

Sustainable Agriculture

Looking forward for this generation
and the next...

at UGA

Summer 2010

One of the three pillars of sustainable agriculture is profitability. Farms that aren't profitable cannot survive without off-farm income, and if a farm can't stay in existence, it isn't sustainable. But what do we really mean by profitability? Because profitability is only one part of the picture, when a farm focuses only on profitability, the other two pillars – environmental stewardship and quality of life for the farmers and the community - many times suffer.

It seems that profitability over the long haul has several facets in terms of sustainability. Recently I have been reading and thinking about indicators for profitability in terms of sustainable agriculture. Here are some *indicators for profitability* that I have gleaned from various sources and that seem to me important:

- Generates profits over the long-term as well as covering variable and fixed costs;
- Maximizes farmer/rancher control over their crop and prices received for their crops;
- Permits supporting a family at a standard of living that includes health care, education, and vacations;
- Minimizes reliance on government subsidies; and
- Has a succession plan.

These indicators reflect the fact that a sustainable agriculture is for future generations, and although farms and people and families change, the farming operation does more than maximize short-term cash flow. Unfortunately, maximizing cash flow is the situation many of our farmers and ranchers

find themselves in to stay on their land. The question is how do we give them an alternative? It is a difficult problem.

One potential solution is developing local food systems. A recent report by the USDA Economic Research Service compared the performance of local and mainstream food supply chains (see "*Comparing the Structure, Size, and Performance of Local and Mainstream Food Supply Chains*" www.ers.usda.gov/publications/err99). This report found that although local food supply chains have a small part of the total food market and have higher costs, they can be successful by developing niche markets and diversifying the products offered. One major impediment is adequate processing and distribution facilities or services. Another interesting fact was that producers obtain prices that range from equal to seven times those received in mainstream channels. However, these producers are performing some of the supply chain functions that generate costs between 13 to 62% of the retail price. The report indicates that these local food supply chains can be an important component in our food system and may help put more dollars in the farmer's pocket.

Another new study by the UGA-CAES Center for Agribusiness and Rural Economic Development co-sponsored by Georgia Organics, the Centers for Disease Control, the Center for Innovation for Agribusiness, and the College of Agricultural and Environmental Sciences, indicates local food can be an important part of the state's economy (see "*The Local Food Impact: What If Georgians Ate Local Produce*" www.georgiaorganics.org/Files/localimpact.pdf). This study looked only at fruit and vegetable production and defined local food as that grown in



Georgia. The report indicates that if each Georgian would spend \$10 of their food dollars on local products per week, the economic reinvestment in the state could be \$1.9 billion. That's an impressive number.

Can we develop local food systems that help farmers develop operations that meet the indicators of profitability above as well as improving

the overall economy of rural communities and the state? These two studies certainly show some potential. What do you think of the indicators for profitability? I'd love to hear from you.

Julia Gaskin

Sustainable Agriculture Coordinator, UGA-CAES

Extension

Locally Produced Beef Workshop

Local production of grass and grain fed beef is a topic of increasing interest in many communities. To meet the need for more information, University of Georgia Cooperative Extension Agents Clay Talton and Lucy Ray organized a workshop aimed at teaching Extension Agents, agriculture professionals and farmers the fundamentals of producing locally grown beef. The workshop was unique in that it focused on giving the attendees a better working knowledge of meat yields from cattle and how finishing might affect meat grade. This information is critical for producers to price their product so they can make a profit.

The workshop was a full day course and provided in-depth education in the stockering, finishing, and harvest phases of beef production. Dr. Dennis Hancock, Forage Extension Specialist and Dr. Lawton Stewart, Beef Extension Specialist, discussed the nutritional and forage needs of cattle during stockering through finishing. Also, Dr. Alex Stelzleni, Assistant Professor of Animal and Dairy Science, presented information to the group on muscle and frame scoring of cattle and demonstrated the use of ultrasound technology to assist growers in determining optimal finish conditions and weight. After lunch, a video of the beef harvest process at the University of Georgia



Ryan Crowe shows various meat cuts at workshop. Photo by Clay Talton.

Meat Science Technology Center (MSTC) was shown. Dr. Dean Pringle, Associate Professor of Animal and Dairy Science, and Mr. Russell McKeith, Graduate Student of Animal and Dairy Science discussed quality and yield grading. Immediately following, Ryan Crowe, MSTC manager, Dr. Pringle, and Clay Talton gave a cut yield and fabrication demonstration. To conclude the program, participants watched a presentation from the Georgia Department of Agriculture (GDA) and engaged in discussion on rules and regulations with Dr. Rex Holt and Mr. Glen Echols, representing the GDA.

The 42 participants from north Georgia represented Extension Agents and farmers with a wide range of experience producing and finishing cattle for local customers. The program was so



well received that plans are being made to host another workshop next year in order to meet the growing need for information on producing and marketing locally grown beef.

This workshop was funded by the Sustainable Agriculture Research Education (SARE) Professional Development Program in cooperation with the UGA-CAES Sustainable Agriculture Program.

Find more information at www.SustainAgGa.org in the Resources section, including Grazing/Animal Management, Local Foods/Marketing, and Consumer Information.

*Clay Talton, Elbert County Cooperative Extension
Lucy Ray, Jasper County Cooperative Extension*

In the Classroom

Sustainability of Tropical Ecosystems Field Study

Imagine a confined animal operation that discharges waste water devoid of phosphorus. Imagine a confined animal operation that generates its own power, and a substantial portion of its own feed.

Students enrolled in CRSS 4931 didn't have to imagine—they experienced it first-hand. This course, jointly taught with NC State University, took 13 students to Costa Rica for 22 days this spring. Costa Rica, with its small size and wealth of ecological zones, is the perfect laboratory in which to study the challenges of achieving sustainability across very different growing conditions.

EARTH University in Costa Rica

has been a long-time leader in closing nutrient cycles and achieving sustainability in production systems. In the case of their animal production, manure is separated into solid and liquid phases. The solid phase is used for compost; the liquid phase is fed into a biodigester for methane production. The methane produces enough electricity to run their hog facility, dairy, and pasteurization plant, with energy to spare. The effluent from the biodigester flows into a series of ponds. The first two ponds grow aquatic plants which are regularly harvested and fed to the hogs. The third pond is used to produce fish. By the time the water is discharged, it is cleaner than the river water into which it flows.

Biodigestors are becoming a cornerstone for farming systems, large and small, in Costa Rica. For the large farms, they clean effluent from packing plants and other agricultural enterprises. For small farmers who may only own a cow or two, biodigestors meet their household cooking needs.

This year, the students got to assemble a small biodigester, just large enough for one family. The students also got to visit an assortment of other farms, some large, some small, some conventional, and some organic. Each farm provided a unique set of challenges, some of



Students in *Sustainability of Tropical Ecosystems Field Study* assembling a biodigester. Photo by Wayne Parrott



which highlighted the differences between organic and sustainable. Students evaluated each farm with Sustainability Score Cards, which later served as the basis for discussion sessions. Along the way, the students experienced harvesting pineapples and mangos in the tropical sun, and saw farm labor through the eyes of the workers themselves.

Costa Rica has a wealth of tips and pointers that play a part in achieving sustainability, too many to mention here. The use of effective microorganisms serves an example. Effective microorganisms are a diverse collection of bacteria, yeast and other microorganisms isolated from forest litter and grown in molasses and water. These are sprayed wherever animals are contained. The microorganisms then compete with the fecal bacteria in the manure; with the net result that contained animal operations have no bad odors at all. Alternatively, the effective organisms are sprayed onto crops, where they compete with pathogens. In this case, the net result is that fewer sprays are needed to combat fungal diseases.

More information and photos of past trips are posted at uga.edu/tropag

By Dr. Wayne Parrott, Professor, Crop & Soil Sciences

Grower's Corner **Agroforestry with Wild Crops**

Improving diversity of native plants used as food or medicines can create opportunities for landowners to conserve plants that are overharvested or rare in the wild as well as to benefit financially from selling harvests from their forestland. UGA and the US Forest Service have initiated collaborative research through CAES and the Warnell School of Forestry to investigate local cultivation of four native medicinal plants. Two of

the species in the trial are popular plants for which cultivation techniques are fairly well known: ginseng (*Panax quinquefolius*) and goldenseal (*Hydrastis canadensis*). Two others, black cohosh (*Actaea racemosa*) and fairywand, also known as false unicorn (*Chamaelirium luteum*), have more recently gained attention for cultivation. One to be added in future trials will be *Aletris farinosa*, white colic root. Located on Warnell School property near Athens, installation of research plots during 2009 was funded through the USDA National Agroforestry Center and will provide a site for continued research, class visits and field observations.

Pressure on forest populations of native medicinal plants has increased over time. Intentional cultivation of wild-harvested non-timber forest products (NTFPs) can help relieve pressure on natural populations, conserve diversity on private forestland, and help provide income while maintaining forest cover along with ecosystem processes. A good example of wild crops on-farm is the SARE project Demonstrating Organic Wild Crop Utilization and Certification as a Profitable Model. It can be accomplished just as well on a suburban acreage under trees in the backyard as on the forestland of a working farm.

Put some native medicinals under your trees and harvest them to supplement the income gained from your other farming efforts. Even small acreages can be species rich systems providing a multitude of commercial products and noncommercial values. Check out [Agroforestry: Alternative Crops and Plants](#) and links there for more information about agroforestry practices.



Goldenseal. Photo by Julia Gaskin

Anyone interested in collaborating on aspects of native medicinal plant research and extension can contact Sarah Workman, UGA Global Programs. Also, look forward to learning more about NTFPs and participating in the 12th North American Agroforestry Conference to be held in Georgia during June 2011. More information is at <http://hosting.caes.uga.edu/2011NAAC/>

*By Dr. Sarah Workman, UGA-CAES Office of Global Programs
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National Organic Program to Begin Spot Checking

Spot checking for compliance among certified organic growers will increase according to Miles McEvoy, the deputy administrator for the National Organic Program (NOP). With an increase in the NOP budget of \$3.1 million to a total of \$10.1 million, the agency will almost double its staff from 16 to 31. A recent audit by the Inspector General of the USDA found lapses in enforcement of the NOP rules. The final audit and the NOP response were released on March 9, 2010. Several issues from the prior audit (July 2005) had not been addressed at the time of this audit. They include:



- failure to establish protocols for working with the National Organic Standards Board as well as not developing internal operating procedures for resolving complaints
- failure to properly address complaints or take enforcement action against operations that were not in compliance with certified organic production
- failure of certifying agents to conduct periodic residue testing for non-approved substances

The requirement to conduct periodic residue testing was part of the Organic Foods Production Act of 1990 but was never incorporated into the regulations developed by the NOP because it was thought the regulations should be process-based rather than a zero-tolerance standard. Thus, the residue testing was never conducted.

There are pros and cons to residue testing. On the positive side, testing increases the validity of the NOP and increases consumer confidence in the Program. The downside to testing is cost and who pays for it. Residue testing can be extremely costly and since there is no blanket test for residues, decisions will have to be made on what tests to conduct. In addition, tolerances will have to be established. Currently the EPA establishes pesticide tolerances and the FDA enforces these rules. Presumably, organic commodities would have to be significantly lower than these tolerances, which are set based on actual chemical application.

The audit makes 14 recommendations that the NOP should adopt to improve program administration and internal controls. The summary of these recommendations includes better internal control and more outside oversight of certifying agents, particularly those agents outside the US. The recommendations also indicate what sanctions and penalties should be imposed on those not in compliance. States are allowed to develop their own organic programs as long as they are in compliance with NOP regulations. California was granted the right to have a State Organic Program (SOP), but never implemented the necessary infrastructure for compliance, mediation, and appeals, so the California SOP has to be resolved so that it comes in compliance with NOP standards. The audit also recommends that the NOP obtain an opinion concerning residue testing from the Office of the General Council.

The NOP response to the recommendations was generally positive with specific timetables to implement many of the recommendations. To see the complete report point your browser to: <http://www.usda.gov/oig/webdocs/01601-03-HY.pdf>

Dr. George Boyhan, Extension Vegetable Specialist

Research News

“Orange Bulldog” Update

Notes from Dr. George Boyhan

In the Summer 2009 issue of this newsletter, we discussed the merits of our new pumpkin/winter squash variety, “Orange Bulldog.” With its higher virus resistance, Orange Bulldog has consistently produced greater yields than conventional pumpkins in fall production tests, producing 13,000 to 20,000 lbs per acre. Seed for Orange Bulldog pumpkin is now available from the University of Georgia Horticulture Department. Organically produced, untreated seed are available with no price increase over treated seed. See www.orangebulldogpumpkin.uga.edu for full story and instructions for ordering seed.

NOTE: Pumpkins should be planted by the third week of July in order to have pumpkins for October sales, so order your seed now.



Upcoming Events

August 2-6 2010 - Eastern Apicultural Society Conference - Boone, NC - Featuring beginner and experienced short courses.

<http://www.easternapiculture.org/programs/2010/>

August 3-5 2010, Tuesday-Thursday - Southeast Bioenergy Conference 2010 - Tifton Campus Conference Center. The theme of this year's conference is "Building a Vibrant Renewable Energy Market for the Southeast " COST: \$175, free for Extension agents and college students. Contact Evelyn Folds, 229-386-7274.

<http://www.sebioenergy.org/index.php>

August 24, 2010, Tuesday - Dairy Nutrient Management Record Keeping Workshop -

9:45am-1pm, Greene County Extension Office. This training will be offered simultaneously in English and Spanish for dairy producers and dairy workers. Topics include purpose of nutrient management plans, overview of record-keeping, and record-keeping forms for dairy workers. Call the Greene County Extension Office at 706-453-2083 by August 20th. See details at www.SustainAgGa.org Events List.

September 2 – Save the Date for Ag Showcase and Field Day at the FVSU Agricultural Technology Center. Fort Valley State University. 8:15am. Field demonstrations on small ruminant grazing, biofuel, aquaculture, & a Taste of Ag featuring vegetable & small fruit products, goat & lamb products. Call for more info: 478-825-6268.



Find basic principles of sustainable agriculture, Extension bulletins, research publications as well as archived copies of this newsletter at:

www.SustainAgGa.org

