanup of cattle dip vat sites. In addition, the FDEP Household Hazardous Waste Collection Program is available to assist in the collection of waste pesticides.
- **Chemical analyses-** The FDEP Bureau of Laboratories can analyze for conventional and non-conventional chemical analyses of pesticides for FDEP and for cooperative projects. They also provide services for toxicity testing and field bio-assessments. The lab is responsible for quality assurance role in environmental studies and sampler training.
- **Best management practices-** The Bureau of Watershed Restoration deals with non-point source best management practices. Agriculture and golf course best management practices that include pesticide application and mix-rinse practices are of primary concern.

### **Pesticide Issues & Inventory Reports: Florida Department of Health**

Dr. Brian Hughes explained that FDoH is limited in its involvement in pesticides primarily to epidemiology issues, although the Department also includes a section on pesticide exposure and prevention program. Ms. Roseanna Barrett heads this program and gave a report to the Council.

- **Pesticide Surveillance-** Ms. Barrett stated that the pesticide surveillance program is an ongoing effort to prevent exposure to pesticides. The program has direct access to poisoning cases through Florida's Poison Information Center. The section is working on

updating information on occupational cases to allow for inclusion of occupation type and industry. They are also improving the quality of data obtained through workers' compensation sources. Medical submitted cases and claims data are being monitored and improved.

- **Environmental health inspection-** FDoH is promoting more active participation from environmental health inspectors in county health departments. This is being pursued by including language in the migrant housing rule for both field and site inspections that are within FDoH's jurisdiction. Further training of migrant housing inspectors will benefit improvement of data from mainly agricultural-related areas. Educational outreach through health fairs with Catholic charities and community groups has helped with distribution of fact sheets in Spanish and Haitian Creole.
- **Interagency groups-** FDoH would like to remain active on interagency groups such as the Interagency Farm Worker Focus Groups at the Department of Business and Professional Regulation. We want to maintain a dialog with pesticide working group members through transmittal of e-news and conference calls on pertinent issues with stakeholders and interest groups. FDACS provided insight on protective requirements for workers and bystanders from fumigants.
- **Laboratory service needs-** Certain challenges are evident as there are limited resources for program development and expansion to meet public demand. Specifically for local inspectors for health related investigations, provisions for lab services to test for pesticides and their metabolites are needed. This is essential for confirmation of exposure incidents.
- **Public outreach-** Community outreach through education is limited, but will benefit though increasing awareness. Outreach efforts could reflect FDOH's efforts to conduct observational studies on occupational pesticide exposure risks, to survey migrant populations to determine sources of exposure, provide lab services for pesticide testing through state labs for confirmation of poisonings, and to facilitate bio-monitoring and or air quality monitoring program for occupational exposures.
- **Pesticide Usage Data-** Dr. Hughes stated FDoH's goal to acquire pesticide usage data to overlay with health impact data to try and determine any health related issues with

pesticides. This is would assist in testing hypotheses rather than determining cause and effect.

- **Farm worker occupational risks-** FDoH is concerned with the exposure assessments for reentry workers and other occupational risk assessments. Homeland security has developed bio-sensors that will allow us to obtain data in real time for exposure cases. Risk assessments are hard to determine, these sensors will let us know what an individual's exposure actually is. Workers can also wear these and monitor their own exposures.

### **Pesticide Issues & Inventory Reports: University of Florida, Institute of Food and Agricultural Sciences**

Dr. Mark McLellan reported on pesticide-related areas of interest to the University of Florida IFAS. He stated that the legislative budget distributed last week reflected a cut of about \$7 million. Although the University was able to respond to this significant reduction, future reductions will be very challenging to accommodate. Nonetheless, the University is determined to continue programs.

IFAS is involved with pesticides in the air, soil, and water. These issues are broad; but, they affect us across teaching, research, and extension programs. There are about 300 employees in IFAS, operating across 16,000 acres in 67 counties in Florida. The research programs support approximately 350 full-time equivalent faculty members in 16 academic departments and two schools on UF's Gainesville campus, plus 13 research and education centers around the state.

The state of Florida is broken down into five sections, northeast, northwest, south central and south. Dr. McLellan provided an overview of 14 different sites around these districts that provide an overview of what IFAS does. Major pesticide related issues/programs for these sites are highlighted, below:

At the West Florida Resource and Education center in Santa Rosa County, IFAS is intimately linked with a community college as it is literally located on a campus in Milton, FL. This location provides the scope in which we are involved in a teaching environment. It offers large scale field operations in agronomic crops and turf. **(Pest management education)**

North Florida Research and Education Centers are located in Marianna, Quincy, and Live Oak, Florida. The centers offer a diverse research program, including small farms where people

are coming to the state to start a farm. They bring with them resources and skill sets which are not typical when someone starts out in agriculture. This is exciting because it offers a whole new approach on how we train people **(Pest management for small farms)**

In Hastings, Florida, we operate our Florida Partnership for Water, Agriculture and Community Sustainability. This organization has recently seen a flush of resources from the state and is focused on agriculture-community partnership. This site will have a small urban community completely designed for capturing of all inputs and outputs, and all water flows. Everything they do will be looking at gaining detailed knowledge on how agriculture and communities come together **(Sustainable agriculture-community partnerships)**

In a compliance capacity we have the Plant Science Research and Education Unit located in Alachua County. It is a very large farm research operation where 100 of our faculty and 450 programs operate at this center.

In Apopka, Florida IFAS operates the Mid-Florida Research and Education Center. This facility is becoming the nexus of the floriculture industry. They try to obtain answers on how to protect the crops and transportation issues. This is also the site of the new termite research facility in terms of demonstration treatments. **(Pest management in floriculture; education on termite control)**

In Brooksville, Florida, we partner with the Subtropical Agricultural Research Station where they conduct cattle research; it is a small operation but one very important to the livestock industry.

The Citrus Research and Education Center near Bartow, Florida is the largest of the IFAS centers. Here, research is conducted on strategies to address challenges in citrus production. The management of citrus greening is very difficult, and although we are doing our best, it remains an ongoing problem. This disease, once started, can decimate the grove. We also must change our production habits to reflect citrus greening's impact of reducing tree lifespan from 25-years to 12-15 year-growth. As a testament to how difficult this issue is, we still have not been able to culture the greening bacteria in the lab. This is one of many problems in understanding the components of infection with citrus greening. **(Citrus greening control and management)**

At the Gulf Coast Research and Education Center, IFAS conducts research on vegetables. This is a bright spot as we have some new faculty members and IFAS is excited in the direction

they are heading. Whether the issue is methyl bromide alternatives or more traditional approaches to pesticides in crops, research here is a major benefit. **(Soil fumigant research)**

Ruskin, Florida is home to our aquaculture laboratory. Researchers there study our water systems whether they are in our natural environment or a controlled area. Further, this is the home of the US tropical fish industry.

The Range Cattle Research and Education Center in Hardee County and is home to about 3000 acres of land for cattle. They do a lot of work on forages along with cattle research. While it is a small center of about six faculty members, it is becoming more popular with graduate students who want to pursue this type of experience.

As citrus begins to move into south west part of the state, we have had growth in the Immokalee, Florida. The Southwest Florida Research and Education Center is supporting the industry and vegetable areas.

Near Homestead, Florida IFAS runs the Tropical Research and Education Center. This center works with palms, star fruits or orchids and has its own mix of issues.

In Fort Lauderdale, IFAS has the Fort Lauderdale Research and Education Center. Termite research and education is a main focus along with pesticide studies that deal with these insects. **(Termite control research and education)**

The Everglades Research and Education Center is located in Palm Beach County and deals with sugar cane. They also have stated research on energy crops.

The Indian River Research and Education Center, located near Fort Pierce, Florida deals with citrus production in a dynamic environment. They are the second largest teaching environment. We are looking to expand this facility into many more aspects.

Near Vero Beach, IFAS runs the Florida Medical and Entomology Laboratory. They look at insect vectors to controls and event the diseases themselves. **(Vector control)**

Dr. McLellan described the efforts of IFAS in three words, discovery, innovation and application. This approach ensures that IFAS can push the envelope of research to obtain new answers.

## **Pesticide Issues & Inventory Reports, Dr. Keith Tolson**

*Toxicologist*

Dr. Keith Tolson, a toxicologist representing Dr. Chris Saranko, informed the Council of toxicological concerns for the PRC to consider. Many of Dr. Tolson issues were already addressed; however, he reiterated the need to address **antimicrobial pesticides**, the **encroachment of urban lands on agricultural areas, and air quality issues**. Dr. Tolson also mentioned the **importation of pesticides from overseas and concerns regarding quality control for pesticide formulations**.

**Nanotechnology** has become an important issue in today's agricultural practices. The pesticide industry is now using this technology to formulate pesticides to enhance their effectiveness. Nanotechnology may affect the fate of pesticides in the environment, in humans and in non-target organisms. This is a potential concern if the nanoparticle interacts with the cell in a different way than the conventional chemical does. They are so small they can attach to the cell membrane and cause effects different that of the intended mode.

**Perchlorate has shown up in a number of food items and is** a big concern in Massachusetts and California. These will be an emerging issue as we move forward.

**Bio-engineered foods** are also of concern. With the introduction of energy crops and their transfer modes is also an issue.

### **Pesticide Issues & Inventory Reports: Water Management Districts**

Mr. Richard Pfeuffer, South Florida Water Management District, provided a report on the water management district's **surface water monitoring programs**. The WMD maintains ambient pesticide monitoring networks which sample 34 surface water sites on a quarterly basis (sediments are sampled biannually). This has been ongoing since 1984, but with the advent of the Everglades Restoration Project, dozens of monitoring programs have been initiated. The WMD takes a conservative approach to these projects and samples for older compounds as well as new ones. Additionally, some groundwater sampling and fish tissue analysis have been added to the different matrices sampled.

The **water quality standards are not applicable** to south Florida. These interpretive tools do not allow us to make quality determinations. The WMD is working hard to produce new tools to compare sample results. Further, we are now **dealing with metals, specifically copper** and how it exists in the environment.

As discussed in the last PRC, we are concerned with the emerging substances.

**Endocrine modulation chemicals (disruptors)** that target a number of pesticides are of interest.

### **Pesticide Issues & Inventory Reports - Discussion**

Dr. Howard suggested the members for their presentations and requested that the Council attempt to prioritize the issues presented. The Council agreed to consider these issues when developing the agenda for the upcoming PRC meetings. In the near future, staff of the Bureau of Pesticides will provide a summary list of issues presented today.

The Council agreed with Dr. McLellan's suggestion that it would be beneficial to compare the capabilities for different laboratories in the state to analyze for pesticides. Given recent legislative budget cuts, this might help to identify areas where efficiencies and coordination could be enhanced, and where diagnostic equipment is needed.

Dr. Howard thanked Dr. Christopher Saranko on his service to the PRC and noted that his participation will be missed. Dr. McLellan led the Council in thanking Dr. Howard for his service as the PRC Chair.

### **Comments from Audience**

An audience member inquired about the membership status of expired and vacant seats. Dr. Howard replied that decisions are expected soon from the Governor's Appointments Office.

### **Adjournment**

The Council determined that the next meeting would be January 15<sup>th</sup>, 2008 in Gainesville. Dr. McLellan's office will reserve a venue on the UF campus. Upon agreement, the meeting adjourned at 12:10pm.