

NC MEDICINAL HERB NEWS

A Newsletter of the North Carolina Medicinal Herbs for Commerce Project—Dr. Jeanine Davis, Project Leader

Volume 2, Issue 1

Summer 2006

FOR YOUR CALENDAR

Summer 2006: Southern Appalachian School for Growing Medicinal Plants. Topics include Chinese herbs, biodynamic, permaculture, ginseng, golden-seal, root division, saving seed. All classes at Eagle Feather Organic Farm, Marshall, NC, 1-4 p.m. 828-649-3536. See schedule at: www.ncgoldenseal.com;

June 12: Workshop on Grazing Systems for Small Farms. 9-Noon. CEFS, Goldsboro, NC. 919-513-0954

June 12: Workshop on Emerging Markets for Local Farmers. 6-8 p.m. Center for Environmental Farming Systems, Goldsboro, NC. 919-513-0954

June 17: Workshop on Community Supported Agriculture for Consumers. 9:30-11 a.m. CEFS, Goldsboro, NC. 919-513-0954

June 24-25: Annual Mountain Farm Tour. Carolina Farm Stewardship Association. 919-542-2402.

July 17: Workshop on Beneficial Insect Habitat and Release Strategies. 9:30 a.m. - 4:00 p.m. CEFS, Goldsboro, NC. 919-513-0954

July 22-23: Annual High Country Farm Tour. CFSA. 919-542-2402

August 14: Organic Certification Mini-Course. 10 a.m. - 3 p.m. CEFS, Goldsboro, NC. 919-513-0954 for more info.

August 21: Small Farm Equipment and Cover Crop Workshop. 1-5 p.m. CEFS, Goldsboro, NC. 919-513-0954 for more info.

MEDICINAL HERBS STAFF AND EXTENSION AGENTS TRAVEL AND LEARN ON WEST COAST



Mark Wheeler of Pacific Botanicals talks to the group about his experience growing medicinal herbs

A lucky group of staff and Extension agents from North Carolina recently took an educational field trip to northern California and southern Oregon to learn from some of the most experienced and knowledgeable medicinal herb producers in the country. The group was also fortunate enough to be able to visit with several other organic and biodynamic operations to learn about vegetable, seed, and wine grape production. Libby Hinsley, Medicinal Herbs for Commerce Project Coordinator, and Agatha Kaplan, NC Specialty Crops Program Technician, put the trip together and were able to bring along three Extension Agents from around the state: Kathryn Holmes of Rockingham County, Amie Newsome of Johnston

County, and Richard Boylan of Ashe and Watauga Counties. The group flew to California, hopped in a mini-van, and toured for a week seeing and learning techniques and new ways of doing things in the hopes of using that new knowledge and experience to the benefit of North Carolina growers.

In northern California, the group traveled to a United Plant Savers conference, John Jeavons' Ecology Action demonstration farm, and Frey Vineyards and Winery. In southern Oregon, stops included Seven Seeds organic seed farm, Herb Pharm, Horizon Herbs, and Pacific Botanicals. We were met by very gracious hosts everywhere we traveled, and it was certainly a worth while trip.



Richo Cech of Horizon Herbs explains some plants to our group. Photo credit: Richard Boylan

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THANKS TO OUR PROJECT FUNDERS:



GROWER PROFILE: JOHN COUNCIL

John Council has a vision for his farm in Hoke County. He and his family are in the process of getting his entire operation of over 60 acres, including his woodland, certified organic. This is no small task. Right now, Mr. Council has quite a diverse operation, with twenty head of cattle, hogs, goats, chickens, and vegetables. All his products are sold direct to consumers. He doesn't use any conventional chemicals on his land at all, and no fertilizer other than chicken manure. When I asked Mr. Council why he wanted to certify his farm organic, he explained, "About eight years ago, the Lumbee River had so many chemicals in it that they stopped people from fishing in there. They say a lot of the contamination is coming from what people are spraying on their farms, so I say, if it's in the fish, it's in the food. If it's in the food, then it's going to get in me. I don't want it to get in me, and I don't want to



John Council

sell my products to anybody else that way either." He also sees a lot of market opportunity in being certified organic.

Before purchasing his farm in 1991, Mr. Council raised cattle, chicken, and hogs, as well as corn and hay to feed them with on eight acres in New Jersey. Now, he's got over 60 acres to manage organically. His daughter, Jacqueline, and his grandson, Teddy, both help a great deal with the farming operation. Mr. Council's vision for the future of his farm is clear. As he said, "I've left very strict instructions. I don't want to get rid of this farm." Teddy will be twenty-one this summer, and he's interested in taking the farm over in the future. Mr. Council's farm is a family endeavor, and he hopes for it to stay that way for generations to come.

As a cooperating farmer in the Medicinal Herbs for Commerce Project, Mr. Council and his family are growing valerian for the first time this year. He hopes to have a product distinguished by its high quality once he becomes familiar with growing this new crop. As he said, "I want to have the best organic crop there is, and then I can put it on the market and get a good price for it." Mr. Council is one of several cooperating growers exploring valerian production this year.

HERBAL-LORE

Now that you are getting used to the idea of growing weeds on purpose in your fields (!) you can try using the ones that naturally grow in your yard, field, or woods for some common ailments. For insect bites and stings, use plantain leaves commonly found in fields and grassy areas. Chew the leaves slightly to release the plant juice and apply to the sting. Works great on bee stings, mosquito and spider bites. Try adding some peppermint leaves to your sweet tea this summer. Peppermint is cooling to the body and will help you cope with the summer heat. Plus it tastes great! You may also add some stinging nettle leaves and red clover blossoms. Nettle is



Common plantain

loaded with vitamins and if you are careful not to get stung when you gather it, it's well worth the effort. Avoid putting your face over steaming or boiling nettle, as you may be stung. You can use rosewater for many skin problems, including poison ivy, rashes and itches, even hives. Keep it in the fridge in a spray bottle for a refreshing spritz. Rosewater is cooling, like peppermint. It is made by adding fresh red rose petals to steaming water and letting it set until the water is nice and pink.

GROWER UPDATES!

The decision in late winter not to plant *Lespedeza capitata* set some cooperating growers back a bit, particularly in the east, but things are coming along well now, and plants are getting into the field. Here's a brief update by region:

In the mountains, **Pam Zimmerman** will grow various herbs in a "tea garden" to make her own tea blends to sell direct to customers who come out to her farm to pick berries. **Mary Janis** and **Dianne Tolman** both had great germination with false unicorn root (*Chamaelirium luteum*). **Al Sagan** built propagation beds for his catnip, and several growers are preparing to get seedlings in the ground, including **Justin Dillingham** (skullcap), **Joe Bocardy** (ashwagandha), **Chip Webster** (valerian), and **Russell and Karen Barry** (catnip and boneset). They will also try direct seeding catnip. **Brad Hinckley** (COG) and **Bruce Miller** are soon to plant dandelion seedlings to produce an acre between them.

In the piedmont region, **Barbara Joyce** successfully

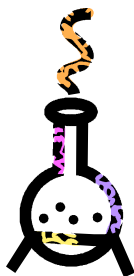
planted her valerian plants in May, and **Mike Faucette** is soon to follow. Mike is growing about 2 acres and Barbara is growing 1 acre. **Peggy Garrett** (COG) has planted *Echinacea purpurea* and *angustifolia*, as well as valerian. **John Council** has four rows of valerian planted and plans for more to come. **Melody Hartsell** says her *Echinacea purpurea* is about as pretty as she's ever seen it and she should be harvesting the tops in June.

From the coast area, the news is that **Ken Sanderson** (COG) will be experimenting with sweet annie, *Echinacea angustifolia*, and California poppy. He hopes to get enough germination on the *angustifolia* to plant about an acre. **Neal Johnson** plans to get his *Echinacea purpurea* in the ground by June. **Warren Brothers** (COG) harvested a small amount of chamomile flowers from his volunteer plants from last year and is preparing for a summer harvest of this year's crop. **Randy Ball** (COG) will be harvesting his California poppy crop at the end of May. He says they're the prettiest poppies he's seen. His transplanted sweet annie plants are also doing well. Everybody is doing a great job. Stay tuned next issue for what our other growers are up to!

* COG = Certified Organic

ANALYTICAL TESTING: WHY WE DO IT AND WHAT IT MEANS

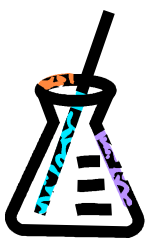
Most people who use herbs are concerned with their health. Some use herbs to alleviate minor ailments like allergies and others use them to heal from cancer, diabetes, and other serious illnesses. Two important criteria for consumers of herbs are purity and effectiveness. Herbs should be pure - free of mold, chemicals, and heavy metals so illness is not created by using them. They should also be effective. The effectiveness of an herb, or potency, is often determined by levels or concentration of *bioactive constituents*. Bioactive constituents are plant chemical compounds believed to cause the desired medicinal action in the body. To evaluate these purity and effectiveness criteria, herbs are tested in laboratories. Some tests that may be performed on herbs measure moisture and ash content, heavy metal contamination, pesticide residues, and bioactive constituent levels.



Some manufacturers of herbal products do *in-house testing* in their own private labs to make sure that raw and finished products comply with their standards. Presently these standards are not uniform among product manufacturers; nor are they set by a regulatory agency such as the FDA. Despite this lack of federally mandated standards, many companies require that the raw materials they purchase meet certain criteria they have developed to ensure product quality. Lack of uniformity explains why there are variations in product standards among companies. Although the herbal product industry is currently working to standardize these quality standards and the methods for measuring them, the American Herbal Product Association (AHPA) offers guidance on herbal product standards that are highly respected by herbal product manufacturers.

Although some companies will have all lab tests done to confirm that a product meets their quality standards, it is also helpful for growers to independently understand how their product will be evaluated. Growers may choose to have a sample from their crop tested by an independent, *third-party* lab that is not associated with any particular manufacturing company. These labs are often used to verify in-house test results. This can help growers understand the quality of their herb crop and gain negotiating power when selling the crop. For example, if the herb crop is highly concentrated in bioactives, the buyer may be willing to pay more per pound, since less material is required to manufacture concentrated herbal products.

Another important benefit of testing for bioactive levels is that those levels typically vary throughout the growing season. If growers know the levels their buyer is looking for, they can gauge the appropriate harvest time so that harvest coincides with peak levels of bioactivity. Keep in mind that different companies may test for different bioactive constituents. Growers should be sure to talk



with the buyer and be clear about what that particular buyer is looking for. Some Echinacea buyers, for example, will test for Cichoric acid only, and some others may test for total phenol content.

In addition to bioactive levels, it is also helpful to know if an herb crop has high concentrations of heavy metals or pesticides, which may be due to pesticide residues in the soil or naturally occurring heavy metals. If a sample is found to be contaminated with these substances, it may be necessary for the grower to choose a different field for herb production.

Throughout the Medicinal Herbs for Commerce Project, many of the herb crops produced have been tested for bioactive constituents, heavy metals, and pesticides. Results for these tests have been positive and encouraging. No residual pesticides have been found on the crops tested, heavy metal concentrations were below levels of concern, and the bioactive constituents were found at favorable levels. The chart below shows two of our cooperating growers' *Echinacea purpurea* bioactive constituent levels in 2005 compared with the same constituents measured in two branded *Echinacea purpurea* products obtained from a retail outlet. This analysis measured % total phenols in each sample. Total phenols include Cichoric and Caftaric acids, Echinacoside, and other compounds thought to indicate the medicinal activity of Echinacea. As you can see, our growers' levels were superior to or comparable with two national companies' Echinacea products found on the shelf.



Comparison of total phenols in *Echinacea purpurea* samples obtained from two North Carolina farmers and two national brands

Sample Origin	% Total Phenols
NC Farmer A	6.28
NC Farmer B	3.31
People's Choice Product	1.51
Nature's Way Product	4.40

Analyses performed by Atlantic Biological Laboratory of Elizabeth City, NC in 2005.

This season, the project plans to test several growers' Echinacea and Valerian crops for pesticide residues and bioactive constituent levels. This is part of our research into how to produce the highest quality medicinal herbs in North Carolina possible.

The Medicinal Herbs for Commerce staff is compiling a list of third party labs that perform these tests so that growers know where to turn if they choose to test their herbs before selling. Stay tuned to our website: (www.ncspecialtycrops.org/medherbs), as that information will be posted there.

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Medicinal Herbs for Commerce: A project to encourage the diversification of NC farms
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MOUNTAIN HERB DRYER UPDATE

The Medicinal Herbs for Commerce Project is making progress on establishing herb dryers on cooperating farms in the mountain region. Two sizes and styles of dryers are available, depending on each farm's scale. The prototype of the larger dryer, pictured to the left, is a 10'x16' wooden building constructed on farm by Liberty Utility Building Company, and each will have a heating and fan unit installed on the back. The prototype for the smaller dryer, pictured below, was purchased from Dr. Teena



Large dryer prototype at Jason Davis's Northriver

Hayden, who used it in conjunction with her research on medicinal herbs in western NC. We are lucky to have come upon this dryer, which will be well suited for several smaller scale growers. A modified version of this dryer will be constructed by David Grimsley for these growers. A meeting is being planned for mountain growers to come see each prototype dryer.



Small dryer prototype, photo credit Teena Hayden

NCSU STUDENTS GET ENGAGED

Undergraduate students at North Carolina State University have been collaborating with the Medicinal Herbs for Commerce Project over the past year. The students were part of a Marketing Research course (ARE 495) taught by Bob Usry, Extension Specialist and Lecturer in the Department of Agricultural and Resource Economics. Through this collaboration, students conducted research into the medicinal herb industry in order to come up with a marketing plan for a hypothetical herb business in North Carolina. Their hypothetical business? *Second Nature Herbs LLC* - a company producing and marketing high quality dried, cut, and sifted medicinal herbs to local consumers in the Asheville region. The students' final product was a fact-filled document and presentation made at a student marketing research competition Kansas City this April. Senior Stacy Marshall is continuing this marketing research as an independent project right now. This research is proving useful for our understanding of the industry and the market potential for medicinal herb growers in NC.



Stacy Marshall, NCSU senior