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Agronomy New Faculty Hires

The Agronomy Department is very pleased to announce and introduce to our agronomy community three new faculty members that have recently joined the department:

Dr. Md Ali Babar (mababar@uf.edu) – Assistant Professor, World Food Crops Breeding, Gainesville campus.
Dr. Babar joined the Agronomy Department in Gainesville in July, 2013. He received his bachelor’s degree in agriculture from the Bangladesh Agricultural University. He also received his MS in genetics and plant breeding from the same university. He earned his PhD in plant breeding and genetics from Oklahoma State University in Stillwater (2005). Dr. Babar worked as a corn breeder in Dow Agrosciences before he joined University of Florida. He brings expertise in the areas of plant breeding, stress physiology, genetics and genomics. His appointment is 70% research and 30% teaching. Dr. Babar will develop genetically superior small grain (wheat and oat) germplasms with enhanced tolerance to different biotic and abiotic stresses that are adapted to south eastern USA and other subtropical environments out-side USA.

Dr. Jose Dubeux (dubeux@ufl.edu) – Assistant Professor in Forage Management, North Florida Research and Education Center, NFREC (Marianna)
Dr. Jose Dubeux came to the North Florida Research and Education Center (NFREC) – Marianna in September, 2013. He received his Bachelor’s degree in Agronomy from Universidade Federal Rural de Pernambuco (1990), his MS in Animal Science from the same University (1995), and his PhD in Agronomy from the University of Florida (2005). His appointment is 70% research and 30% extension. Dr. Dubeux has expertise in pasture/forage management, with focus in nutrient cycling in forage production systems. His focus will be to reduce off-farm inputs in forage production systems of Florida, targeting specifically reduction of N fertilizer application by establishing warm- and cool-season grass-legume mixtures. Dr. Dubeux will also address in his program the carbon footprint of cattle production systems in Florida, assessing C storage and greenhouse gas emissions. Long-term goal is to reduce fossil fuel inputs from fertilizer and equipment and to increase sustainability of cattle production systems.

Dr. Patricio Muñoz (pmdelvalle@ufl.edu) – Assistant Professor in Plant Breeding, Gainesville, campus
Dr. Munoz joined the Agronomy Department in July, 2013. He received his Bachelor of Science degree in Forest Engineering, from the Universidad Catolica de Temuco in 2004, Chile, where he is originally from. He received his MS in Quantitative Genetics from the School of Forest Resources and Conservation at University of Florida (2009) and his PhD in Molecular Breeding from the Plant Molecular and Cellular Biology Program, University of Florida (2012). His appointment is 70% research and 30% teaching. Dr. Munoz’s work has focused on development of methodologies for effective implementation of molecular information on Breeding programs. Dr. Munoz will be focusing on development of new cultivars of Alfalfa, Clovers and Bermudagrass. He will be teaching Advanced plant breeding as well as design and analysis of field experiments.
Dr. Rob Gilbert—
New Chair of the Agronomy Department

Starting January 15th, 2014 Dr. Rob Gilbert will begin his role as Chair of the Department of Agronomy.

Dr. Gilbert currently serves as the Center Director of the Everglades Research and Education Center in Belle Glade. His areas of specialization include agronomy, sugarcane, energy cane, bioenergy, and tropical agriculture. He has a bachelor’s degree in Biology from Carleton College, a MS degree in Agronomy from University of Florida, and a PhD in soil science from Texas A&M. In addition to University of Florida, his past appointment list include the US Peace Corps, EPA, Texas A&M University, and the Rockfeller Foundation.

Dr. Gilbert takes the departmental reins from Dr. Quesenberry, Professor Emeritus. Thanks to Dr. Quesenberry, and Welcome Dr. Gilbert!

Weed Science

Weed Control Under Dry Conditions

Dry conditions are currently persisting in the sugarcane production region in South Florida. Weed control in sugarcane is challenging under these conditions. Extended periods of dry conditions not only affect germination and growth of weed species, but also alter herbicide efficacy and weed control strategies. Weed emergence is typically erratic leading to decreased weed abundance under dry conditions.

Weeds present in the field under dry conditions respond to water stress by thickening their cuticles (waxy covering) and by reducing or shutting down growth. Such water stressed weeds are more difficult to control with postemergence herbicides because of reduced absorption and penetration of the applied herbicides into the plant. In addition, there is reduced translocation of herbicides to growing points and inhibition of enzyme systems. This results in reduction in herbicide efficacy and poor weed control. Postemergence herbicide efficacy under dry conditions may be improved by increasing herbicide rate if the label allows, applying the herbicide early in the morning when weeds are most active, applying the herbicide to smaller weeds, and using spray additives to increase herbicide uptake. Information on the additive type, rate and conditions under which to apply is provided in the herbicide label.
Cool-season pastures are an important component of grazing systems. They allow continuation of grazing as the warm-season grasses go dormant during the cool-season. Cool-season forages usually are high in quality and provide nutrients for higher animal performance. Special categories of the herd may also be preferred for cool-season grazing as part of a management decision. Calves, first-calving heifers, lactating cows, and replacement heifers are example of categories that optimize the investment return on cool-season pastures. As we continue the cool-season, however, it is important to manage cool-season pastures properly in order to improve their utilization along the season.

Length of the grazing season on cool-season forages varies with environment and management factors. Planting date, species selection, fertilization plan, and stocking decisions are all important points to consider. Planting date may vary across the state and that will affect the grazing length. If moisture is available, planting date recommendation ranges from Oct. 15 to Nov. 15. Warm autumn and late killing frost delay the planting date for cool-season forages. Management options are available to overseed before the first killing frost (Vendramini, 2012), increasing the length of the cool-season grazing. Longer grazing season is also achieved when early- and late-growth cultivars are combined in mixtures. Small grains such as rye, oat, and triticale combined with annual ryegrass are examples of successful mixtures. If cool-season legumes are used, early (e.g. crimson clover, hairy vetch) and late (e.g. red clover, white clover, ball clover) types may be combined as well. Proper fertilizer application is a key to enhance utilization of cool-season pastures. University of Florida-IFAS recommendation (SL 129) should be used as a guideline. Grazing management is also essential to optimize the use of cool-season forages. Timely adjustment of stocking rate is the most important management tool to increase forage utilization. Producers should try to follow the forage growth curve taking the proper stocking decision when needed. Fine-tuning of herbage allowance may enhance profit in 10-30%. Conserved forage is always important to feed cattle not using the cool-season forages. Increasing cattle turn over due to enhanced nutrition and fertility of the herd are the major results when cool-season forages are used. Proper management and utilization will safeguard these results, reducing risks and increasing profitability of the cattlemen.

References:

Forage Planting in Late Winter/Early Spring

Planting forages that cannot produce viable seed requires that they be planted from vegetative material. In Florida hybrid bermudagrasses and perennial peanut fall into this type of forages. For hybrid bermudagrasses the vegetative material to use can be stolons (also called tops and only recommended to be planted if irrigation is available or during the summer rainy period) or rhizomes (which are technically underground stems and usually referred to as sprigs or roots). In the case of perennial peanut the vegetative material to use will be mainly rhizomes. Planting sprigs in spring has some advantages and some aspects to be aware of.

What are some of the advantages of spring planting?

A. Less weed competition
B. Less heat damage
C. Longer growing season for the newly planted material

Some disadvantages include the possibility of a dry spell in the spring which tends to happen as we move south in the Peninsula.

To guarantee quicker establishment plant as high a seeding rate as possible. Doing so will guarantee quick cover minimizing open spaces, that otherwise will be colonized by weeds.

Planting with dug sprigs can be done from mid January through March.

Weed control is critical in all phases of the planting. First, plant into a well prepared seedbed. Check the field history, to ensure the field you are planting has not received residual herbicides that may still have some activity by the time you are planting. If weeds start coming out, address them early. It is always easier and more cost effective to control weeds when they are at a young stage.

When planting make sure the material is planted deep enough (2 to 4 inches) choose the 4 inches if in very sandy soils. However, take care not to bury the planting material. The rhizomes have a limited amount of reserves to get to the surface and if you buried them too deep the plant ‘reserves’ can be depleted before the plant reaches the surface. Once the plants start emerging and weeds are under control, proceed to do a light fertilization (no more than 30 lb/acre).

For additional information on Forages please check the UF IFAS website Forages of Florida ...
...just Google “Forages of Florida”
Controlling Turfgrass Winter Weeds on Time

Weed control practices are usually implemented more intensively during the spring and summer to maintain turfgrass aesthetics and quality when most people enjoy outdoor activities. Conversely, during the winter, weed control is relegated to an optional practice because outdoor activities decrease and many people assume that winter weeds will senesce and die in the spring, so they will not interfere with the growth of the turfgrass. However, established winter weeds and even their carcasses will indeed shade the turfgrass during the green-up phase, which could cause an uneven green-up, a less vigorous turfgrass, and more importantly, patches without turfgrass cover where summer weeds can easily get established (Figure 1).

Effective winter weed control is an important component of an integrated weed management strategy for promoting turfgrass vigor in the spring. Pre-emergence (PRE) herbicide applications are the most practical way to reduce winter weed problems. These PRE applications must be done in the fall in the second half of October in North Florida and early November in Central and South Florida, when soil temperatures decrease to 55°F. The second phase of the control is to target weeds that survived or escaped PRE applications by spraying them with post-emergence (POST) herbicides. This option is very common because most people use it as a remedial step. Winter weeds such as annual bluegrass (Poa annua), purple cudweed (Gnaphalium purpureum), carolina geranium (Geranium carolinianum), black medic (Medicago lupulina), henbit (Lamium amplexicaule), clover (Trifolium repens) are commonly noticed in late January and early February, when these species are well established and in many cases flowering (Figure 2 and 3). At this point, POST herbicides will have limited effect, and repeated applications will be necessary for proper control. For this reason, early POST applications in December and January are desirable when winter weeds are small and still at early vegetative growth stages. The benefits of spraying the weeds early include: increasing the level of control, reducing the need for repeated applications, preventing the production of new weed seeds, and more importantly, favoring turfgrass vigor in the spring.
Herbicide options will depend on turfgrass and weed species, but it is important to keep in mind that selective herbicides are necessary. A common practice in transition zone and northern states is to use non-selective herbicides such as glyphosate (Roundup®) for winter weed control. This practice is adequate in those areas because turfgrass species such as bermudagrass will become dormant and will not be affected by those herbicides. However, due to Florida's relatively mild winters, the most commonly grown warm-season turfgrass species such as St. Augustinegrass, centipedegrass, zoysiagrass and bermudagrass do not become fully dormant, which makes them susceptible to non-selective herbicides. If sprayed with a herbicide such as glyphosate, warm-season turfgrass species could show symptoms such as delayed green-up, reduced vigor, low density, and dead.

The best way to time winter weed control is to get on your knees and look closely for those small weeds growing within the turfgrass. Once they are big enough that you can see them, it is time to control them. If you wait until they are above the canopy of the turf, you might be loosing your optimum window control.
Topramezone: A New Mode of Action for Aquatic Weed Control

A new tool for weed control will soon be available to Florida’s aquatic resource managers. Topramezone received a full Section 3 label from the United States Environmental Protection Agency in late 2013 and is expected to receive an aquatic label for use in Florida by March 2014.

Topramezone, which is also labeled for post-emergence control of broadleaf and grass weeds in corn, will be sold under the trade name Oasis and is registered by SePRO Corporation. Oasis is a “bleaching” herbicide and works by inhibiting the production of HPPD (4-hydroxyphenylpyruvate dioxygenase), a plant-specific enzyme that plays an important role in carotenoid synthesis.

Carotenoids serve a number of purposes, but one of the most critical is to protect the components of photosynthesis – including chlorophyll – from photodegradation and oxidation. Inhibition of HPPD reduces or eliminates carotenoid production, which allows photosynthetic mechanisms to be disrupted. Similar to other bleaching herbicides, a primary symptom of topramezone damage is bleaching of plant tissues (Figure 1), which occurs within a week of treatment.

Topramezone has a good selectivity profile and provides effective control of a number of weedy species, including fluridone-resistant hydrilla, at low use rates without causing undue damage to some desirable native species such as pickerelweed, coontail and southern naiad. Oasis is the first HPPD inhibitor labeled for aquatic use and thus represents a new mode of action that resource managers can add to the aquatic toolbox. Florida researchers played a critical role in bringing topramezone to the aquatic market, as they participated in extensive testing of the product under an Experimental Use Permit that was issued by the state of Florida in 2008.

Figure 1. Topramezone damage on rotala [see December 2012 issue of Agronomy Notes 36(12):7-8] 9 days after treatment. Note bleaching of new growth.

Photo courtesy of Lyn Gettys.
A unique program is planned for Wednesday, February 26, 2014 (Noon to 4:50 EST). There is an opportunity for licensed pesticide applicators to earn CEUs (FDACS Program # 16706). Licensed applicators will be able to earn up to 5 FDACS-approved CEUs in several categories for recertification credit. The event will be conducted via Polycom and delivered to the remote host sites listed in the table below. Those wanting to attend should contact the local site host for local arrangements. The agenda and CEUs available:

**Agenda**

12:00 – 12:10 PM: Gather, Refreshments, Welcome, Introductions, and Pre-test

12:10 – 1:00 PM: Mark Ritenour, *Pre- and Postharvest Practices to Maximize Quality and Minimize Postharvest Decay and Disorders of Fruits and Vegetables*

1:00 – 1:50 PM: Johannes Lehmann (Cornell University), *Biochar vs. Nutrient Management and Plant Health*

1:50 – 2:40 PM: Kati Migliaccio, *Smart Irrigation Practices to Promote Plant Defense Against Diseases*

2:40 – 2:50 PM: Break

2:50 – 3:40 PM: Donald Dickson, *Status of Plant Pathogenic Nematode Management*

3:40 – 4:30 PM: Wenyuan Song, *Plant Immunity vs. Disease Control*

4:30 – 4:50 PM: Post-test, Survey, and Adjourn

**Available CEUs**

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<td>5</td>
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**New Technology for Commercial Vegetable and Fruit Production (II)**

**Host Sites**

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<tr>
<th>Host Site</th>
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<th>Contact</th>
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<tr>
<td>Indian River Co. Ext.</td>
<td>1028 20th Place, Suite D, Vero Beach 32962</td>
<td>Christine Kelly-Begazo</td>
<td>772-770-5030 / <a href="mailto:ckellybe@ufl.edu">ckellybe@ufl.edu</a></td>
</tr>
<tr>
<td>Lake Co. Ext.</td>
<td>1951 Woodlea Rd., Tavares 32778</td>
<td>Juanita Popenoe</td>
<td>352-343-4101 / <a href="mailto:jpopone@ufl.edu">jpopone@ufl.edu</a></td>
</tr>
<tr>
<td>Martin Co. Ext.</td>
<td>2614 SE Dixie Hwy, Stuart 34996</td>
<td>Yvette Goodiel</td>
<td>772-288-5654 / <a href="mailto:goodiel@ufl.edu">goodiel@ufl.edu</a></td>
</tr>
<tr>
<td>Sumter Co. Ext.</td>
<td>7620 SR 471, Suite 2 Bushnell 33513</td>
<td>Camille E. Esmel</td>
<td>352-793-2728 / <a href="mailto:cami13@ufl.edu">cami13@ufl.edu</a></td>
</tr>
<tr>
<td>DeSoto Co. Ext.</td>
<td>2150 NE Roan St., Arcadia 34266</td>
<td>Anna Beswick</td>
<td>863-993-4846 / <a href="mailto:abeswick@ufl.edu">abeswick@ufl.edu</a></td>
</tr>
<tr>
<td>Volusia Co. Ext.</td>
<td>3100 East New York Avenue, DeLand 32724-6497</td>
<td>Karen Stauderman</td>
<td>386-822-5778 / <a href="mailto:kstauderman@ufl.edu">kstauderman@ufl.edu</a></td>
</tr>
<tr>
<td>Plant Sci. Res. &amp; Ed. Unit</td>
<td>2556 W. Hwy 318, Citra 32113</td>
<td>Mark Kann</td>
<td>352-591-2678 / <a href="mailto:mkann@ufl.edu">mkann@ufl.edu</a></td>
</tr>
<tr>
<td>Jackson Co. Ext.</td>
<td>2741 Pennsylvania Ave., Marianna 32448</td>
<td>Joshua Thompson, Doris Williams</td>
<td>850-482-9620 / <a href="mailto:j.thompson@ufl.edu">j.thompson@ufl.edu</a></td>
</tr>
<tr>
<td>Indian River Res. &amp; Ed. Center</td>
<td>2199 S. Rock Rd., Ft. Pierce 34945</td>
<td>Ken Gioeli, Ed Skvarch</td>
<td>772-462-1660 / <a href="mailto:ktgioeli@ufl.edu">ktgioeli@ufl.edu</a></td>
</tr>
<tr>
<td>North FL Res. &amp; Ed. Center</td>
<td>155 Research Rd., Quincy 32351</td>
<td>Alex Bolques</td>
<td>850-875-7255 / <a href="mailto:abol@ufl.edu">abol@ufl.edu</a></td>
</tr>
<tr>
<td>Osceola Co. Ext.</td>
<td>1921 Kissimmee Valley Lane, Kissimmee 34744</td>
<td>Jessica Sullivan</td>
<td>321-697-3000 / <a href="mailto:sullivan@ufl.edu">sullivan@ufl.edu</a></td>
</tr>
<tr>
<td>Walton Co. Ext.</td>
<td>732 N. 9th St., DeFuniak Springs 32433</td>
<td>Mike Goodchild</td>
<td>850-892-8172 / <a href="mailto:mjgo@ufl.edu">mjgo@ufl.edu</a></td>
</tr>
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Calendar of Events

To follow the link, press “Ctrl” and put cursor over link, and “click.”

Jan 14  Cogongrass workshop. UF/IFAS North FL Research and Education Center http://www.freshfromflorida.com/News-Events/Event-Calendar/Forestry/Cogongrass-Workshop


Jan. 16  Annual Florida Cattlemen Institute & Allied Tradeshow. Arcadia, FL http://www.floridacattlemen.org/events.html


Jan 24-25  AGRItunity Conference and Farm Show. Bushnell, FL

Feb 2-4  American Society of Agronomy—Southern Regional Branch. Dallas, TX. http://www.agronomy.org/membership/branches/southern

Feb 4-5  Florida Ruminant Nutrition Symposium. Gainesville, FL http://dairy.ifas.ufl.edu/ms/

Feb 3-6  Weed Science Society of America Annual Meeting. Vancouver, BC, Canada http://www.wssa.net