



Valuable Forest Botanicals and Updates on Related Regulations

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Medicinal herbs are increasing in popularity throughout the world.

The global market for herbal remedies is estimated at \$83 billion a year.



Photo on right from Nutraceutical World; data from Nutrition Business Journal



- Many of the herb products on the market are made from native botanicals that are wild harvested.
- All of these can be cultivated.

Photo on left by Tom Konster


Ginseng (*Panax quinquefolius*)



- The most popular of the forest botanicals.
- Wild plants are threatened.
- Many traditional uses.
- Tonic; improve mental activity, fertility, stress tolerance.
- Exciting research in cancer treatment.

Ginseng is challenging to grow

- **Methods:** woods grown, wild-simulated, and artificial shade grown.
- **How it is grown affects its value.**
- **Propagate** by seeds and seedlings.






Photos by Tom Konsler and Jeanine Davis




Woods grown root Intensively grown root

Fresh-dug ginseng

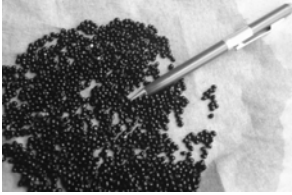




Wild root

Photos by Jeanine Davis and Tom Konsler

Goldenseal (*Hydrastis canadensis*)

- Perennial rhizome.
- Propagate by rhizome cuttings and seed.
- Fairly easy to cultivate.

Photos by Jeanine Davis and Tom Konsler

- Two major alkaloids, hydrastine and berberine.
- Topical antiseptic and to treat skin fungal conditions.
- To help “boost the immune system”; anti-inflammatory.
- To increase the efficacy of other medicinal herbs.
- To mask illegal drugs in urine tests.





Photos from companies' respective websites

Bloodroot (*Sanguinaria canadensis*)



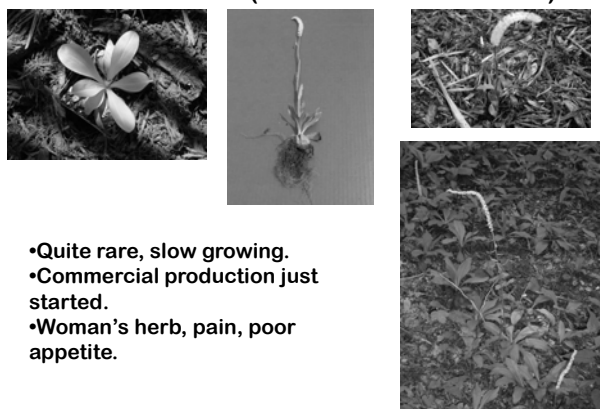
- Herbaceous perennial.
- Propagate by seed and rhizome cuttings.
- Almost all wild-crafted.
- Used as a dye, to treat skin lesions, and to prevent tooth decay.
- In cancer studies.
- Alkaloid: sanguinarine. Anti-microbial.

**Black cohosh
(*Cimicifuga* or *Actaea racemosa*)**



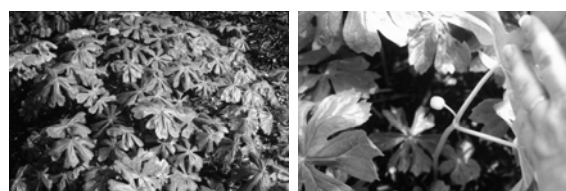
- Herbaceous perennial.
- Propagate by division and seed.
- Woman's herb; HRT alternative.
- In high demand; some cultivation.

False Unicorn (*Chamaelirium luteum*)



- Quite rare, slow growing.
- Commercial production just started.
- Woman's herb, pain, poor appetite.

**Mayapple
(*Podophyllum peltatum*)**



- Long history of use to treat liver problems, cancer, constipation.
- Propagate by rhizome cuttings.
- Easy to grow.
- Limited demand.

Wild indigo (*Baptisia tinctoria*)



- Hard to transplant, cuttings work well.
- Attractive nursery plant.
- Prefers drier soil than most others..
- Sore throats, typhus, wound cleaning.

Pink root (*Spigelia marilandica*)



- Used to treat indigestion.
- Very attractive ornamental.
- Propagate by root division.
- Is a protected plant species in NC-need permit to grow.

A Few Regulations You Need to Know About

- Before you can export cultivated or wild-collected ginseng or goldenseal roots, sliced roots, or parts of roots, you must obtain a CITES permit or certificate.
- Finished products are not regulated.
- For goldenseal, must prove it was collected legally or came from cultivated material.



Super quick primer on how to grow woodland botanicals



Site selection is critical



- Need a shaded site.
- Mixed hardwood forest; some pines okay.
- Should be similar plants growing on the forest floor.
- Good air and water drainage.
- Rich soil, high in organic matter.
- Soil should stay moist year round.

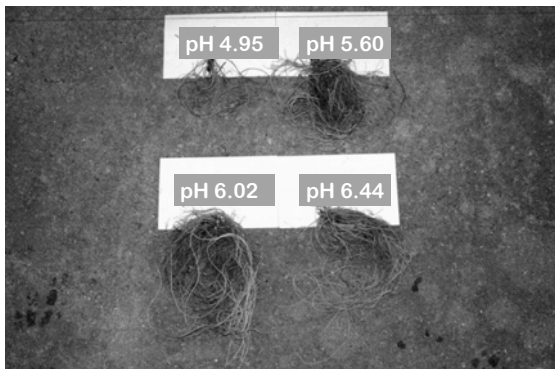
Soil should be tested and appropriate amendments applied



- Pull soil samples during site selection time.
- Most herbs do not benefit from high rates of fertilizer.
- May need to amend phosphorus, soil pH, and calcium.
- Most of these herbs grow best in a slightly acidic soil.

Photo by Tom Konsler

We found that goldenseal root growth responded favorably to increased soil pH.



- Have a plan to irrigate if necessary.
- Build raised beds if possible.
- Consider growing organically.

Photos by Tom Konsler

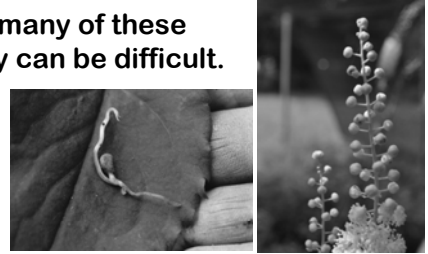
Seed and Planting Stock

- Obtain high quality seed and planting stock.
- This can be expensive, but usually worth it.
- If you dig your plants from the forest, do it legally and sustainably.



Bloodroot (left) and ginseng (right)

Propagating many of these herbs reliably can be difficult.



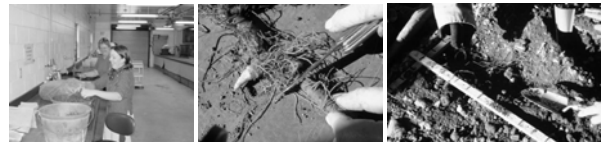
- Many of the seeds can never be allowed to dry out.
- Many seeds have stratification requirements that are not well understood.
- May take months to years to germinate.

Sow seed in fall or very early spring



By hand or with a small push-seeder.

Photos by Tom Konsler



Rhizome divisions are often used to propagate many of these herbaceous perennials.

Many of these roots have chilling requirements that must be broken to break dormancy.

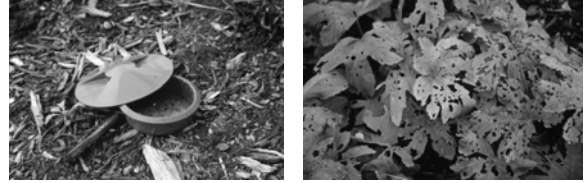
Plant in late fall or early spring.



Cover with several inches of an organic mulch

Photo by Tom Konsler

Practice Disease & Pest Prevention



- Good site selection; air and water drainage.
- Don't over fertilize.
- Don't crowd plants in bed.
- Diversity reduces problems. Grow small plots.
- Large plantings often require chemical controls to be successful.

Harvest

- These herbs must grow for several years before the roots are harvested.
- Plan ahead for how you are going to harvest.



Roots have to be washed...



and dried.

Available at ncherb.org



Provide the highest quality material

- Certified organic or sustainably wild-harvested.
- Free of heavy metals.
- Free of pesticide residues.
- High in bioactives.
- Be compliant with federal GMPs.
- Properly handled and stored.



local dealer



manufacturer



Internet sales

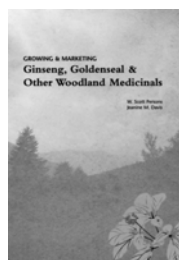
Marketing



value-added products



direct to consumer



Books

References



Ncherb.org



Whether you wild-harvest or cultivate these botanicals



There are new regulations that went into effect in Dec. and Jan. that you should be aware of.



Permits no longer required from NCDA&CS to grow goldenseal



Protected plant permits are required for protected plants and plant parts:

- Collected from the wild (doesn't apply if the plants grow naturally on your land).
- Propagated or offered for sale.
- Planted, introduced, or reintroduced into non-garden environments.
- A Certificate of Origin shall be issued to anyone selling or distributing any protected plant species legally acquired in-state or from out-of-state. Renewed annually.



Photo from fs.fed.us

You must apply for a permit to propagate or offer for sale any protected plant species

- Identify the source of the initial stock.
- Demonstrate that the plants have been nursery propagated and grown.
- Allow for a yearly inspection.
- Maintain records of all acquisitions for the length of time you have the plants.
- Identify each species by common and scientific name
- Each species to be offered shall be listed on the protected plant permit.



Photo from latimes.com

There are fees

- Approved permit requests to collect plants or plant parts from the wild will be assessed fees for each collection event if such collection is anticipated or is likely to have the potential to generate income.
- A fifty dollar (\$50.00) fee will be applied per species, or two hundred dollars (\$200.00) for each collection if Department staff make the collection on behalf of the permittee.



Photo from frenchbroad.com

The screenshot shows a web browser window displaying the 'Plant Industry - Plant Protection Section' website. The page title is 'Plant Conservation Program' and the subtitle is 'PROTECTED PLANT CONSERVATION OR PROPAGATION PERMITS'. The main heading is 'Protected Plant Permit Request'. The form includes fields for Name, Address, City, State, Zip, Phone Number, and Email. There is a 'Plant Species' field with a dropdown menu. At the bottom, there is contact information for Stephen P. Schmitt, Plant Pest Administrator, and a 'Submit' button.

Some relevant plants on the Protected Plants list:

- Echinacea purpurea
- Red raspberry
- Pink root



Photo from flickr.com

New Ginseng Rules: Wild Harvest

- The harvest season is Sept. 1- Dec. 31. (used to be April 1).
- There are no exceptions to this harvest season (e.g., collection from one's own land).
- Cannot SELL WILD ginseng out of season.
- If you collect on someone else's land you must have landowner's written permission with you.

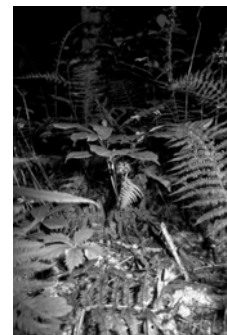


Photo from ca.uky.edu

Cultivated ginseng

- You can dig and sell it any time, but it must be certified as “Cultivated Ginseng” by a NCDA&CS employee.
- State export certificates not required as long as a copy of the “certified as cultivated” record accompanies it.



Photo from strong-ginseng.com

Dealers

- The buying season for wild & wild simulated green: Sept. 1 – March 31.
- The buying season for wild & wild simulated dried: Sept. 15 – March 31.
- Must submit purchase records monthly during buying season.
- Submit final report by April 30.
- Submit end of season weight receipt for any roots possessed at end of the buying season. Retain copy for certification for later export.



Photo from ginseng-seed.com

Dealer fees

- Resident unlimited qty: \$100
- Resident up to 100 lbs: \$50
- Non-resident: \$500
- Valid from July 1- June 30.
- Annual fees.



Photo from usatoday.com

Exports and Imports

- An export certification fee of \$3/lb must be paid at the time of inspection and issuance of export certificate.
- All ginseng imported into NC must have appropriate certificates from the state of origin.
- Cultivated ginseng does not need an export certificate.



Photo from ncaagr.gov

Questions?



Ginseng test plots in Madison County, NC