

Sustainable Agriculture

Looking forward for this generation
and the next...

at **UGA**



Spring 2016

Across the United States and in Georgia, the number of small and medium –sized farms is declining and the average age of farmers is on the rise. Although we need new farmers, the barriers would-be farmers face when trying to grow new agricultural businesses from the ground up can be formidable. One of these barriers can simply be lack of knowledge if a new farmer does not come from a farming background. UGA Extension and partners have developed a new **Journeyman Farmer Certificate Program** for beginning farmers to meet this need. This project is funded by USDA NIFA Beginning Farmer Rancher Development Program and includes three training steps:

1. Small Farm Business Planning,
2. Small Fruit & Vegetable Production or Small Ruminant Production, and
3. Hands-on Production Training.

The Journeyman Farmer training is aimed at people who want to start a farm or those who are just beginning to farm. The program focuses on teaching new farmers how to build a sustainable farm operation. It begins with business training because we have seen too many of our new farmers who love to grow, forget the basics of a farm business and become frustrated when they don't seem to be rewarded for their hard work. After all, making a profit and staying on the farm is a necessary though not a sufficient condition of being sustainable. Once participants have successfully finished the business training, they are eligible to take the

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Upcoming Events

- May 4, 2016 - Small Livestock for Backyard Farmers
Conyers, GA
- May 10, 2016 - Beginning Pork Production Meeting
Madison, GA
- May 20-21, 2016 - Urban Ag Field Day
Lawrenceville, GA
- June 2, 2016 - Alfalfa Workshop and Field Day
Gainesville, GA
- June 18, 2016 - Pollinators 101
Columbus, GA
- September 20-22, 2016 - National Small Farm Conference - Virginia Beach, VA

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

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

production training offered in their area. Finally, after completing the production training, they can apply for an internship that has a small stipend or have a farmer mentor assigned to help them with specific problems on their farm. This hands-on training completes the Certificate program.

The Journeyman Farmer Certificate Program will provide a good foundation for new farmers interested in small fruit and vegetable production or starting a sheep or goat farm. The program will be offered in four locations around the state beginning in August. Mark your calendars and contact these Extension offices to register and for more details. **Remember, you need to sign up for the business training to participate in the production training and to be eligible for the hands-on training.**

Carroll County Extension (contact: Paula Burke - pjburke@uga.edu):

AgAware Small Farm Business Training – August 19th

Small Ruminant Production Training – January 10 – February 28; Tues evenings

Screven County Extension (contact: Ray Hicks - rhicks@uga.edu):

AgAware Small Farm Business Training – August 5th
Small Ruminant Production Training – Nov 3 – Dec 1, Sat Dec. 3; Thurs evenings

Dougherty County Extension (contact: James Morgan - morganjl@uga.edu):

Small Farm Business Development: Aug. 16, 18, 23, 25 from 9-noon
Small Fruit and Vegetable Production: Jan. 17, 19, 24, 26 9-3 p.m.

East Metro Atlanta Fulton County Extension

(contact: Greg Curtis - gcurtis@uga.edu)
Small Farm Business Development: Fall 2016
Small Fruit and Vegetable Production: Winter 2017

This program is made possible through the partnership of Fort Valley State Extension, Georgia Organics, the UGA Small Business Development Center, the Ag Credit Unions, Georgia Department of Agriculture, and the Georgia Fruit and Vegetable Growers Association. This is a great opportunity. Don't miss it! For more detailed information, contact your

county extension office or visit our website – www.SustainAgGA.org.

*Julia Gaskin
Sustainable Agriculture Coordinator
University of Georgia*

Research

Habitat Provisioning for Beneficial Arthropods

From backyard garden to large scale agronomic crops, our fields are waking up. Winter covers are nearing the point of termination and incorporation, and beds are being prepared for the next planting, or are already planted with cool season crops. Spring is here! On the minds of many is how to best prepare fields for this year's crop. One important consideration is how the areas surrounding crop fields can be used to increase beneficial arthropods.

Non-crop areas of the farm that provide additional habitat for arthropod communities are key to maintaining a healthy and sustainable agricultural system. Non-crop habitat patches are known as “provisioning areas” because they provide sources of food or refuge for beneficial organisms such as pollinators and biological control agents. Maintaining and developing provisioning areas in the farm increases biodiversity of pollinators and biological control agents. More diverse farming systems net higher levels of these natural services such as pollination and biological control. Strategic planning for crop production, includes planning for provisioning areas early in the season. Integrating habitat provisioning into crop design also adds beauty to the garden or landscape.



Small farm in Tifton, GA managed by Bret Wagenhorst containing a diversity of fruit and vegetable crops.

The questions that many ask are where to place provision areas in the farm, and what to plant? For instance, an inexpensive way to develop a provisioning area is to reduce mowing and disturbance around field margins¹ and or plant certain types of native plants that attract beneficial arthropods².



Examples of beneficial arthropods: left - native bee, Eucerini; right - orchard spider, Leucauge sp.

The Southeast has a considerable range of production systems from very small to huge. As with pest management practices, solutions and opportunities for appropriate and effective application of provisioning areas to landscapes is complex. Adding native wildflower areas to the perimeter of backyard gardens is a simple method of increasing diversity at small scales. At the state level or regional levels, a small patch likely has low impact on diversity given that most of the land is in agricultural production.

At large scales in Georgia a recent analysis of land-use suggests that there are over 300,000 acres of land that is deemed low quality or marginal for production of crops³. Marginal areas in Georgia and the southeast are an opportunity for diversification of agricultural landscapes to provide ecosystem services for crop protection and habitat for species preservation⁴.

¹Amaral, D. et al. (2013) Non-crop vegetation associated with chilli pepper agroecosystems promote abundance and survival of aphid predators. *Biological Control* 64: 338-346.

²Fiedler AK and Landis DA. (2007) Attractiveness of Michigan native plants to arthropod natural enemies and herbivores. *Environmental Entomology* 36:751-765.

³Coffin AW, Strickland TC, Anderson WF, Lamb MC, Lowrance RR, Smith CM. (2015). *BioEnergy Research* 1-14.

⁴Moorman CE, Plush CJ, Orr DB, Reberg-Horton C (2013) Beneficial Insect Borders Provide Northern Bobwhite Brood Habitat. *PLoS ONE* 8(12): e83815. doi:10.1371/journal.pone.0083815

At the University of Georgia, Tifton Campus, in collaboration with the USDA-ARS, we are evaluating the combined use of bioenergy feedstocks with native wildflower plants as a method to diversify the cropping system. We are determining the types of native plants and grasses that can be used to diversify agricultural landscapes and promote pollinator and natural enemy diversity. This site is one of 18 sites nationally devoted to Long-Term Agroecosystem Research (LTAR).

Our key goal of this research is to design cost-effective methods for increasing season long habitat areas to promote natural ecosystem services that would lead to sustainable pest management and improved species diversity.



Border plot at Attapulgus Research and Education Center containing a mixture of Southeast specific wildflowers.

*Dr. Jason Schmidt
Assistant Professor
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University of Georgia*

Growers Corner

Modern Marketing Tools

Jeff Bezos (Amazon founder and CEO) once said: “We see our customers as invited guests to a party, and we are the hosts. It’s our job every day to make every important aspect of the customer experience

a little better.” Experience, engagement, long-term commitment, sustainability; these are some of the trends that every business involved in the food sector, including farms, should be investigating. Digital tools, offer a huge potential to help connect with loyal customers. Wisely used, they can also provide strong cement to build a long-term, sustainable and profitable relationship, answering the call for socially and environmentally responsible actions praised in sustainable agriculture.

Starting from scratch and with limited resources, how do small farm businesses take advantage of digital tools such as social media and build a socially and economically beneficial relationship with their customers?

Don't get lost.

Early 2016, 78 percent of U.S. Americans had a social network profile, representing a five percent growth compared to the previous year. According to estimates, the number of worldwide social media users reached 1.96 billion and is expected to grow to some 2.5 billion by 2018. Indeed, social media has huge potential and there are a lot of outlets and types of platforms. On a global level, the market leader is the American social network Facebook; some 1.5 billion accounts as of January 2016. It is followed by many others like Google+, YouTube, Twitter, Pinterest, Whatsapp, and others. As a beginner, it is wise to target the one or two that will help connect with your known customers, and your community. You can grow from there.

Know the singularities.

Every social media tool has particular features. Knowing them, even a little, will help a farmer plan a strategy to reach, to communicate, and to engage his customers. Step one in social media marketing is to listen to the market (Customers,

¹Armstrong & Kotler (2015) Marketing: An Introduction. Pearson Ed.

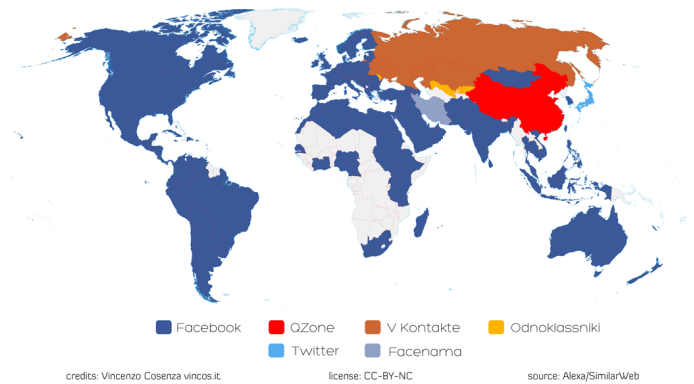
²Source: Statista.com

³https://en.wikipedia.org/wiki/List_of_social_networking_websites

⁴Source: Statista.com

WORLD MAP OF SOCIAL NETWORKS

January 2016



January 2016: a new edition of my World Map of Social Networks, showing the most popular social networking sites by country, according to Alexa & SimilarWeb traffic data (caveat: it's hard to understand the impact of Google+ because it is part of Google domain traffic). <http://vincos.it/world-map-of-social-networks/>

Partners in business, Community...). Google alerts, Twitter search, RSS reader are among the most well-known tools for this. Step two is participation with Twitter or blogs. These two first steps could cover the basics to reach customers. In order to provide opportunities to extend customer experience, get people to talk, to provide feedback to the farm and other customers about the brand, the product and other features. One of the major goals of social media marketing is social sharing, and that is the third and most important step for a business to reach. “Engaged” customers share their experience with “likes”, “tweets” or “posts”. The last step would be about creating a Community, the epicenter of which would be the farm, via Facebook, LinkedIn or Big Tent for example.

What is effective to share?

A recent study gathered a large amount of information using Facebook Insights: the number of Likes and comments, the number of impressions of each message and the demographics of users over 106,000 unique messages across 782 companies located in the United States, between 2011 and 2012. The authors show that using “brand-personality related content”; such as “humor, emotion and discussion of the philanthropic positioning”, does drive more engagement than “direct informative content”; i.e. prices, avail-

ability, and product features. Nevertheless, one additional insight proved a combination of these two forms of content—with fine tuning according to the type of business—to be a balanced tradeoff for establishing customer engagement.



<http://www.thecomicstrips.com/subject/The-Pear-Comic-Strips-by-Bizarro.php>

Building sustainability.

Companies that get the most attention on social media are the ones that are the most active and engaging; they add value to the core of their business. Strategically, they combine digital contents (i.e. social media) with other forms of media (i.e. brochure, display, newspaper ads...), creating a thoughtful integrated marketing strategy which considers both the future welfare of consumers, future business needs, and society's economic and environmental long-run interests. This is the corner stone of the "sustainable engagement" many savvy farmers seek to integrate.

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⁵ Lee, D. & al. (2015) Advertising Content and Consumer Engagement on Social Media: Evidence from Facebook. Working Paper. Stanford Business School. 41p + Appendices.

⁶ The number of users the message is exposed to.

Using Cover Crops to Reduce Runoff and Non-Point Source Pollution

I expect many of you have heard that a good steady rain over a long time period is better than a heavy rain over a short period. One way to visualize this is to think of a dry sponge. Take a sponge, hold it flat and allow water from the faucet to drip onto it for a short period of time. Now take a second sponge and turn the faucet on all the way. What happens? I expect the drip on the sponge allowed the water to soak in, whereas the open faucet caused most of the water to runoff. The soil acts the same way, a slow steady rain typically will soak into the soil whereas a heavy rain runs off. One thing we learn at an early age is that water moves downhill. When it rains, if the soil does not absorb the water, it will flow downhill to lower elevations and can carry pollutants. These pollutants can be the fertilizer applied to grow crops or grass. They can be chemicals to kill weeds or bugs. They can be bacteria from applied or deposited manure. It can also be the soil itself in the form of sediments. When these pollutants runoff the land into drains, gutters, creeks or ponds, we call this non-point source pollution.



Leaving the soil bare during the winter months allows the rain to carry soil off of the field.

Non-point source pollution cannot be stopped, but it can be reduced and greatly slowed down. Farmers have many different ways of reducing the movement of water along with the other pollutants off of their fields. Most of these involve using nature itself. One

of the practices you have more than likely seen is the use of cover crops. During the fallow times of the year, typically winter, farmers will plant cereal rye, clover, or a mixture of seeds. As the seeds germinate and the plants grow they cover the soil and protect it from the energy of the raindrops. To visualize how these cover crops work, think of the last time you were caught in a rainstorm, or try it in the next rainstorm. What hurts more, a raindrop hitting your skin or a raindrop hitting a coat sleeve? The coat sleeve acts like the cover crop in the field, it absorbs the energy of the raindrop and protects the soil, just like the coat protects your arm. Once the energy is absorbed, the water can gently run down the plant and onto the ground where it can soak into the soil. When the plants die in the spring, the plants are not removed from the soil, but rather are allowed to fall or are rolled down to form a mulch in the field similar to adding pine straw to flower beds.



Cover crops in a farmer's field is similar to applying pine straw mulch to a flower bed.

These cover crops provide a very beneficial service in reducing runoff from a field. The growing and dead plants help absorb the energy of the raindrop. As the plant material decays it provides organic matter to the soil which allows the soil to better soak-up more water and therefore, reduce erosion and non-point source pollution movement. Research has shown that along with reducing the movement of off-site movement of pollutants, the use of cover crops helps increase the infiltration of water into the soil profile and like the sponge holds the water longer and makes it available to the plants over a longer time.

So, as you see the rainstorms move across Georgia during the winter months or the spring and summer, know that some farmers are using nature itself to help reduce the movement of pollutants off of the land and into our waterbodies. Even if you are not a farmer, using plants to cover the soil helps absorb the raindrop energy, increase infiltration and reduce the movement of non-point source pollutants off of the land.

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The Journeyman Farmer program provides a comprehensive training for beginning farmers.

Carroll County Extension

Contact: Paula Burke - pjburke@uga.edu

Screven County Extension

Contact: Ray Hicks - rhicks@uga.edu

Dougherty County Extension

Contact: James Morgan - morganjl@uga.edu

Metro Atlanta County Extension

Contact: Lynwood Blackmon- blackmonl@dekalbcountyga.gov



County Extension Offices

Are you looking for help with a question about your garden, lawn, or anything agricultural? The solution is your local county extension agent from the Cooperative Extension office; and they're free! To find your local county extension agent's office, just click on your county in Georgia on the extension website: <http://extension.uga.edu/about/county/>.

UGA Extension agents, in county offices across Georgia, provide a link between the University and the public. Extension agents also oversee the Georgia 4-H program that provides education and leadership training for youth.

The screenshot shows the UGA Extension website interface. At the top, there is a navigation menu with links for 'Calendar', 'County Offices', 'Contact Us', and 'Publications'. Below the menu is the UGA Extension logo and a secondary navigation bar with categories like 'Agriculture', 'Environment', 'Family', 'Food', 'Lawn & Garden', '4-H', and 'About'. The main content area is titled 'About Extension : County Offices' and 'County Offices'. It includes a brief description of the extension agents' role and a list of county links under the letter 'A'. A map of Georgia is shown, color-coded by district: Northwest (orange), Northeast (yellow), Southeast (green), and Southwest (teal). A legend below the map identifies these districts. A sidebar on the right contains a search bar and a 'Find a County Office' form with a 'Go' button.

The state is also organized into four districts: Northwest, Northeast, Southwest, and Southeast. This is another way to find your county agent and growing area information. This can all be found on the UGA Extension website.

The calendar shows you all the workshops and learning opportunities that are going on in the state. Check out what's happening in your area by visiting: <http://extension.uga.edu/calendar/index.cfm>. With so many training sessions happening all around the state the only hard part will be deciding which one to attend!



Home Gardening Planting Chart

A Garden Planting Chart

Crop	Days to Maturity	Spring Planting Dates	Fall Planting Dates	Seed/Plants 100 ft.	Distance Between Rows	Distance Between Plants	Depth to Plant
Asparagus	2 nd season	Jan. 15-Mar. 15	Nov. 1 - Dec. 1	50 roots	3 to 5 ft.	1½ to 2 ft.	6 in.
Bean, bush	50-60	Apr. 1 - May 1	July 15-Aug. 20	½ lb.	3 ft.	2 to 4 in.	1-1½ in.
Bean, pole	65-75	Apr. 1-May 1	July 15-Aug. 10	½ lb.	3 ft.	6 to 12 in.	1-1½ in.
Bean, lima	65-75	Apr. 1 - June 1	July 1-Aug. 1	1 lb.	2 to 2½ ft.	3 to 4 in.	1-1½ in.
Beet	55-65	Feb. 15-Apr. 1	Aug. 1-Sept. 20	1 oz.	2 to 2½ ft.	2 in.	1 in.
Broccoli	60-80	Feb. 15-Mar. 15	Aug. 1-Sept. 1	100 plants	2½ ft.	14 to 18 in.	
Cabbage	65-80	Jan. 15-Mar. 15	Aug. 15-Oct. 1	100 plants	2½ ft.	12 in.	
Cantaloupe	80-90	Mar. 25-Apr. 20	Not recommended	1 oz.	4 to 6 ft.	3½ to 4 ft.	1½ in.
Carrot	70-80	Jan. 15-Mar. 20	Aug. 20-Sept. 15	½ oz.	2 ft.	2 to 3 in.	½ in.
Cauliflower	55-60	Mar. 1-Apr. 1	Aug. 1-Sept. 1	100 plants	3 ft.	12 to 18 in.	
Collard	55-70	Feb. 1-Mar. 20	Aug. 1-Oct. 1	½ oz.	2½ ft.	8 to 16 in.	½ in.
Corn	80-100	Mar. 15-June 1	June 1-July 20	¼ lb.	3 to 3½ ft.	12 to 18 in.	2 in.
Cucumber	60-65	Apr. 1-May 15	Aug. 20-Sept. 1	1 oz.	3½ to 5 ft.	3 to 4 ft.	1½ in.
Eggplant	75-90	Apr. 1-May 15	July 10-15	50 plants	3 ft.	2½ to 3 ft.	
Kale	50-70	Feb. 1-Mar. 10	Aug. 10-30	½ oz.	3 ft.	10 in.	½ in.
Lettuce	60-85	Jan. 15-Mar. 1	Sept. 1-Oct. 1	½ oz.	2 to 2½ ft.	10 to 12 in.	½ in.
Mustard	40-50	Jan. 15-Apr. 1	Aug. 20-Oct. 1	½ oz.	2 ft.	1 in.	½ in.
Okra	55-60	Apr. 1-June 1	June 15-July 1	1 oz.	3 to 3½ ft.	6 in.	1 in.
Onion (mature)	100-120	Jan. 1-Mar. 15	Sept. 1-Dec. 31	300 plants or ½ gal. sets	1 to 2 ft.	3 to 4 in.	¾ in.
Peas, garden	60-80	Jan. 15-Feb. 15	Not recommended	1 lb.	2½ ft.	1 in.	1½-2 in.
Peas, southern	60-70	Apr. 1-Aug. 1	Not recommended	½ lb.	3 ft.	4 to 6 in.	1½-2 in.
Pepper	65-80	Apr. 1-June 1	Not recommended	50 plants	2½ ft.	1½ to 2 ft.	
Potato, Irish	70-90	Jan. 15-Mar. 1	Aug. 1-Aug. 15	1 peck	2½ to 3 ft.	10 to 14 in.	5 in.
Potato, sweet	90-150	Apr. 15-June 15	Not recommended	100 plants	3½ ft.	12 in.	-
Radish	25-30	Jan. 15-Apr. 1	Sept. 1-Oct. 15	1 oz.	1½ ft.	1 in.	½ in.
Spinach	40-45	Jan. 15-Mar. 15	Sept. 1-Oct. 15	1 oz.	1½ to 2 ft.	1 to 2 in.	¾ in.
Squash, bush	50-55	Apr. 1-May 15	Aug. 1-20	1 oz.	3 to 4 ft.	2 ft.	1½-2 in.
Squash, winter	85-90	Apr. 1-Aug. 1	Not recommended	½ oz.	5 ft.	3 ft.	1½-2 in.
Tomato	70-85	Mar. 25-May 1	June 1-Aug. 10	50 plants	3 to 4 ft.	2½ to 3 ft.	
Turnip	45-65	Jan. 15-Apr. 1	Aug. 10-Sept. 15	½ oz.	1 to 2 ft.	1 to 2 in.	½ in.
Watermelon	80-90	Mar. 20-May 1	Not recommended	1 oz.	10 ft.	8 to 10 ft.	1½ in.

Note: Planting dates in this chart are approximate for Middle Georgia. North Georgia plantings should vary about two weeks later in the spring and earlier in the fall. South Georgia plantings can be made two weeks earlier in the spring and somewhat later in the fall.