

Plow Sharing

July-August 2005

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A bi-monthly newsletter promoting awareness, understanding, and practice of sustainable agriculture



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I hope you find this newsletter helpful and informative. If you have ideas or suggestions for future issues, call or stop by the office. I always welcome your feedback!

Debbie Roos

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August 8, 2005: Cut Flower Workshop

The Chatham County Center of North Carolina Cooperative Extension will offer a **Cut Flower Workshop** as part of its Enhancing Sustainability Series on Monday, August 8, from 12:00 noon to 4:00 p.m. in the auditorium of the Extension Agricultural Building in Pittsboro. Come take a break from the summer heat, improve your horticultural knowledge, and network with other growers! The workshop will also feature a Grower Panel for an open Question and Answer session.

Agenda:

- Advances in Cut Flower Research from North Carolina State University
- Summer Bulbs and Favorite Unusual Cuts
- Postharvest Handling for Optimal Quality
- One Size Does Not Fit All: Tips for Determining the Best Postharvest Strategies for New Species and Cultivars You Try on Your Farm
- Growing Pains: Taking your Cut Flower Operation to the Next Level

Featured Speakers:

- Dr. John Dole, North Carolina State University
- Frankie Fanelli, North Carolina State University
- David Huffman, Carmen's Greenhouse

Grower Panel:

- Cathy Jones, Perry-winkle Farm
- Leah Cook, Wild Hare Farm
- David Huffman, Carmen's Greenhouse



John Dole teaches and conducts research on specialty cut flower production at NCSU. He coordinates the Association of Specialty Cut Flower Growers National Seed Trial and Perennial Trial and is the Executive Advisor for the Association of Specialty Cut Flower Growers. He is co-author of the floriculture textbook *Floriculture Principles and Species*.

Frankie Fanelli teaches at NCSU and Johnston Community College, and is Volunteer Coordinator at the JC Raulston Arboretum in Raleigh. Frankie completed a M.S. in Horticulture under John Dole and worked with him to conduct postharvest trials on over 65 cut flower cultivars and species. Her research focus was summer flowering bulbs as cuts.

David Huffman owns Carmen's Greenhouse in Hiddenite, NC. Carmen's Greenhouse has been producing cut flowers and bedding plants for florists since 1993. With 30,000 square feet of greenhouse and a little over one acre of field space, they produce a wide range of cuts from tulips to sunflowers to asters. David grew up in the cut flower business and is well-known for his greenhouse-grown snapdragons.

Participants will receive a comprehensive resource notebook. The cost of the workshop is \$10 to cover materials. **The deadline for registration is August 3.** To register, please send a check payable to Cooperative Extension to Debbie Roos at PO Box 279 Pittsboro, NC 27312. Contact Debbie Roos at 919-542-8202 for more information. Participants are encouraged to bring a bag lunch. Drinks and light refreshments will be provided.

Season Extension Workshops



Ever wish you could produce earlier crops, or extend their season in order to capture a less-crowded market? Piedmont growers can produce crops year-round with season extension techniques. Cultural practices, plastic mulches, row covers, and high and low tunnels provide growers with earlier, later, and higher-quality produce that can capture more markets and demand higher prices.

Most local farmers' markets have no trouble attracting vendors and customers in the peak summer months. But individual growers as well as farmers' markets can benefit from having more produce and cut flowers both earlier and later in the season. Now's your chance to learn all about season extension!

The Chatham County Center of North Carolina Cooperative Extension, in collaboration with Central Carolina Community College's Sustainable Farming Program, will offer two **Season Extension Workshops** as part of its Enhancing Sustainability Series.

- **September 12: Introduction to Season Extension Workshop** from 7:00-9:00 p.m. in the auditorium of the Extension Agricultural Building in Pittsboro. The deadline for registration is September 6.
- **October 24: Season Extension Field Day** from 4:00-7:00 p.m. at the CCC Land Lab in Pittsboro. The deadline for registration is October 17.

Doug Jones developed a great crop calendar showing planting and harvest dates for many local crops, including those grown with season extension. I will try and have this chart posted to the web by early August (it is currently hand-written), so keep your eyes on the What's New Section of the Growing Small Farms website (see address below). This will be a helpful tool for helping growers plan planting dates.

The cost of each workshop is \$10 to cover materials. To register, please send a check payable to Cooperative Extension to Debbie Roos at PO Box 279 Pittsboro, NC 27312. Contact Debbie Roos at 919-542-8202 for more information.

New on the Growing Small Farms Website

I've been busy this summer posting some new pages to the Growing Small Farms website at www.ces.ncsu.edu/chatham/ag/SustAg/index.html.

- Farm Photo of the Week – 10 weeks are already posted, including this assassin bug feeding on a Colorado potato beetle larva!



- New Farm Profiles - Lee Farms, Logan Farms, Sunny Slope Greenhouses, and more on the way!

- New Crop Problems – fusarium wilt in basil, burr knot in apple, cold damage on Dutch iris
- Beekeeping – new section with pages for the Chatham County Beekeepers' Association, Photos of the 2005 Chatham Beekeepers' Field Day, a Beekeeping Resource List, and Web Resources for Beekeeping

**Chatham Marketplace:
New Marketing Outlet for Growers**



First, a little background on Chatham Marketplace, from their website:

Chatham Marketplace is a co-op grocery that will be located in Chatham Mills, an 80,000-square-foot former textile mill located just north of Pittsboro’s traffic circle on 480 Hillsboro Street/U.S. 15-501N. The co-op’s projected opening date is December 2005.

Chatham Marketplace will offer a full selection of organically and sustainably grown produce – as much as possible from local growers. The market will also sell a full line of sustainable grocery and dry-good products including deli, bakery, meat, bulk, dairy, vitamin and health and body care items.

Chatham Marketplace is a cooperative owned by members of our community. All are welcome to become market owners by purchasing ownership shares. Owners receive a discount on purchases and guide the direction of the co-op by electing the Board of Directors. You do not have to be a co-op owner to shop at Chatham Marketplace.

Chatham Marketplace is owned entirely by local people; therefore, the market’s success is linked to the economic well-being of the county and its citizens. Recognizing its dependency on the health of the community, Chatham Marketplace will buy and sell local agricultural products. Profits will remain in the local economy, and Chatham Marketplace will provide meaningful, good-paying jobs to local residents.

Chatham Marketplace offers a much-needed service to this community. All of us in Chatham County should have easy access to sustainable products, and we are best served by local businesses that spend their dollars in Chatham and keep their profits here as well.

We believe having close relations with area growers and local producers is key to that goal. We are very fortunate to

be in the hub of one of the only communities in the nation adding small farms, so we are proud and eager to feature local, sustainable, and organically produced items.

By working with local producers and growers, we will:

1. provide our community with regular access to more fresh and nutritious food--which is good for our health!
2. protect our environment by encouraging purchases of responsibly grown and distributed foods--our air, land, water and health will be preserved!
3. support local agriculture and the local economy by spending our dollars close to home and keeping them recirculating in our community-- our community assets won't be siphoned away!

So you can see that CM is committed to buying from local producers. They will be looking for produce, cut flowers and plants, meat and poultry, eggs, dairy, seafood, and prepared and processed goods. The co-op hopes to be able to purchase as much as they can from Chatham County producers. Are you one of those producers? Or would you like to become one of those producers? Chatham Marketplace wants to hear from you!

My hope is that Chatham Marketplace will not have to cast their “local” net too wide, but will be able to get much of their product from Chatham County. Currently most of our growers direct market their products at local farmers’ markets, which is one of the things about our area that has made it such a great place to live and farm. To be able to supply Chatham Marketplace from Chatham County producers, we will need to see more growers interested in wholesaling, whether they are existing growers expanding and diversifying their markets or new growers looking to develop their own niche.

And remember that Chatham Marketplace will be open year-round, so we (I say we because I am an owner!) will need products year-round. That’s one of the reasons Doug Jones and I are conducting the Season Extension Workshops mentioned on page 2 of this issue.

If you are interested in becoming a supplier for Chatham Marketplace, go to their website at www.chathammarketplace.com and fill out the Supplier Questionnaire on-line. You can also view the Purchasing Policy on-line. The co-op will open in December, which believe it or not is only a few months away (yikes!), so it’s not too early to be thinking ahead to the 2006 season!



Cut flowers at Perry-winkle Farm in northern Chatham County.

Plant Fall Vegetables in August-September!



It's hard to wrap your brain around the concept of fall vegetables when the mercury is approaching 100°F, but August and September is a great time to plant fall veggies! Crops to consider include broccoli, cabbage, cauliflower, lettuce, spinach, beets, carrots, kale, collards, beets, radish, cilantro, dill, Swiss chard, parsley, onions, turnips, and more!

For more information on growing these crops, visit the GSF Website at [www.ces.ncsu.edu/chatham/ag/SustAg—Web Resources—Vegetables and Herbs](http://www.ces.ncsu.edu/chatham/ag/SustAg—WebResources—Vegetables%20and%20Herbs). You'll find lots of links to on-line publications from NC State University and elsewhere for growing vegetables.

Study Shows Organic Farms Produce Same Yields as Conventional Farms



Conventional (left) and organic (right) corn in The Rodale Institute's Farming Systems Trial. Photo courtesy of Rodale's The New Farm website.

From ATTRA: Organic farming produces the same yields of corn and soybeans as conventional farming, but uses 30 percent less energy, less water and no pesticides, according to a recent study by David Pimentel, a Cornell University professor. The study is a review of the Rodale Institute Farming Systems Trial, the longest running comparison of organic vs. conventional farming in the United States. The study compared a conventional farm that used recommended fertilizer and pesticide applications with an organic animal-based farm (where manure was applied) and an organic legume-based farm (that used a three-year rotation of hairy vetch/corn and rye/soybeans and wheat). The two organic systems received

no chemical fertilizers or pesticides. Titled "Environmental, Energetic, and Economic Comparisons of Organic and Conventional Systems," the article was published in the July 2005 issue of the peer-reviewed journal *Bioscience*.

You can view the article at www.newswise.com/articles/view/513110.

Check out more great articles on The New Farm website at www.newfarm.org.

November 30-December 2: Hands-on Farmstead Cheesemaking Short Course

Raleigh, NC



Celebrity Dairy mold-ripened chèvre.

North Carolina State University presents the 2nd annual Hands-on Farmstead Cheesemaking Short Course in Raleigh, NC. Cheesemakers will receive hands-on experience and classroom contact designed to teach the basics for newcomers and practical technique and troubleshooting knowledge for those already well into cheese production.

The course will cover the areas of:

- Basic cleaning, sanitation and quality testing
- Milk processing and regulations
- Basic and fermented foods microbiology and phage control
- Basic steps and chemistry of cheesemaking
- Hands-on production of several cheeses
- Farmstead economics and herd nutrition
- Packaging and labeling

With the increased size of the teaching lab, we can handle up to twenty students. Download an application for the short course from the Growing Small Farms website at www.ces.ncsu.edu/chatham/ag/SustAg/calendar.html. The application includes a questionnaire to assess the developmental stage of your business. For more information on the North Carolina Farmstead Cheese Program contact Gary Cartwright at 919-513-2488 or gary_cartwright@ncsu.edu.

Plow Sharing on the Web

Don't forget that there are five years of back issues of Plow Sharing on the Growing Small Farms website. You'll get the benefit of seeing all the photos and graphics in color! If you find yourself with some free time on a rainy day, check out these past issues at

www.ces.ncsu.edu/chatham/ag/SustAg/psindex.html

Register Now for Fall Classes at CCCC

The following continuing education classes will be offered through the Sustainable Farming Program at Central Carolina Community College in Pittsboro. Registration begins August 2. Call 919-542-6495 ext. 223 for more information.

MONDAY

All about Horses

Does your farm need a horse? Or does it already have one? Learn how to choose, care for and enjoy owning a horse. Learn from an instructor who is experienced and enthusiastic about all types of horses to suit a variety of purposes on the farm. Mondays 9/12/05 to 11/28/05, 3:00-6:00 pm. Instructor: John Andrews.

Sustainable Cut Flower Production

A look at the business of growing and marketing quality cut flowers. This course will cover such topics as site and seed selection, growing flowers that maintain their quality, marketing strategies and bouquet design. Instructor Leah Cook (below) operates Wild Hare Farm in Cedar Grove; she has inspired several graduates of this course to get into the cut flower business. Mondays 9/12/05 to 12/5/05, 7:00-9:00 pm.



"Weed" ID for Backyard and Garden

According to Ralph Waldo Emerson a weed is "a plant whose virtues have not yet been discovered". Plants that pop-up naturally in the landscape year after year may have values that you haven't realized, or they may be telling you something about your soil or your gardening habits. Join Instructor Amy Rouse in this hands-on plant ID class that will teach you about the natural plant world that surrounds us in the piedmont of NC, and what your weeds may be telling you. Mondays 8/29/05 to 10/10/05, 6:00-8:00 pm.

TUESDAY

Wild Edible and Medicinal Plants - Field Study

The focus of this field study will be locating, identifying, approaching, collecting and marketing edible and medicinal plants. Frequent field trips to local areas for identification and sustainable harvest of native plants are planned as part of the learning experience. Learn how to explore herb habitats and communities, and discover ways to open up to this healing, nurturing, and renewing force. Most of the class will take place outdoors, so come dressed accordingly. Students should bring a notebook suitable for use outdoors. Tuesdays 10/11/05 to 12/6/05, 3:00-6:00 pm. Instructor: Will Endres.

Wild Edible and Medicinal Plants

Herbalist and Wild Crafter Will Endres shares his more than thirty years of experience in the gathering and preparation of wild herbs for personal use and sale. Learn how to wisely integrate plants into your daily life. This is an interactive course where you will be given the opportunity to ask all of your herbal questions. The preparation of herbs for use by drying, and by making fluid extracts will be covered. This course complements the Field Study class, but neither is a pre-requisite. Tuesdays 10/11/05 to 12/6/05, 7:00-9:00 pm. Instructor: Will Endres.

Organic Vegetable Production - Fall



This course will cover the planning, installation and maintenance of an organic fall vegetable garden. One of our longest running popular courses- full of practical info from instructors with lots of combined experience. Consisting of class and field time, stu-

dents will gain hands on experience in producing vegetables for local markets. Students share in the harvest and consumption of crops produced! Instruction on season extension and winter cover crops will also be included. Instructors for this course are Tony Kleese, ED of Carolina Farm Stewardship Association and farmer at Earthwise Organics in Celso and Doug Jones, CCCC Land Lab manager. Tuesdays 8/23/05 to 11/22/05, 6:00-9:00 pm.



Doug Jones (left) and students harvest basil at the Land Lab.

WEDNESDAY

Raising Dairy Goats - NEW!

Are you considering adding dairy or meat goats to the live-stock mix on your farm but are not sure where to begin? Learn the basics from someone who has been there! Fleming Pfann (photo below) of Celebrity Dairy will lead this course on selecting the right goat for your needs and how to keep goats happy, healthy and productive. The focus of this



course will be on dairy goats for family scale production as well as how and when to scale up to add a new sustainable enterprise to your farm. Field trips to area farms specializing in goats will round out student experience in this course. Wednesdays 9/14/05 to 11/2/05, 3:00-6:00 pm. Instructor: Fleming Pfann.



Composting: Recycling Organically

This course will cover the basic topics on how to compost (hot/fast, cold/slow). Vermi-composting, utilizing the 'red wiggler' worms to decompose or consume your organic waste. How to utilize compost as a soil amendment as well as compost tea brewing and application also included. Each student will build and maintain a compost pile throughout the course. A tour of a large scale compost facility and worm operation will be scheduled as part of a class field trip. Wednesdays 9/14/05 to 10/19/05, 6:30-9:00 pm. Instructor: Brian Rosa. Brian works at the NC Division of Pollution Prevention and Environmental Assistance and has created this helpful web site: www.p2pays.org/compost/index.asp.

THURSDAY

Whole Farm Planning: with Livestock - NEW!

The components of a sustainable farm are all part of a system. This course is designed to help you look at various enterprises on the farm and see how they are integrated into a system that has minimum impact on the environment, is sustainable, and includes humane treatment for the animals. Using Fickle Creek Farm as his example, Dr. Ben Bergmann (right) impressed everyone at a recent pastured poultry conference with an excellent and detailed presentation. The course will focus on components of an integrated farm system and the natural resources management appropriate for the piedmont of NC. Thursdays 10/6/05 to 11/10/05, 6:00-8:00 pm. Instructor: Ben Bergmann, Fickle Creek Farm.



Techniques and Practices for Seed Saving - NEW!

This course will focus on seed saving and basic plant breeding techniques, useful to both growers and backyard gardeners. Students will learn how to save their own seeds of many vegetables and grains, and how to improve the gene pool of their crops to adapt them to our local conditions.



We will study and apply learned techniques on such topics as: self pollinators vs. cross pollinators; isolation distances and techniques; local climate challenges; selection and crossing for desirable traits; dry seed and wet seed processing; variety trials; vegetatively propagated crops; and commercial seed production possibilities. The instructor, Doug Jones, is the manager of the Land Lab at CCC and has considerable seed-saving experience. He is currently working with over 200 varieties. Students can take home many kinds of seeds. Thursdays 9/8/05 to 11/10/05, 3:00-6:00 pm.

Carpentry, Electrical and Plumbing

Students will learn the fundamentals for basic house construction or remodeling work from experienced builder, teacher and farmer Kevin Meehan. Topics covered include framing, cabinetry and trim, stairs, wiring, drain lines, the NC building code, and hot/cold supply lines. Excellent course for those new to the construction trades; this course has received rave reviews for its practical and informative nature in the past. Thursdays 9/15/05 to 12/8/05, 7:00-9:00 pm.

FRIDAY

Ornamental Gardening: with Perennials, Shrubs and Trees, with a Special Focus on Natives - NEW!



This course offers a broad overview of the vast landscape plant choices we have in this incredible gardening region of North Carolina. Native plants will be featured. In addition, we will cover site analysis, soil preparation, organic pest management and basic design overview. The goals of this course are to help you analyze potential planting sites and make appropriate plant choices (perennials, shrubs, small trees) for that site. Students will also learn how to implement and maintain ornamental plantings. Conservation and sustainable horticultural processes will also be incorporated in our discussions. This course is appropriate for landscape professionals and homeowners alike. Fridays 8/19/05 to 10/1/05, 12:00-3:00 pm. Instructor Kim Hawks is the founder and former proprietor of Niche Gardens.

To register for any of these courses, call 919-542-6495 ext. 223.

**Local Crop Problem:
Fusarium Wilt Disease in Basil**

Note: This local crop problem is posted on the Growing Small Farms website at www.ces.ncsu.edu/chatham/ag/SustAg/cropproblems.html. You can see detailed photos on the website.

Some local growers have reported problems with their basil, with stunted and dying plants. Samples sent to the NCSU Plant Disease and Insect Clinic revealed that they were suffering from Fusarium wilt, a devastating disease caused by a soilborne pathogenic fungus. According to NCSU's Basil Horticultural Informational Leaflet, *Fusarium oxysporum f. sp. basilicum* was first discovered in the U.S. in 1991 and identified in N.C. in 1992. Plants infected with this disease usually grow normally until they are six to twelve inches tall, then they become stunted and suddenly wilt. Initial symptoms usually include brown streaks on the stems, discoloration of the internal stem tissue, a shepherd's crook appearance of stems, and sudden leaf drop (see photos below for examples of all these symptoms). Interestingly, only sweet basil is affected. Some of the specialty basil, such as lemon basil and purple basil, show some resistance to the disease.

The disease is introduced into fields, hydroponic systems, and greenhouse culture primarily through contaminated seed. Growers should only buy basil seed that has been tested for the fusarium wilt fungus. Currently, these tests involve growing out a large number of seed and looking for disease symptoms. This does not guarantee that the seed will be free of infection, but it greatly reduces the risk. If it is not possible to obtain tested seed, the seed should be soaked in cold water for four hours followed by a heat treatment of 20 minutes in 133-136° F water. Seed germination rates will probably be reduced by the hot water treatment, so a germination test should be conducted on a small lot of the treated seed to determine how much seedling rates need to be adjusted. Also, the hot water treatment causes a sticky layer to develop on the outer surface of seed making it difficult to handle. Some seed companies also sell resistant varieties.



Once a field has become infested with the fusarium wilt pathogen, infective propagules may persist in the soil for 8-12 years. During that time, growers should avoid growing sweet basil or members of the mint family. Mints will not exhibit symptoms of the disease but may carry over the inoculum from year to year. There are currently no products registered to help control this disease.

CCCC Sustainability Fair

September 23-24, 2005

8:00 am -4:00 pm

Central Carolina Community College
Pittsboro, NC

The Central Carolina Community College (CCCC) Sustainability Fair will demonstrate and explore many areas of sustainability through Workshops & Exhibits (Saturday) and a Tour (Friday). During the Fair, half-day workshops will focus on topics of:

- Sustainable agriculture
- Sustainable transportation & renewable energy--biofuels & electric cars
- Sustainable building--green & natural building
- Land and water conservancy

Exhibits will feature a variety of sustainable products, processes and hands-on demos. During the tour on Friday September 23rd, participants will visit sustainable model projects in building, water recycling, biofuels, agriculture, among others.

For more information, contact Sandra McMahon at smcmahon@cccc.edu or 919-542-6495 ext. 224.

Edible Flowers

By Lance Gegner, ATTRA

Introduction



It is important to remember that edible flowers are only part of a diversification strategy. Most growers cannot make a living growing only edible flowers. Edibles are usually grown in conjunction with

cut flowers, herbs, and specialty lettuces, in order to complement them and create opportunities for value-added products.

Another thing to keep in mind when producing edible flowers is the importance of growing without chemicals, since the flowers should be free of any chemical residue. Organic growers have an edge, because the flowers—usually imported—available from commercial florists are often grown with heavy applications of pesticides. In fact, many imported cut flowers contain residues from pesticides ruled unacceptable for food production in the U.S. Even flowers growing along the roadside may have been sprayed with pesticides and are not safe to eat.

Production

Cultural requirements for edible flowers are similar to those of other floral crops. The ATTRA publication *Sustainable Cut Flower Production* gives references that may be useful in the culture of edible flowers.



There are perhaps 100 types of common garden flowers that are both edible and palatable. Many seed catalogs offer edible flower selections, complete with descriptions and recipes. Some of the more popular edible flowers include:

Bachelor button	Bee balm	Borage
Calendula	Chamomile	Chive flowers
Dandelion	Daylily	Dianthus
Hibiscus	Hollyhock	Impatiens
Lilac	Marigold	Mint
Nasturtium	Pansy	Roses
Sage	Squash blossom	Violet

Flowers are rich in nectar and pollen, and some are high in vitamins and minerals. For instance, roses—especially rose hips—are very high in vitamin C, marigolds and nasturtiums contain vitamin C, and dandelion blossoms contain vitamins A and C. Flowers are also nearly calorie-free.



Christy harvests nasturtiums at Ayrshire Farm in Pittsboro.

However, as Ann Lovejoy reported in a *Seattle Post-Intelligencer* article, “for some people, eating pollen can trigger allergies or even asthma. To be safe, remove the pollen-bearing parts of each edible flower (the pistils and stamens). The sepals or calyx also should be removed except for the viola-violet clan (pansies, Johnny-Jump-Ups, violets and violettas).”

Edible flowers should be picked as fully open flowers in the cool of the day, after the dew has evaporated. It is best to sample several flowers before harvesting. Flowers grown in different locations can have different tastes, because of different soil types, fertilization, and environmental conditions. Flowers may taste different at the end of the growing season and can vary from year to year.

After picking, place long-stem edible flowers in water and store in a cool place. Layer short-stem flowers between damp towels or store loosely in a plastic bag and refrigerate. Wash and check for insects before using. It is best to wash just a few flowers first to make sure they don’t discolor. Never use floral preservatives on edible flowers. Many floral preservatives contain toxic chemicals, but the exact components are considered trade secrets.

Researchers at Pennsylvania State University and Michigan State University studied five species of edible flowers (viola, pansy, borage, nasturtium, and scarlet runner bean) for cold storage shelf life and sensitivity to chilling injury. They stored fully expanded blooms in heat-sealed, low-density polyethylene film bags with four 0.4 mm holes to allow oxygen and carbon dioxide exchange. The bags were stored in the dark at six different temperatures ranging from 68° to 28.5° F. Viola, pansy, and nasturtium showed no visual damage after two weeks of storage at 32° and 36.5°, but were marketable for only one week at higher temperatures. Borage flowers and scarlet runner bean flowers had shorter shelf life at all temperatures. It was noted that all flowers, except for borage, can be stored at the mean temperatures of refrigerated cases in grocery stores (45.7° in winter and 47.1° in summer) for 1 week without becoming unmarketable.

Poisonous Flowers

Do not eat any flower unless you are certain about its identity. Even edible flowers can cause indigestion or allergic reactions if eaten in large amounts. In her article, Ann Lovejoy explains:

It is very hard to know which flowers are safe to eat and which are not when your only guide is what you see in recipe books and food magazines. These handsome publications are full of pretty pictures in which food and flowers are combined. On occasion I have been horrified to see quite toxic flowers, such as angel's trumpet (*Datura* or *Brugmansia*), spilling over with chicken salad, and daffodils and lily-of-the-valley trimming cakes. Some flowers are not dangerously toxic for most people yet can cause irritation even in the less-sensitive. Thus, when you see a calla lily loaded with peeled shrimp in a lush photo spread, try the recipe but choose another garnish, please.

Some of the highly toxic flowers are azaleas, belladonna, calla lily, castor bean, crocus, daphne, foxglove, larkspur, lily-of-the-valley, nightshade, and rhododendron.

Marketing

As with any crop, it is extremely important to decide on a marketing strategy before you plant. Edible flowers are produced and marketed in much the same way as fresh herbs, although the edible flower market is not as large. Edible flowers are used by chefs as garnishes, in salads and desserts, and for drink and candy adornment. Do a careful market assessment before proceeding, concentrating on upscale restaurants in the largest urban center nearest you.

To recognize the unique opportunities that may provide entry into this market, the grower must keep up with food trends. Talking to local chefs will acquaint you with their needs. Most restaurants demand a consistent supply of any crop, but many edible flowers can be used interchangeably. Get in touch with a local chefs association or state restaurant association. Reading magazines such as *Gourmet*, *Bon Appetit*, and *Food and Wine* is another way to gauge the

competitive environment. The ATTRA publication *Selling to Restaurants* has additional information on successful strategies for marketing to restaurants.

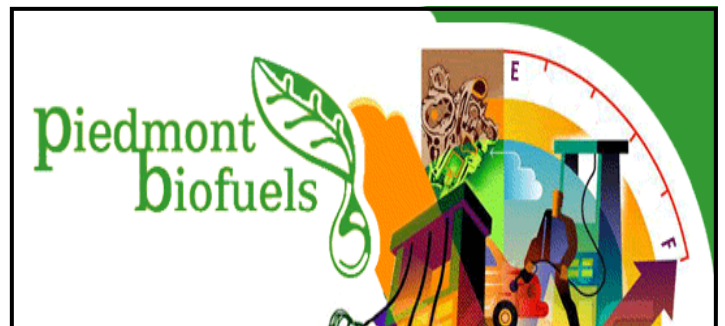
Since many people are unfamiliar with using edible flowers, it is always a good idea to provide free samples and recipes. Remind your customers that edible flowers mixed in summer salads create unique colors and tastes. Often, customers will use these flowers for special events, placing crystallized violets on wedding cakes, for example. It is up to the grower to remind consumers of these special uses. As for pricing, the grower must decide what the market will bear.

Value-added products, like mesclun mixed with calendula flowers, can generate excitement in the consumer and added income for the grower. For information on specialty lettuces, see ATTRA's *Specialty Lettuce and Greens: Organic Production*. Other examples of value-added products are gift baskets, pre-packaged salads, and processed products (such as teas).

ATTRA—Appropriate Technology Transfer for Rural Areas—National Sustainable Agriculture Information Service, funded by the US Department of Agriculture, is managed by the National Center for Appropriate Technology. It provides information and other technical assistance to farmers, ranchers, Extension agents, educators, and others involved in sustainable agriculture in the United States.

For more ATTRA publications, visit their website at <http://attra.ncat.org>.

Piedmont Biofuels: A Very Different Picture



Piedmont Biofuels is a worker and member owned cooperative. Our mission is to lead the grassroots sustainability movement in North Carolina by using and encouraging the use of clean, renewable biofuels.

We are involved in a wide variety of undertakings in support of this mission:

- We provide pure biodiesel (B100) to the community.
- We provide a space where worker members can make their own fuel from waste vegetable oil.
- We have a USDA Research Farm where we do oilseed crop research.

- We have an elaborate glycerin composting facility.
- We do education and outreach on both biodiesel and engine modifications that enable people to use straight vegetable oil (SVO) as fuel.
- We lobby the North Carolina legislature, as well as our national representatives, on behalf of biodiesel and alternative fuels.
- We have an intern program that allows people to live on site and learn about all facets of our operations.

The following article appeared in the Energy Blog on the Piedmont Biofuels website.

Pedro was an intern from Guatemala. He's back at home now, and just sent us this wonderful electronic post card about his journey—Lyle Estill

As a teenager in high school I felt a very urgent calling: humankind is wrecking this beautiful planet and we ought to do something right now. So, with that in mind I entered college and started majoring in biology aiming to become an ecologist and do something to save the beautiful rain forests, cloud forests and marine eco systems this small country is blessed with. I used to give up my allowance to buy turtle eggs and save them from depredation.

But after 2 years of memorizing plant names, their life cycles and inner workings I got utterly frustrated. The task seemed endless and impossible and I gave up. I thought that before we could start to worry about our environment we had to improve the “standard of living” of the population and I thought that chemistry was a better way to create jobs than ecology.

That is how I ended up majoring in chemistry. As an under graduate chemistry student in Guatemala city I knew one thing for certain: I wanted to go abroad and learn how top notch scientific research is done elsewhere. I wanted to earn a PhD by writing a thesis on how to devise a mathematical formula that would enable one to calculate the steric hindrance in a chemical reaction or such arcane thing like that. By the time I graduated I asked myself, why bother? I'll spend a couple of years thinking about little molecules and their shapes and then what? Come back and teach 2 + 2 to freshmen? I thought I'd be better off making soap and selling it.

It was at that point in my life that the opportunity to spend six months in Moncure, North Carolina doing an internship at Piedmont Biofuels presented itself. To tell the truth I wanted to go somewhere, but not to the US. I was afraid of the big bad giant of the north and its people. So it was with a little bit of hesitation that I decided to embark on this adventure. I thought I would spend my time in a big city, enclosed between university walls in a purely academic setting, just talking about biodiesel and reading theoretical papers about it. But the cosmic waiter worked his magic and got me something way better than I had hoped for. Instead I ended up in this beautiful little town, full of trees and fresh air, with tap water you can drink with no previous treatment and with a bunch of extremely nice people.

I had only had a short biodiesel primer by a coop member who was in Guatemala when I left. I must confess I did not quite believe yet it worked, I had yet to see it and especially smell it. I was thus amazed to see this crowd that made their own fuel in a back yard and with low tech equipment. It is amazing to see this little reaction that my organic chemistry text book just dedicated a paragraph to work such wonders. Suddenly a lot of questions exploded in my head and everybody was asking me things I did not know the answer to. Somebody please call a chemist!! Wait, I am supposed to be the chemist here! This might not be rocket science, but it is a whole lot more useful and therefore more interesting. We used to notice with Forrest that every conversation we had everywhere revolved around a single topic: biodiesel. We spent months on end talking, discussing, working, dreaming and some of us even drinking biodiesel. The depth of knowledge and passion in this group is something I did not expect.

Suddenly I was thinking again about all those things I felt were very important. I heard all around me discussions about sustainability and the protection of our environment and I felt at home again. This just makes sense, where did I lose the right track? It feels like “finding oneself again”.

I met a lot of interesting people, very talented, very knowledgeable and determined and also bold to stand up and do what is right, albeit all the difficulties one may encounter in doing so. My picture of this great country changed radically, I have now a deep admiration for the people I met and I made some very dear friends. I wish everyone could have this kind of epiphany; it would surely contribute to make this a more peaceful world.

I had the time of my life in North Carolina. I learned a lot, not only about biodiesel as you see. Now I have the task to spread the word and contribute to inspire people the way Piedmont Biofuels inspired me.

Editor's note: See the January-February 2005 issue of Plow Sharing for an article by Lyle Estill, resident Piedmont Biofuels blogger. You can read this on the web at www.ces.ncsu.edu/chatham/ag/SustAg/psindex.html

For more information about Piedmont Biofuels, and to read more Blog entries, visit their website at www.biofuels.coop.

2005 Calendar of Events

updated weekly on the web:
www.ces.ncsu.edu/chatham/ag/SustAg/calendar.html

August 8, 2005: The Chatham County Center of North Carolina Cooperative Extension will offer a **Cut Flower Workshop** as part of its *Enhancing Sustainability Series* from 12:00 noon to 4:00 p.m. in the auditorium of the Extension Agricultural Building in Pittsboro. Contact Debbie Roos at 919-542-8202 for more information.

August 9, 2005: Organic Gardening Class from 7:00-8:00 p.m. at the Reedy Creek Nature Center in Charlotte, NC. This lively session will introduce you to the information you need to set up a practical and effective organic fertilizing and soil-building program. The focus is on an 'organic' approach with a strong scientific foundation. Sponsored by Mecklenburg County Park and Recreation and NC Cooperative Extension. The class will be taught by Don Boekelheide, Zone 7 correspondent and flower and vegetable variety tester for Rodale's Organic Gardening magazine. For more information, contact Reedy Creek Nature Center at 704-598-8857 or Atuya Cornwall at 980-722-2257.

August 11, 2005: North Carolina Mushroom Association Meeting from 6:30-8:30 p.m. in Greensboro, NC. This will be an opportunity for all interested parties to come together to learn about and participate in the formalization of the NC Mushroom Growers Association that will assist growers to work together to market their mushrooms! For more information contact Linda McCain at 336-334-7957, ext 2107.

September 22, 2005: Chatham County Cooperative Extension Annual **Farm and Industry Tour**. For details, call 919-542-8202.

September 23-24, 2005: Sustainability Fair from 8:00 a.m. til 4:00 p.m. at Central Carolina Community College in Pittsboro, NC. For more information, contact Sandra McMahon at 919-542-6495 ext. 224 or the Continuing Education Office at CCCC at 919-542-6495 ext. 223.

September 26-29, 2005: "Specialty Cut Flowers ... Profitably" is the theme of the **Association of Specialty Cut Flower Growers' National Conference and Trade Show** in Lancaster, Pennsylvania. Cut flower growers and handlers from the Mid-Atlantic States are expected to attend, mingling with ASCFG members from across the United States and Canada. In keeping with the "making money" theme, sessions such as "Perennials for Pennies", "Money Does Grow on Trees", and "Crates of Cash" will be offered. Other highlights include sessions on high tunnel production in fall and spring; pest control; field equipment for small growers; and production sessions on tulip, aster, hydrangea and sunflower. Farm tours include the nearby Cramers' Posie Patch, as well as Hendricks' Flowers and Yoder Green Leaf Perennials. For more information about the conference, contact the ASCFG at 440-774-2887. See the complete program at the ASCFG website at www.ascfg.org.

October 16-19, 2005: The 4th **National Small Farm Conference** will be held at the Sheraton Greensboro Hotel in Greensboro, NC. This is a train-the-trainer conference designed to enhance economic opportunities and the quality of life of small farmers and ranchers. For more information, visit the conference website at www.csrees.usda.gov/nea/ag_systems/in_focus/smallfarms_if_conferences_fourth.html.

November 4-6, 2005: Annual **Sustainable Agriculture Conference** sponsored by Carolina Farm Stewardship Association in Durham, NC. Contact CFSA at 919-542-2402 for more information.

November 30-December 2, 2005: North Carolina State University presents the 2nd annual **Hands-on Farmstead Cheesemaking Short Course** in Raleigh, NC. For more information on the North Carolina Farmstead Cheese Program contact [Gary Cartwright](mailto:GaryCartwright@ncsu.edu) at 919-513-2488.

January 19-21, 2006: Southern Sustainable Agriculture Working Group (SSAWG) **Practical Tools and Solutions for Sustainable Family Farms Conference** in New Orleans, LA. Details will be released in October. For more information, contact SSAWG at info@ssawg.org.

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Plow Sharing

*A bi-monthly newsletter promoting
awareness, understanding,
and practice of sustainable agriculture*