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Supporting Sustainable Agriculture
in the Southern Appalachians through
Educational Programs and Outreach




...e-news

19th Annual Spring Conference

19th ANNUAL



Organic Growers School
spring conference

**Organic Growers School
Spring Conference
March 3-4, 2012**

University of North Carolina at Asheville
A Weekend of Workshops for Beginning Gardeners
to Advanced Commercial Growers

Featuring over 100 classes on all aspects of sustainable living!
Gardening, Greener Living, Farming, Livestock, Permaculture, Alternative Energy,
Herbs, Primitive Skills, Fruit Production, Forestry, Cooking, Landscaping, and more!
PLUS a seed & plant exchange, kids program, trade show, and silent auction.

Our schedule will post online and registration will open December 1st!
A sneak peek at our favorite classes for 2012:
Farmstead BioChar, Small-Scale Grass Management using an Austrian Scythe, Keeping
A Family Milk Cow, Value-Added Firewood, Resilience Farming Techniques,
Preserving Wild Foods, Medicinal Herbs for Kids, Charcuterie, Forest Gardening,
Permaculture and Human Nutrition, and much, much more!

**Want to expose your business to the largest convergence of foodies,
farmers, and conscious consumers in the southeast?**
[Consider a Conference Sponsorship.](#)

Are you a high school student interested in a future in agriculture?
scholarship opportunities for high school students and FFA members! Apply online
starting December 15th.

**Are you a commercial farmer in Cherokee, Swain, Jackson, Clay, or Macon
County?** We are partnering with Sow True Seed to offer scholarships for farmers from
far western NC. Apply online starting December 15th.

Volunteer Opportunities are available in exchange for registration fees. Application

period begins December 15th.

Holiday Deals Consider buying your beloved gardener friends and family members a ticket to the OGS Conference as a holiday surprise! *We'll be sending out a coupon for discounted gift tickets in our December Holiday e-Newsletter.* Take advantage of extra savings by purchasing gift tickets for the holidays!

For more information about this event, [visit our website](#). For specific inquiries, [contact us via email](#).

See you there, green thumbs!

Thanks to our Advertisers

Reems Creek Nursery & Landscaping



Organic Resource

Want to discover the NPK values of some common organic fertilizers? This helpful pamphlet from Colorado State University Extension is the place to look. This may allow some frustrated organic growers a bit quicker success in matching your organic soil amendments to your soil test reports in 2012!

[Download the pamphlet here.](#)

News Bits

News Bits are reader-submitted news, events, and opinion. Submit your bit [via email](#).

OGS Apprentice Link to See Upgrades & New Features

Farmers! Aspiring Farmers! Listen up! Our apprentice-to-farmer matching service, which grew by leaps and bounds in 2011 is seeing upgrades and new features for 2012. We are working on a new web interface for the program that will of course (find you a farm worker or a farm job) but also allow you to search more easily, save your favorites, manage your account easily, and much much more.

We're expecting to roll out the shiny new site sometime after the New Year. Start thinking about your 2012 work season...don't let April happen and not have your hiring or job search finished. We can help. Farmers: If you have questions about setting up an apprentice program on your farm, call us at 828.582.5039 for advice.

Organic Seed Alliance Seeks Feedback to Build Seed Networks in Southern US

The Organic Seed Alliance (seedalliance.org) along with several local partners is assessing the organic seed system in the Southeast and identifying collaborative opportunities to expand and improve this system. Obtaining feedback from stakeholders is vital to this assessment process. Please take ten minutes to complete the questionnaire. Your responses are voluntary and will be held confidential.

You can access the survey here:
www.surveymonkey.com/s/SoutheastSeed

Thank you for your time and your commitment to building organic seed systems in the Southeast!

Cost Shares Available for Appalachian Farmers

The Appalachian Sustainable Agriculture Project offers cost share opportunities for farmers marketing projects within the Appalachian region. Marketing projects must be on behalf of [Appalachian Grown Certified Farms](#), and must incorporate the Appalachian Grown brand. Past projects have included business cards, websites, farm signs, newspaper ads, and more. [Visit their website](#) for more information, and to download the application (there are quarterly deadlines to apply. Next deadline: Jan 2, 2012). Inquiries should be directed to Bridget Kennedy: bridget@asapconnections.org or

Meet CRAFT

The Patchwork Underground

by Andrea Van Gunst



We ended our 2011 CRAFT Tour season at Patchwork Farm, the home and farm of Alyssa and Adam Sacora. Alyssa led the tour and we learned about her vegetable garden, greenhouse and fruit orchard. Alyssa farms on a little less than a 1/4 acre and does all her farm work by hand, only renting a tiller when she absolutely needs it. She said that this is much more enjoyable for her, she doesn't have to spend money to fix machines and she always knows that she can get her work done since there is very little that will break! All the beds are wide, raised beds and she grows intensively on them, making the most use of her limited space.

Alyssa decided that she did not want to sell at a week-end tailgate as it would conflict with her lifestyle (not giving her enough time to spend with her partner, making out of town week-end trips impossible, etc). She chose instead to set up a table at FLS (First Light Solar) where her partner Adam works. With a staff of 70, this seemed like a good place to sell. She also sold to Trout Lily Market in Fairview which also ended up being a great market for her produce. Alyssa is also currently running a winter CSA and so she had many hardy greens still in the ground, with squash, onions, garlic and potatoes stored in her barn. Her 6 member CSA is a "pay as you go" CSA: members pay \$25 each week – this is a good insurance plan for Alyssa as she can determine each week whether there is enough produce to sell.

We moved on to see her homemade passive solar greenhouse. She and Adam scrapped a lot of materials and put them to good use and this structure ended up only costing them a few hundred dollars to create. Alyssa showed the group how she uses soil blocks to make her starts and a lively conversation followed about how to keep starts alive and healthy in the summer heat. We ended our farm tour at the orchard. Alyssa put in a variety of raspberries last spring: white, black and red varieties and she's looking forward to using them to make value-added products as well as for home use. She and Adam also received many different kinds of fruit trees and bushes (apples, persimmon, kiwi, blueberry, etc) for their wedding present and those plants were newly in the ground, thus completing the orchard.



Following our outdoor tour, we headed inside where Alyssa and Andrea both talked about their first year of farming in more detail. Topics such as financing the first year, marketing and sales, what to grow and how much, pest and disease management, labor, etc. were all covered. It was a good chance to hear how two beginning farmers, with almost equal amounts of land to farm, made their decisions.

We ended, of course, with yet another amazing potluck dinner. It was so wonderful to say goodbye to folks who are heading off for the winter and to say "good luck" to several new CRAFT farmers who will be starting their farms next year! It's really exciting to see this process in CRAFT and we hope it will happen again next season.

Thanks to all CRAFT members who came out, participated, gave tours, helped with the CRAFT handbook, etc. You all make CRAFT what it is and we hope to see you again next year!!

 Organic Growers School
CRAFT

CRAFT stands for Collaborative Regional Alliance for Farmer Training. The program gathers seasoned farmer,

their farm workers, and other students of farming together for monthly farm tours, coordinated peer-reviewed trainings, and social events to facilitate in-depth education for aspiring commercial farmers. Tours typically run from April-November annually, with trainings and socials scheduled in the off-season. Membership is rolling, and you can join online anytime. For more information, [visit our website](#).

Gardener's Corner

Ask Ruth



Ruth,

We are experiencing an infestation of stinkhorns this year. Over the last month, we've had 120-150 of them this fall (including the unopened pods) complete with the flies and the stinkhorn beetles to spread their spores. They came into our garden either from some leaves or some irises that were given to us. They mostly are concentrated in the iris bed, but we've had 20 or so in another area in the leaf mulch.

I don't use any chemicals but would consider doing so in the iris bed if they continue so heavily. Their stench is nauseating.

Is there any safe control for these vile fungi?

Brotherhug

Dear Brotherhug,

As an avid and knowledgeable gardener, you must be very frustrated that these mushrooms are making your garden unbearably "stinky" and unpleasant. I have never had this problem or even seen a stinkhorn mushroom myself, so I did a little research to see what I could find out. Stinkhorns are reputed to emit a smell like rotten meat, decaying flesh, or feces. I told Brotherhug that I didn't realize they smelled *that* bad, and he replied...*"they actually smell worse than THAT bad!"* Flies are attracted to those sorts of awful smells. When the flies land on the slimy, smelly substance secreted by stinkhorns, the substance sticks to the fly and is then relocated when the fly lands on something else. That is how the stinkhorn spores are spread around.

Stinkhorn volva (immature fruiting body) resemble hard-boiled eggs and these "eggs" are the first visible sign that a stinkhorn is about to sprout. Oftentimes sprouting takes only several hours. The mushroom (mature fruiting body) emerges from the egg and is soon covered with a slimy dripping mass that smells repugnant to most people. If you pull up the egg and prevent it from sprouting, you will prevent the spread of spores.

at right: Brotherhug's Stinkhorn "eggs"

But remember that the stinkhorn mushrooms are just the visible fruiting body of a much larger **fungus mass** (mycelium) that is growing beneath the surface. When fungal spores find the right habitat, they send out long filaments called hyphae. Groups of hyphae can sometimes be spotted in soil or under bark. They look like a mass of fine white or dark threads; this growth is called mycelium. Destroying the fruiting body (the mushroom) will not destroy the source of the stinkhorns...any more than picking an apple will kill the apple tree. In fact, fungi can remain dormant for long periods, producing fruiting structures only when the conditions are just right ~ like during periods of heavy rainfall. Please note that the presence of mycelium in your garden is not necessarily a bad thing, since many fungi, such as mycorrhizae, are beneficial.



Many of the stinkhorns have novel names ~ dead man's fingers, lizard's claw, starfish stinkhorn...and numbers of them are phallus-shaped with somewhat explicit names. Stinkhorns fall into two main groups, Phallaceae (single-stemmed) and Clathraceae (usually multi-stemmed). Brotherhug suspects he has *Mutinus caninus* and the Octopus Stinkhorn, *Clathrus archeri*. The Squid Stinkhorn, *Pseudocolus fusiformis*, is more commonly found in the Eastern USA. *Phallus ravenelii* is another stinkhorn common from Quebec to Florida, and west into the Midwestern states. Check out this YouTube of a stinkhorn in action, and note the flies (they spread the stinkhorn spores): <http://youtu.be/VG7JTuJN6qQ>

Some stinkhorns are eaten in Europe, and certain varieties of netted *Phallus* stinkhorns are sold in Asian

markets and considered to be an aphrodisiac. Into the 20th Century, stinkhorns were used medicinally by some folks for rheumatism, gout, and other ailments. However, do NOT eat any mushroom unless you are 100% sure of its identity and whether it is edible. Many mycologists will not eat any mushroom found in the field just to be on the safe side.



at left: *Brotherhug's Octopus/Squid Stinkhorn*

Brotherhug and I discussed the possibility of using an organic copper fungicide on his stinkhorns; however nothing in the research supported this approach. **Mulch** was implicated as the main carrier of the stinkhorn spores, and Brotherhug does use a lot of *fresh* wood chips, and leaves as mulch (in the pathways initially, and later moved into planting areas). Generally, mulch contributes to positive outcomes in the garden and landscape ~ such as weed suppression, moisture retention, production of beneficial microorganisms including mycorrhizal fungi, and eventually mulch helps to build humus in the soil. The trick is to keep the bacteria/fungus ratio in balance in your mulched areas.

Here are a few practices that can help prevent stinkhorns:

- Do not add fresh mulch on top of the stinkhorn-contaminated mulch because that will not solve the problem, and the stinkhorn cycle will be repeated next time conditions are optimal.
- You *can* till the stinkhorn-contaminated mulch into the soil, soak down the soil, and then re-mulch the area with new mulch.
- Wet all new mulch thoroughly *at the time of application* (within the first day) in the landscape. Dry mulch allows fungi (think nuisance fungi) to out-compete bacteria. When rain eventually arrives later in the season, the fungal mass is well developed and ready to fruit. Ideally, maintain the water content of mulch at least at 40% of the total weight, without making the area swampy.
- Deeper mulches of 4" to 6", especially if composed of fresh woody materials, begin to decompose in the heat of summer. The decomposition process dries out the mulch, which can then be colonized by fungi to such a degree that it can actually repel water, leaving your plants high and dry. The ideal mulch depth is 1 ½" to 2". It is interesting to note that, according to reforestation studies, mycorrhizal development is encouraged by a shallow mulch, and discouraged by a deep mulch (mycorrhiza is a beneficial fungi that forms a positive relationship with plant roots, so you want to encourage it).
- The type of mulch you use can also make a difference. To *discourage* stinkhorn habitats, use bark chips (nuggets) from older pines or cypress since they resist decay. Avoid using hardwood bark mulches, and most species of ground wood (hardwood and softwood) mulches, or other small-particled mulch. They are inclined to rot faster ~ so they more readily contribute to problems in the landscape.
- Finely ground mulches will steal the nitrogen they require for their decomposition process from your plants, and leave your plants nitrogen-deficient. If you do use finely ground mulches or hardwoods, consider composting the mulch prior to adding it to your beds. Try adding a strong supplemental nitrogen source such as blood meal (12-0-0) to the mulch, and then compost it (at 130-160 degrees) for about six weeks. This will lower the carbon/nitrogen ratio and result in a product that is supplying nutrients to your plants rather than starving them.
- Composting will also kill any pathogens imported on diseased plant material, and can correct pH issues in the mulch, as very acidic mulch (below 5.2) promotes fungal growth and inhibits the growth of bacteria (you want a balance of both fungi and bacteria).
- Pay attention to the moisture content in your mulch. Maintain moisture in the mulch ~ whether in pathways or in planting beds ~ throughout the season to prevent fungal take-overs.

See the **Stinkhorn Hall of Fame** http://www.mushroomexpert.com/stinkhorn_fame.html

Conclusion:

Brotherhug, it sounds like you already have a lot of mulch-type material on your property that you probably don't want to waste. I would either till the current mulch into the soil and then wet that area thoroughly, OR remove the contaminated mulch and compost it in windrows for 6 or more weeks (with additions of nitrogen and attention to moisture content...sounds like a lot of work doesn't it?). I suspect that the stinkhorn spores may be developing in the mulch when it is still in the pathways and that they remain viable once spread on your garden beds. Since you like to use thick mulches in your pathways, I suggest that any new mulch that you add is composted first, or composted right in the pathway. This could be accomplished by layering the leaves/wood chips with manure, grass clippings, or by adding bloodmeal (or other nitrogen source) to the leaves/wood chips as you mulch your pathways. I think the dry summer enhanced conditions that favored your stinkhorn population. At the very least, I would pay attention to the moisture content in any mulched beds or pathways, since dry mulch will encourage undesirable fungal dominance.

I know you are completely disgusted with the hundreds of stinkhorns in your yard, and find the odor beyond revolting (I don't blame you!). But many of the experts I encountered doing this research found stinkhorns fascinating. My friend Stacia, a naturalist, reacted this way..."Are you kidding me? These are fantastic fungi! Why would you want to banish such an evolutionarily cool fungi...one that can mechanically mimic the smell of decomposing flesh? Why wouldn't you want to take every kid you know out there to check them out?"

All I can say is...I am really glad they are *not* in my yard.

Brotherhug, I truly hope this has been helpful and that your stinkhorn problem is better next year.

All my best,
Ruth

I consulted a number of sources in writing this article, but this one on mulch was particularly helpful. If you would like more in-depth information about mulch, here is the link:

<http://ohioline.osu.edu/hyg-fact/3000/3304.html>

Gardeners: Got a question for Ruth?

[Email it to us](#)

Ruth Gonzalez is a former market farmer, gardener, local food advocate, and founder of the Tailgate Market Fan Club where she blogs at <http://tailgatemarketfanclub.wordpress.com>. In her job at Reems Creek Nursery, Ruth offers advice on all sorts of gardening questions, and benefits daily from the wisdom of local gardeners.

Ask Ruth © 2010 Ruth Gonzalez & Organic Growers School

Farmer's Corner

Ask Tom



Tom –

I keep hearing about biochar and its many benefits. How can I make biochar on my farm?

-- Bill in Burnsville

Bill –

I am hearing the same buzz about biochar. Farmer Pat Battle mentioned terra preta probably five years ago in a hallway conversation at the OGS Spring School. Farmer Walter Harrill mentioned it at a [CRAFT](#) tour this summer, and local permaculture activist Zev Friedman mentioned his experiments last weekend at the North Asheville Market.

Terra preta are high carbon soils in the tropics dating back to pre-Columbian times. Some archeologists believe that earlier civilizations used charcoal to improve their soil quality in tropical areas where organic matter often leaves soil very quickly, but this charcoal seems to have lasted for centuries. Some scientists believe that charred biomass (biochar) can be used to both build soil quality and to sequester carbon in an innovative way to counter climate change. http://en.wikipedia.org/wiki/Terra_preta

At an OGS CRAFT session earlier this summer Walter Harrill described his method of burning last years berry canes in a 55 gallon drum with holes in the bottom. Once the fire was burning actively he smothered it by pulling out supports under the barrel and placing a lid on the barrel. He indicated that he was not completely satisfied with his results and referred us to the work of [John Rogers](#).

John developed a "top lit down draft" (TLUD) method similar to Walter's with the addition of a half barrel on top and a stovepipe stack. The sketch at right

may help, but in short, he removes the top of several 55 gallon drums, punches holes in the bottom, and fills them with loosely packed fuel. He builds a fire on the top of the fuel and once it is burning, he spreads the embers over the top of the packed fuel and puts on a half drum with stove pipe atop that he calls an "afterburner." The stovepipe helps draw air in the bottom of the fuel barrel which feeds the fire that gradually burns down through the fuel. Most of the oxygen is consumed by the fire layer so the smoke puts out the fire higher in the barrel, leaving charcoal behind. When the burning layer reaches the bottom, he caps the barrel to put out the fire and then quenches it with water from a hose. While one barrel is burning he starts others so that he can produce batches of biochar on a continuous basis.

In searching around the web I found another family of biochar "reactors" involving one barrel inside another. In this approach fuel between the two barrels triggers pyrolysis in the inner container, leaving charred wood behind. One of the best explanations of that approach is by [Peter Hirst](#). That process is more complicated than John's but Peter believes that it generates a better product.

A more basic approach is to build a fire and then smother it with soil or douse it with water.

[Charcoal makers have operated for centuries around the world](#), but only recently have we explored charcoal as a way to **sequester carbon and to counter the effects of climate change**.

So from a broad view biochar looks great. It:

- Disposes of fruit trimmings or other farm biological "waste"
- Destroys pests and diseases
- Builds soil carbon
- Produces few emissions with an efficient burner and
- Reduces the ill-effects of global warming by sequestering carbon in the soil for centuries.

I am adding a John Rogers' burner to my list of winter projects so that I will be ready for apple pruning in February. I also plan to attend the [OGS Spring Conference](#) where there will be a hands-on workshop on biochar. Be sure to check it out on the schedule, which posts online December 15th.

Let me know if you try it out.

Thanks,

-- Tom

Commercial Farmers: Got a Question for Tom?
[Email it to us.](#)

TOP LIT DOWN DRAFT BIOCHAR BURNER



