

Sustainable Agriculture

Looking forward for this generation
and the next...

at **UGA**



Winter 2013

Local food – we are hearing this phrase more and more. Interest in local foods has been growing and many of our leaders are recognizing this is not a fad. I have recently seen reference to this in commercial vegetable production magazines. Commissioner Gary Black has stated that the Georgia Department of Agriculture recognizes this is a way to grow Georgia's economy and that local food is here to stay. So what are we missing in Georgia to grow our local food system?

Although we have large farms in Georgia that do sell wholesale and their products are in Georgia grocery stores, many of the farms supplying consumer demand for local food are smaller scale. Their primary market is direct sales to the consumer through farmer's markets or community supported agriculture (CSAs). These farms do not have the quantity and consistency to supply institutions such as schools or grocery stores by themselves.

Food hubs have been proposed as a potential solution. Food hubs are facilities that aggregate and distribute products from several farms to help supply wholesale markets, although many also have a direct to the consumer component. Some food hubs also further process products. This could include freezing, bagging produce, or canning. Food hubs can also work for animal producers and can help process and distribute meat products. One

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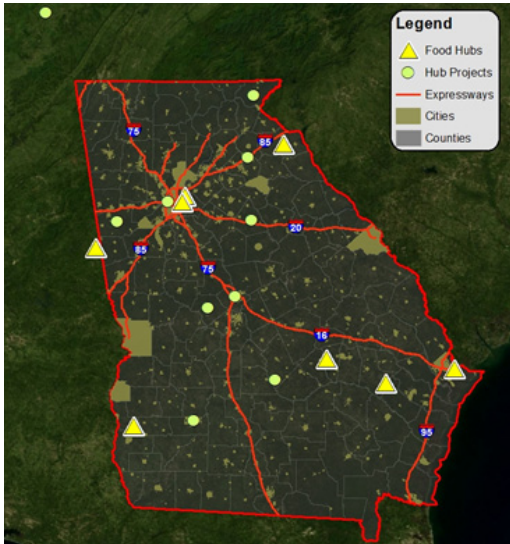
Upcoming Events

- February 27-March 1: 2013 Annual Georgia Agritourism Conference and Annual Meeting*
- March 5: Profitable Marketing for Small Farms*
- March 12: 2013 Conservation Tillage Production Systems Training Conference and Workshop*
- March 14: Water Quality and Fish Health Maintenance in Aquaculture Production Systems*
- March 14: Workshop for Small, Beginning and Limited Resource Farmers*
- March 15: Small Vegetable Growers Workshop*
- May 2: Introduction to Aquaponic Systems and Tilapia Production*

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.

key component of successful food hubs seems to be the ability to match supply and demand. The food hub managers work to determine how much product their buyers want, then work with their growers to supply that demand. This might mean encouraging some growers to try a different crop to prevent oversupply of one crop and not enough of another. The key here seems to be a collaborative process where growers work together with the managers to decide how to allocate crops. Some food hubs use a bid process to get the right mixtures of crops to be grown.



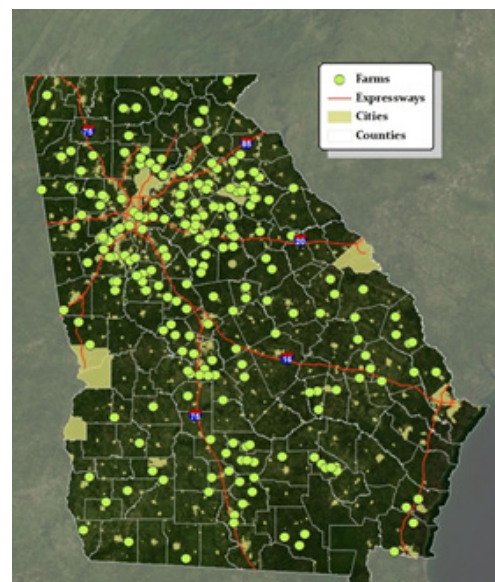
Locations of existing food hubs and projects or working groups that are trying to develop food hubs in Georgia

Because of the interest in food hubs, the College of Agricultural and Environmental Sciences at UGA along with our partners in the Georgia Sustainable Agriculture Consortium conducted two studies this past summer and fall to look at the current situation in Georgia. The first study was to determine if there were businesses in Georgia that already function as food hubs, what products they work with and where they are located in the state. We also determined where there were groups working on developing food hubs.

We found eight businesses that were physical locations that aggregated and distributed products from at least five farms and had a wholesale market component. Seven of these were private enterprises and one was a cooperative. Three focused on meat and five on vegetables as well

as value-added products, such as jams or salsas. Most of these businesses also had a direct sales component through a box program or in-person sales. Like farmers, utilizing several markets allow these businesses to take advantage of several price points and spread risk. The study also found eleven grassroot groups in the state working to develop food hubs.

This baseline evaluation of food hubs and food hub projects in Georgia indicated widespread interest across the state. A food hub cannot exist without farmers, so the next step was to see how many farmers might be interested in this option and what they would like to see in a food hub. Using an online and a paper survey, we tried to reach as many farmers as possible. We heard from 216 different farms from all across the state. Most of these had small fruit and vegetables as one of their major crops, but we also heard from eggs producers, cattle producers and farms with many other crops. Most of the small fruit and vegetable growers had small farms (<5 acres). We heard from growers using both conventional and ecologically-based production methods, but the majority of the respondents reported they were Certified Organic, Certified Naturally Grown or used similar production practices. Nearly all of the farmers had several ways of marketing their crops.



Locations of farmers responding to the food hub interest survey during the summer of 2012

Most of the farmers were interested in marketing and sales services from a food hub, although many were also interested in value-added processing and advertising. Cooling and refrigerated storage was the most important equipment farmers wanted in a food hub facility. The next highest priority was packing containers and labels.

This is a brief taste of the information we obtained. To read the full reports, go to our website – www.SustainAgGA.org and look under Quicklinks.

We hope this will help people interested in developing food hubs have a clearer picture of where to start. More specific information and feasibility studies would be necessary to develop a particular project.

The study would not have been possible without our partners – County Extension Agents, Georgia Department of Agriculture, Georgia Organics, Georgia Farm Bureau, and the Georgia Fruit and Vegetable Growers Association, all of whom helped spread the word and get interested farmers to respond

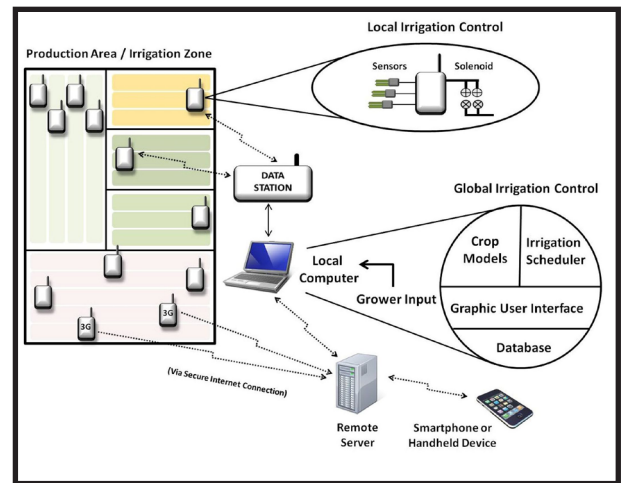
*Julia Gaskin
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Grower's Corner

Revolutionizing Nursery Irrigation

Agriculture uses about 70 percent of the world's fresh water supply, but an increasing population's demand for drinking water means farmers need to learn how to do more with less water. The greenhouse and nursery industry grows in containers where there is little room for root growth. Because of this, frequent irrigation is required, which leads to wasted water and environmental problems due to runoff of fertilizer and pesticides.

A diverse team of researchers from across the country have developed an economically viable system of using remotely accessed soil and weather sensors to help farmers decide when and how much to irrigate their crops. The Smart Farm project uses low-power sensors to relay information to a website that farmers can use to adjust their irrigation plans and schedules based on actual crop water needs, rather than timers or other less precise irrigation control methods.



A graphic representation of the Sensor Network

The team includes University of Georgia horticulture professors Marc van Iersel, Paul Thomas, Matt Chappell and John Ruter, technician Sue Dove, as well as Ph.D. students Mandy Bayer, Alem Peter, and MS student Alex Litvin. They have studied how to best use soil moisture sensors for irrigation control. On farm testing at Evergreen Nursery in Statham, GA and McCorkle Nurseries in Dearing, GA has shown water savings of up to 83%, while saving labor and improving plant quality.

Their system is currently being tested in eight greenhouse and nursery operations in Maryland, Ohio, Tennessee, and Georgia. While the initial trials are on a small scale, the system is designed to be scalable, so that growers can easily expand it.

Dr. John Lea-Cox from the University of Maryland explains, “By making the system scalable, growers can try it out in a small area. If they decide they like it, it will be easy to implement it on a much larger scale”. In order to scale up, the system uses modeling through placing sensors in “indicator

species” to determine the plants with the greatest water requirement in a specific area. The system then irrigates that section according to those needs. This precision allows growers to irrigate at the optimal time when stomata are open and the time for optimal irrigation and growth.



Sensor

The long-term vision is to provide the nursery and greenhouse industries with cost-effective equipment and strategies that can be used to reduce the volume and cost of inputs, increase profitability, reduce the environmental impacts of nursery and greenhouse production and encourage sustainable practices in the United States and beyond. Decagon Devices has partnered with the Smart Farm project to develop commercially-available hardware and software systems to help the horticulture industry implement this new irrigation approach.

This team has already been recognized with a nomination for a Katerva Award. Katerva promotes and recognizes collaborative approaches to solving global problems, and has recognized these researchers’ collaboration to develop hyper-efficient irrigation systems. To find out more about this project and to stay updated, please visit smart-farms.net.

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Reusing Tires for Livestock Watering Tanks and Feeders

The concept of sustainability in livestock operations usually brings to mind niche markets and management intensive grazing systems. Now, watering tanks and feeders can join the

sustainability discussion from both on the environmental and economic perspective. Watering tanks and feeders are a major cost in livestock operations and are usually constructed from petroleum-based hard plastic. New research has shown that reusing large machinery tires can be a great option for watering tanks or feeders since they are durable and aren’t susceptible to freezing. You can save money and help recycle waste products!

The size of the tire you need will depend on the number of animals and the flow of the water supply. For example, the top foot of an 8-foot scraper tier can hold 400 gallons of water (Missouri NRCS). Some general guidelines that livestock operators should look for are: tires that are solid, in good shape and do not have steel components. Steel belted tires do not work since the steel cables make it difficult to cut out the side wall to form the tank or feeder and the metal may injure animals.



Example of a tire tank

Just as the size of the tire is dependent on each situation, so is the construction. All tires should be situated on a gravel pad with inflow and outflow lines placed in the concrete poured on the bottom to hold water. However, some water tanks have all the sidewall removed to provide a large water access area. Others have several holes cut in the sidewall to provide access at different points. Large tires can also be used as feeding troughs. The top sidewall is cut out similar to the watering trough, but a wooden bottom is used so these can be moved around a pasture.

There are two publications that give detailed instructions on constructing a tire tank: “Tire Tanks,” based on guidelines developed by Herschel George from Kansas State University, and “Watering Systems for Serious Grazers” by Missouri NRCS. These can be found on the Sustainable Agriculture website under Resources, Forages and Grazing – www.SustainAgGA.org.

These large tires can be found at tire recyclers. One source in Georgia is Orbit Sustainable Solutions in Oakwood, GA. Contact Nick Thompson at 404-931-3434.

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Photos by Dennis Hancock

FARMERS!

Help UGA Create New Varieties of Fruits and Vegetables!

Have you ever wished your tomatoes were more pest resistant or your watermelons more disease resistant? Well, now you can have your voice heard by researchers who are developing new varieties of fruits and vegetables.

The Vegetable Variety Development survey asks growers about characteristics they prefer in tomatoes, bell peppers, watermelons and sweet potatoes. Responses to the survey will assist researchers in which new varieties to breed.

To take the survey, please visit SustainAgGA.org and look under the Quick Links for, “Vegetable Variety Survey.”

If you have any questions, please contact Kate Munden-Dixon at katemd@uga.edu