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Agronomy New Faculty Hires

The Agronomy Department is very pleased to announce that four new faculty members have recently joined the department:

**Dr. Ronnie Schnell** (rschnell@ufl.edu) – Assistant Professor in Cropping Systems, West FL REC (Jay/Milton). Dr. Schnell joined the Agronomy Department in November. He received his Bachelor of Science degree in Horticulture and Crop Science from Sam Houston State University in 2002. He received his MS in Agronomy in 2007 and a PhD in Agronomy in 2010 from Texas A&M University. His work has focused on cropping systems and management for enhanced environmental sustainability.

**Dr. Jianping Wang** (wangjp@ufl.edu) – Assistant Professor in Translational Genomics, Gainesville campus. Dr. Wang joined the Agronomy Department in November, 2010. She earned her PhD in Plant Breeding and Genetics from Michigan State University in 2005. She received her MS degree also in Plant Breeding and Genetics, from China Agricultural University, and her undergraduate degree in Agronomy, also from the Agricultural University in Beijing. Before coming to Florida, Dr. Wang was a research associate in the Crop Science Department at University of Illinois, where she led a project on map-based cloning of insect resistance genes in soybean. She has experience working with different plants like rice, maize, papaya, sugarcane, and grasses, among others.

**Dr. Diane Rowland** (dlrowland@ufl.edu) – Associate Professor in Crop Physiology, Gainesville campus. Dr. Rowland is also a campus based faculty that joined the Agronomy Department last August. She received her bachelors’ and doctoral degrees in biology with an emphasis in plant physiology from the University of New Mexico. In the last decade, she has worked as a research plant physiologist at the USDA/ARS National Peanut Research laboratory in Dawson, GA, and most recently with the Texas A&M university system. Her appointment is 30% teaching and 70% research. She will be teaching Advanced Crop Physiology during the spring semester. Her research focus is on crop water use and the development of water-use efficient cropping systems.

**Dr. D. Calvin Odero** (dcodero@ufl.edu) Assistant Professor in Weed Science, Everglades REC (Belle Glade). Dr. Odero joined the Agronomy Department since July 2010. He received his bachelors’ degree in Horticulture in 1997 from Jomo Kenyatta University of Agriculture and Technology in Kenya, and his MS (2005) and PhD (2008) degrees in Agronomy from the University of Wyoming. Dr. Odero brings expertise in the area of weed science and particularly control in glyphosate resistant plants. His appointment is 65% Extension and 35% research. Dr. Odero will be working with sugarcane, rice, sod, winter vegetables, and biofuel crops in organic soils of the Everglades Agricultural Area and mineral soils of southern Florida.
Nitrogen Use on Major Cereal Crops

High yields of corn, rice, and wheat depend to a large extent on fertilizer N for high yields. Global use of commercial N has increased more than 30-fold since 1940 and 100-fold over the last 100 years. Presently, 50% of the world’s population relies on N for food production. About 50% more grain will be required over the next 40 years to feed an estimated 9.3 billion people. This will require more N production and crops which have higher N use efficiency, or more grain produced with less N. Some of the latest genetic technology being worked on is producing more grain or fiber with less applied N. Nitrogen is often the most limiting factor in crop production on non-leguminous crops. It would require 4-6 times more land area to be in production without N fertilizer to maintain current food production. Nitrogen originates from the atmosphere while other nutrients are mined and treated to produce a plant available form of nutrition. However, N from the atmosphere is unavailable and only a small amount is converted to biologically available forms. Atmospheric N is made into readily available forms through a process using natural gas. Nitrogen fertilizer is expensive costing more than $45 billion/year. Crops use N fertilizer inefficiently with as much as 50% of that applied not being assimilated by the crop. The remaining N in the soil is either used by the next crop, <7%, or is lost from the soil/plant system resulting in ground or surface water degradation. Currently N comprises 72% of the fertilizer applied worldwide as compared to 13-16% for P and K. N management will become more critical and will have to be better managed by using proper sources, using nitrification inhibitors. Slow release materials, better placement, foliar applications, balanced with other nutrients, using rotations with N fixing legumes, use of conservation technology for building up organic matter, use of precision farming techniques as well as breeding for improved N used efficiency.
**Soil Tests and Lime Applications**

La Nina conditions this winter will be conducive to making lime applications after soil samples have been pulled. Drier than normal conditions are predicted for the next 3-4 months so lime can be applied even in typically damp areas. It also allows time for the lime to react with the soil to adjust pH for the summer crops. For those growers who use minimum tillage and strip tillage, surface applications are acceptable. We have long term plots that have not been turned or had lime incorporated for over 30 years that are still producing good yields of cotton, peanut, corn and other crops. A high calcium and phosphorus layer can develop in the top 2-3 inches after many years of surface applications of fertilizer and lime but has little or no impact on yields if all nutrients are in adequate supply.

**Forages**

**‘Ocoee’ - New White Clover Release**

Ocoee white clover is a new release from University of Florida. Ocoee is an intermediate type with spreading growth habit that has tolerance to southern root-knot nematode (RKN) (Meloidogyne spp). Drought conditions in Florida accentuates the effect of nematodes on clover establishment, production and persistence. Ocoee was selected from the University of Florida release ‘Osceola’, and has resistance to multiple RKN species. In studies conducted at University of Florida it showed 85% more resistance than ‘Osceola’. Similarly, yields were higher for ‘Ocoee’ (2700 lb/acre) than Osceola (2200 lb/acre) during the 2003-2004 season at the Agronomy Forage Research Unit. Ocoee white clover is an option for farmers with areas that have high nematode populations that negatively impact their yields adding to stand decline. As a white clover, Ocoee is adapted to well drained soils that have good water holding capacity. Ocoee white clover will fix nitrogen and add to the forage quality of the pasture.

Osceola white clover on left with roots affected by RKN nematodes; on the right, RKN resistant ‘Ocoee’ white clover.

Photo by Ken Quesenberry
New Soil Fumigant Toolbox Available

In May 2009, after consulting with stakeholders and obtaining extensive public input, EPA issued Amended Reregistration Eligibility Decisions (REDs) for the soil fumigant pesticides, including final new safety measures to increase protections for agricultural workers and bystanders. Implementation began to occur in 2010 and will continue through 2011. The goal of these measures is to establish a baseline for safe use of the soil fumigants throughout the United States, reducing fumigant exposures and significantly improving safety.

To assist in understanding the new measures, EPA has created a new virtual toolbox for information on soil fumigation, which is available at [http://www.epa.gov/pesticides/reregistration/soil_fumigants/](http://www.epa.gov/pesticides/reregistration/soil_fumigants/). The soil fumigants toolbox now provides easy access to a variety of soil fumigant training, outreach, and other resource materials for applicators and handlers, communities, state and local agencies, and others interested in understanding and implementing the current requirements for safe use of soil fumigants. Key features of the toolbox include safety brochures for handlers of soil fumigants, training modules on the new soil fumigant requirements, templates for soil fumigant management plans, and updated fact sheets on the soil fumigant mitigation measures and implementation schedule. New materials will be added to the toolbox as they become available during 2011.
To follow the link, press “Ctrl” and put cursor over link, and “click.”

**Jan. 8-10**  Ag Connect Expo. Atlanta, Georgia. For more information, please check http://www.agconnect.com

**Jan. 20**  UF/IFAS Cattlemen’s Institute and Allied Trade Show, Kissimmee

**Jan. 29**  AGRItunity 2011, Conference and Allied Trade Show (West Central Florida), Bushnell. For more information, please check http://sumter.ifas.ufl.edu/AGrItunity/index.shtml

**Feb. 6-8**  American Society of Agronomy (ASA) Southern branch meeting, Corpus Christi, TX.