Sustainable Agriculture at UGA

Looking forward for this generation and the next...




Fall 2013

As fall brings cooler temperatures and shorter days, new opportunities are opening up for Sustainable Agriculture here in Georgia. In September the J. Phil Campbell Sr. Research and Education Center for Sustainable Agriculture in in Watkinsville was officially transferred to the University of Georia following its closure by USDA-ARS in 2012. The new Center's mission is to support research, teaching and extension on sustainable agricultural systems to preserve the long legacy of conservation agriculture work that had been established by the USDA -ARS.

A number of new CAES research projects have already started at the facility. For example, one study will compare management intensive grazing with conventional grazing in terms of productivity as well as economic and environmental impacts. Another is developing a corn production system that uses clover as a living mulch to supply nitrogen and suppress weeds in corn. Yet another is evaluating whether organic quinoa production is feasible in our area.

The Center is developing several new teaching resources such as the forage garden where students as well as farmers can actually see different types of forages that might be useful. Other faculty will be using the Center to illustrate how different planting techniques or plant densities affect crop production and yields. The Center has always hosted classes

Contents

Upcoming Events

November 2: One USDA Farm Field Days
November 9-10: Growing Farm Profits Workshop
November 11 - Farm to Chef Networking Day
December 9-10: 3rd Annual Carolina Meat Conference
January 15-18: Organic Conference at the Southeastern Fruit and Vegetable Growers Conference

Find more information on these events at www.SustainaAgGa.org

Also find basic principles of sustainable agriculture, Extension bulletins, research publications as well as archived copies of this newsletter at the above website.

and groups to learn how conservation tillage and cover crops can improve soil and water quality, and this will continue.

Extension is also a big part of the Center, which now houses the Oconee County Extension offices, the Sustainable Grazing Systems group, and the Piedmont Beginning Farmers Development Partnership.

We are looking forward to the new opportunities this facility gives us. Stay tuned. We hope to host an open house in the next year.

Julia Gaskin
Sustainable Agriculture Coordinator
Crop and Soil Sciences Department
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Grower's Corner

Kudzu Bugs!

Kudzu bugs (Megacopta cribraria) are a new invasive species from Asia was first detected in the Atlanta-Athens area and have spread quickly through the southeastern United States. Although some people's initial reaction was, "Thank goodness, maybe something will kill that *!*? kudzu." Their hope has quickly been turned to dismay. Although the bug is reported to reduce kudzu growth by 30-50%, it is proving a serious pest for soybeans and can also prove a nuisance for homeowners because they sometimes move indoors to overwinter.

The kudzu bug is a sucking insect that feeds on stems or on leaf veins. They appear to prefer kudzu and soybeans but they have been reported on other legume crops. Dr. Stormy Sparks, Vegetable Extension Entomologist, has received reports and has seen kudzu bugs in snap beans and other beans. Some preliminary data from small plot trials in Tifton indicate, after soybeans, there is a preference for Fordhook lima beans. There is quite a range of adult bugs or the number of egg masses seen in these plots. The highest counts in the lima and snap beans were always found in plants next to the soybean rows.

Crop	# of Adults		# of Egg masses	
	Average	Range	Average	Range
1. Soybean	157	65–240	159	74–332
2. Fordhook lima beans	85	41–180	24	8–65
3. Lima beans	23	0–55	6	0–21
4. Snap beans	12	0–50	0.5	0– 2
5. Cowpea	0.4	0 – 2	0.1	0– 1

Dr. Sparks indicates that in commercial fields, kudzu bugs tend to be on the field edge and frequently are only in a small area of the field. His impression is that although kudzu bugs will move into most bean crops, they may not particularly like them (other than Fordhooks). The populations are extremely low as compared to soybeans and he has not encountered any populations that would justify spraying an entire field, but spraying the field margins might be justified. His greatest concern for larger commercial growers is the potential for harvest contamination, particularly in fields that are machine harvested.

An adult Kudzu Bug

What does this mean for organic farmers? Right now, we really don't know. The kudzu bug could prove a significant challenge for organic soybean growers. Dr. Glynn Tillman, at the USDA Agricultural Research Service in Tifton and Dr. Mike Toews, a Research Entomologist at UGA, have put in a small field trial to evaluate options for organic soybean growers this summer. Trials in North Carolina last summer found both Azera (applied at 48 oz/acre)

and Pyganic (64 oz/acre) were ineffective at controlling the adults or the nymphs in soybeans. Current recommendations for organic soybeans indicated later planted soybeans such as those planted after wheat had lower damage.

Dr. Sparks data indicate the pressure on other bean crops may not be so great. Organic vegetable growers may want to isolate fields from kudzu, soybeans, wisteria, and/or lespedeza and/or not plant beans near field margins where kudzu bugs might overwinter. Planting date has also shown to have a huge effect. Very few kudzu bugs were found on plantings harvested prior to mid-June and those planted after July since this is not the time of year when the adult bugs are moving about looking for hosts. Through a variety of management strategies, this pest's effects can be minimized and sometimes avoided.

Stormy Sparks
Extension Entomologist
University of Georgia
Photos courtesy of Kudzubug.org

Extension

Cross-Cultural Education in Sustainable Agriculture

Extension expertise in sustainable agriculture extends to Africa. In the winter of 2013, Extension Agricultural and Natural Resource agents Bob Waldorf (Banks County) and Sam Ingram (Jackson County) were invited by an organization, Uganda Christian Solutions, to go to Uganda, Africa and teach a group of farmer's agricultural practices to help them become more self-sustaining as well as caring for the land.

Farmers in eastern Uganda faced challenges with soil fertility, insects and diseases; consequently, their yields were low. These smallholder farmers cultivate their land with a hoe and their hands, typically farming between 1 and 5 acres per family. There is no mechanical equipment, no grain storage facilities, and no electricity for modern equipment. The crops include banana, sweet potato, cassava, maize, coffee, pineapple, banana, tomato, sugar cane, peas, millet, sesame, and rice. Some farms also have small numbers of goats, cattle, poultry, and swine.

The project's goal was to bring lead farmers from six different areas of the country together to learn new farming practices. The farmers would act as mentors, implementing these practices on their own farms and then teaching their neighbors how to raise crops using the same techniques.

Sam Ingram with the translator, talking about planting instructions for various crops

Bob and Sam traveled to the east side of Uganda to a city called Mukono in June. They conducted a two-day Sustainable Agriculture Workshop for 16 Uganda farmers. The workshop covered key principles of sustainable agriculture. Crop rotation, cover crops, and composting were discussed as ways to build soil fertility. Better techniques for planting and seed selection were discussed. Participants also learned about how to scout for insect and disease pests as well as how to use pesticides safely if these were necessary. Finally, they discussed farm budgets as ways to evaluate if their farm was economically sustainable. This entailed partnering with the Small Business Development Center (SBDC) in Georgia to craft a farm budget worksheet specific for these small-holder farms so they could track expenses and incomes. A half-day field demonstration focused on proper planting techniques and weed control. After the workshop, graduation certificates were presented to the farmers before they began their journey back to their homes.

After the workshop, Bob and Sam traveled with a local leader/interpreter throughout the country, visiting the farms of the workshop participants. They were able to observe the farming practices of the farmers and offer advice on how to implement the practices taught at the workshop on a particular farm.

The participating Ugandan farmers with their certificates of completion

Although the crops and growing conditions in Uganda are different than Georgia, these agents' experiences with the key principles of sustainable agriculture allowed them to work with these lead farmers in Uganda to help them adapt and improve their local knowledge and hopefully improve their farm's productivity and the farmer's quality of life.

Bob Waldorf
Banks County Extension Agent
University of Georgia
Photos: Bob Waldorf

Cultivating a Sustainable Farming Community in Atlanta

Less than a half hour from the world's busiest airport in Atlanta, a sustainable farming community is being cultivated. Chattahoochee Hills, located in southwest Fulton County, has some of the last undeveloped land within Metro Atlanta and soon, it will be converted to independent farms. Through a private/public partnership, Extension agent Todd Leeson has been hired to help create a farmer co-op that visionary developer Steve Nygren hopes will one day provide fresh food for Atlanta. With his background in commercial vegetable production, horse farms and forestry operations, he is the perfect candidate to help fulfill the vision.

The City of Chattahoochee Hills consists of 65,000 acres, 30 percent of which is being developed into small villages with a high density of homes and apartments while the remainder of the land has been preserved as greenspace. This greenspace will be converted to small organic farms to grow food, jobs, and a thriving community. This concept comes from Europe where people live in small villages surrounded by the farms that feed them.

Serenbe Farm

The sustainable farming community will be modeled on Intervale Center located in Vermont where farmers defray the high costs of farming by leasing land, equipment, greenhouses, irrigation equipment and storage facilities. Beginning farmers learn on small incubator farms and then transition to land they lease or buy.

Five farmers now tend organic farms around the village of Serenbe where they have a community supported agriculture program and a Saturday's farmer's market. With more farmers and greater production, food will be heading north into Atlanta's markets and restaurants.

Serebe's weekly farmers market

The local food movement and renewed interest in farming has made this kind of vision a possibility. With several organizations in Atlanta training people in urban agriculture and with increased student enrollment in the College of Agricultural and Environmental Sciences at UGA, these new farmers will need land and mentoring. Chattahoochee Hills promises to be a place where anyone with a strong interest in farming and the will to work hard can succeed.

Susan Varlamoff
Director of Office of Environmental Sciences
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Photos: Susan Varlamoff

Research

A Snapshot of Ecologically-Based Production from the County Agents' Point of View

Nationally certified organic production has been increasing and demand for organic produce has grown by over 7% every year since 2009. Although agriculture is the largest economic engine in Georgia, certified organic production remains a small fraction of what Georgia farms produce. However, we know that more farms are producing crops organically. Certified Organic farms have increased from 19 in 2002 to 70 in 2012 and Certified Naturally Grown farms have increased from 25 in 2007 to 100 to 2012, giving Georgia the highest number of Certified Naturally Grown farms in the US. Certified Naturally Grown farms use the same production practices as those specified for Certified Organic but these farms are not third party inspected. Farmers selling direct to the consumer are often Certified Naturally Grown, but these farms cannot get the Certified Organic price premium when selling wholesale. Many other farmers who sell directly to consumers are using ecologically-based farming practices that do not use synthetic pesticides. These farms use similar practices to certified organic, but cannot market their produce as organic because they are not certified.

We wanted to get a closer look at ecologically-based production around Georgia and the perceived need by county Extension agents for information about organic and alternative production methods, so we surveyed county Extension agents around the state. For the purposes of this survey, we asked about the use of Certified Organic, Certified Naturally Grown and other ecologically-based practices used on farms. The summary below includes all of these alternative production methods under the term "ecologically-based". This survey targeted farms, so excluded home gardens.

County agents serving 52 counties responded to the survey. Some county agents serve more than one county. Most agents (47%) reported one to five farms using ecologically-based practices in the counties they cover. Twelve percent reported 5-10 farms using these practices. Only two percent indicated more than five farms using these practices. Most counties (66%) had less than 50 acres of ecologically-based production, according to county agent estimates, but twenty percent of agents reported greater than 50 acres in their counties used these practices. The value of production varied. Twelve counties (31% of respondents) reported ecologically-based production of greater than $50,000. A variety of crops were reported, with small fruits (49% of the counties) and vegetables (82%) as the most common, but a large number produced fruit trees (28%), poultry (26%), honey (28%), and cattle (21%).

County agents reported that both the use of ecologically-based production practices and enquiries about this type of production are increasing. Nearly 100% of the respondents indicated that ecologically –based production in their county has stayed the same or increased in the last five years. Questions about these production practices have increased by more than 60% in the last five years. The agents reported there is strong interest and need for information on insects, weeds, and diseases.

In summary, the survey confirms Certified Organic, Certified Naturally Grown and other ecologically-based production is increasing in Georgia. County agents and farmers need more support in terms of research and outreach information specific to

Georgia. The Sustainable and Organic Production Team (SOPT) is a group of Extension specialists and county agents from the University of Georgia and Fort Valley State University that have been working to increase the technical support Extension can provide. Many of these specialists have ongoing research projects to address specific question on disease problems, soil quality, and rotations for organic production. We hope to continue and expand these efforts.

For additional information, contact Paul Guillebeau (bugman@uga.edu) or Julia Gaskin (jgaskin@uga.edu).

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