

West Virginia Herb Growers Research Project

FNE02-440

West Virginia Herb Growers

29 Campbell Rd.

Ellenboro, WV 26346

Objectives :

- We intend to research the growth of medicinally important herbs whose growth requirements indicate they would be viable in West Virginia
- Produce top quality, organic medicinal herbs to obtain premium prices and markets.
- Cultivate medicinal herbs that are considered endangered and grow herbs other growers are not cultivating.

Researched Herbs :

ARNICA- *Arnica chamissonis*

ASHWAGANDA- *Withania somnifera*

ASTRAGALUS- *Astragalus membranaceus*

COLLINSONIA- *Collinsonia canadensis*

DONG QUAI- *Angelica sinensis*

GINKGO- *Ginkgo biloba*

GOLDENSEAL- *Hydrastis canadensis*

GOTU KOLA- *Centella asiatica*

HAWTHORN- *Crataegus monogyna*

MARSHMALLOW- *Althaea officinalis*

MILK THISTLE- *Silybum marianum*

NETTLE- *Urtica dioica*

SCHISANDRA- *Schisandra chinensis*

ELEUTHERO- *Eleutherococcus senticosus*

VITEX- *Vitex agnus-castus*

YERBA MANSA- *Anemopsis californica*

FARM PROFILES :

Healing Hills Herb Farm- 51 ac., livestock and crops. 1/2 ac. market garden dedicated to herbal botanicals. 35 ac. of woodland botanicals. Location of WVHG central propagation facility.

Cedarlane Herb Farm- 55 ac. Newly formed botanical research center. 18 ac. being converted into growing areas. Woodland acres currently being managed for woodland botanicals. Future location of the WVHG collection and storage warehouse.

Garden Treasures- 165 ac. Crops and livestock with a seasonal commercial greenhouse. 50+ ac. of woodland medicinals with extensive trail system of research and educational beds.

Arrowhead Gardens- 73 ac. 1 acre market garden for produce and medicinal botanicals. 40 ac. woodlands in production of woodland botanicals and morel mushrooms. Many trails with research beds and areas.

LeeJun Herb Farm- 100 ac. Crops and Livestock. Organic botanicals, field grown and woodland. Organic broiler chickens, eggs, and laying hens.

COOPERATORS:

Cooperators in this grant are the farms listed above. Many of them also aided in the construction of the propagation facility.

PROJECT ACTIVITIES:

The project started off with the purchase of the seed stock and three workshops geared to educate the growers on the propagation, cultivation, harvesting and processing of medicinal herbs in January of 2002.

In June of 2002 the propagation facility was erected by the growers construction crew. The benches were built and the soil was prepared in the propagation facility beds. Since Gotu Kola can only be grown as an annual in this zone, (Zone 5) it was decided to grow it in beds in the propagation facility. The sale of the harvested Gotu Kola would be used to purchase supplies needed to operate the propagation facility. Our first crop of Gotu Kola is expected to be harvested in late Spring of 2004 and has already been reserved for a buyer.

The potting soil and plug trays were purchased and the first batch of seeds were sown. Also at this time, the seed that was recommended for direct sowing in beds was distributed to the growers for woodland propagation or field research.

The straw mulch was purchased and distributed to the growers along with field logs for recording plant progress.

Due to the late start-up of the propagation facility, the seedlings from the facility were distributed to the growers in late July of 2002, much later in the season than we had anticipated. At this time West Virginia was experiencing a severe drought, with some growers reporting 75+ straight days without rain. Most of the plant stock did not survive, even the woodland plants were severely affected by the dry conditions. Notably though, the Milk Thistle and Astragalus seemed to perform very well in the heat with one grower reporting a yield of Milk Thistle seed in excess of 1 lb. per 12 feet of row.

In November of 2002, it was decided that due to the poor growing season and the fact that many of the plant species in the project were 2-3 year crops, our project would be extended for another year through the 2003 growing season. The results of the first year of the project were presented at the West Virginia Herb Assn. fall conference and was very well attended. Also at this time the WVHG were asked to participate with four other herb grower assn. across the U.S. in a USDA- Value Added Development Grant

to research the feasibility of marketing Chinese medicinal botanicals in the U.S. to Oriental medicine practitioners.

In March of 2003 the propagation facility was opened late due to problems with the heat source. This problem was corrected and by the end of the month the remainder of the seed was sown in flats. Seedlings were distributed to the growers in late May of 2003 except for the Yerba Mansa which took 3 months to germinate. Yerba Mansa was distributed in July of 2003. Also at this time the WVHG were awarded a grant from the West Virginia Dept. of Agriculture to construct a prototype portable herb dryer for use by growers who are in need of drying facilities, but cannot afford the expense of constructing their own drying room.

The 2003 growing season was slightly better than the year before in crop performance, but the unusually high amounts of rainfall across the state made it next to impossible to complete a mulching study. All growers were reporting having to pull mulch off of the field grown plants to keep them from drowning. High numbers of plant stock was lost due to a combination of heavy rainfall and fungal diseases. Fungal diseases were kept in check with the regular use of chamomille tea spray in the field and absolutely no fungal diseases occurred in the propagation facility. All seedlings in the propagation facility were given a one time dose of chamomille tea spray two weeks after germination. All seeds with a soaking requirement were soaked in willow bark tea prior to sowing. All in all, even though we did not get enough good data for our mulching study, all growers are in agreement that straw mulch out performed grass clippings and shredded newspaper in weed suppression and overall plant growth and development. And once again, even with the extremely wet growing conditions all year, the Milk Thistle and Astragalus performed much better than all other field grown crops.

RESULTS:

The results of our project are contained in the Growers Guide. It is the sum of the research done prior to actual cultivation and the results found by the growers during cultivation. We were also successful at forming the growers group and giving the members seeds and planting stock to get started in the business of herb production. The growers are all committed to organic growing practices to insure premium prices in the marketplace. With this grant we were able to not only provide plantstock to get the growers started,

but provide important research on medicinal herbs not commonly cultivated in West Virginia. Continuing in this tradition, the WVHG were awarded the USDA- Value Added Development Grant for \$150,000 to participate in a feasibility study of marketing Chinese medicinal botanicals in the U.S. We will be researching 6 different Chinese herbs in field trials starting in Spring of 2004.

Other notable results were the herbal sprays and soaks seemed to perform very well in the propagation facility and the field. No diseases of any kind occurred in the propagation facility and only reported minor outbreaks of fungal diseases in the second year. From what little research data was obtained from the mulching study, straw mulch performed the best, offering the best weed suppression and moisture retention capabilities.

CONDITIONS:

Again as stated before, the Summer of 2002 was a very severe drought year for West Virginia. Most of the state was under a state of emergency, with many growers, including myself, reporting 75+ days with no significant rainfall. Most of the field crops were lost and the woodland plants did not fare much better.

Spring and Summer of 2003 started out with record rainfalls and flooding throughout the state. And again, in Summer, much of the state was under a state of emergency for severe flooding. Growers were reporting crops being completely submerged underwater for several days at a time, more than once. The woodland plants performed much better than the previous year but were still recovering from the effects of the drought in 2002.

ECONOMICS:

Growers are expecting sales in the Fall of 2004. Root crops will have had 3 years of growth and should be at a harvestable size.

The WVHG has gained new members as a direct result of this project, thus adding funds for new projects and increasing our member base.

Also as a direct result of this project, the WVHG were included in the USDA- Value Added Development Grant as previously explained. I am

happy to say this grant was awarded to the WVHG, giving us \$30,000 to explore the feasibility of Chinese medicinal botanicals in the Mid- Atlantic Region. The grant awarded by the West Virginia Department of Agriculture for the construction of the prototype herb dryer in 2002 was also a direct result of this grant. This grant provided the opportunity to herb growers in this state to come together and form an organization, thus giving the needed credibility to be eligible for other opportunities in herbal research.

ASSESSMENT:

Besides two terrible growing seasons, our main goal was accomplished by setting up a growers group in West Virginia and providing them with seed and plant stock for start-up, and also providing them with the necessary education required for properly cultivating these plants for market.

Much new interest and many new projects have been generated from this project and we hope to be doing more research for SARE in the future.

ADOPTION:

N/A

OUTREACH:

Copies of the Growers Guide will be distributed to all agricultural based organizations in the state and any interested growers from surrounding states. It will also be posted on the West Virginia Herb Association website at www.wvherb.org. We have also included contact information on the cover of the Growers Guide for anyone to call to obtain copies. All members of the WVHG will receive a copy and a copy will be put into the new members packet distributed to new members.

Scott Snyder
Director, WVHG