

*The Medicinal Botanical Program
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Third Symposium: A Complete Success!

The Third Symposium on Medicinal and Aromatic Plants: Technology Transfer for Growers, Healthcare Providers and Entrepreneurs held at Mountain State University September 22-25, 2004 was a complete success.

The event was sponsored and organized by the Mountain State University Medicinal Botanical Program, Beckley, WV, and the USDA/ARS Appalachian Farming Systems Research Center, Beaver, WV.

Remarks from participants and speakers have been very positive and congratulatory, especially with regard to the excellent organization, and the quality of topics, speakers, workshops, food, facilities and others.

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Symposium Remarks:

"I just want to congratulate you on putting together one of the best conferences I have ever attended. In the past 28 years I have gone to many, many conferences but this one was special. The program was superb, the workshops were excellent, and the organizational details were flawless.

One of the most important aspects of an event like this is the interaction among participants, speakers and vendors. I am delighted to have had the opportunity to interact with these people and I anticipate a great deal of future collaboration as a result.

I will surely promote MSU as one of the few schools that will be offering a

Bachelor's degree in this subject area."

Bob Beyfuss, NY

"Wendy Graham and I had such a good time attending your wonderful conference last week at Mt. State University. The presentations we heard were outstanding. Meeting the participants was also very helpful and fun."

Linda Granacher, KY

"I thought the conference was great! I would pay more (to attend). I was quite impressed with all the speakers that were assembled from far away. Please tell me how to obtain copies of videos."

Maureen Bonness, FL

"Excellent conference. Knowledgeable speakers. Excellent facilities and food. I would highly recommend it to others.

Thank you"

John Perez, WV

"The Symposium was wonderful. I enjoyed all of the speakers. I can hardly wait for next year."

Collen Hurley, WV

"The conference was very educational. The MSU campus is beautiful. We appreciate your invitation to hear wonderful speakers, participate in workshops, and network with people interested in medicinal plants."

Patty Johnson, OH

Medicinal Botanical Program with New Director

MBP's new director ready to undertake the development of the curriculum for the new Bachelor of Science degree on Herbal Sciences.

Dr. Mario R. Morales joined Mountain State University as the new Director of the Medicinal Botanical Program on August 30, 2004. He is an experienced educator and researcher and a graduate from Purdue University, West Lafayette, Indiana. He has worked extensively on production and improvement of vegetables, herbs and medicinal and aromatic

plants. Dr. Morales' objective is to bring the MSU Medicinal Botanical Program to its next level of development. The main activities in his work plan are to 1) coordinate research for the collection, propagation, production characterization, and improvement of Appalachian medicinal plants and aromatic herbs; 2) develop and establish a curriculum for a Bachelor

of Science degree on Herbal Sciences; 3) organize and implement educational events such as symposiums, seminars, workshops, field days, etc.; 4) improve the Program's facilities such as the greenhouse, the garden and walking trail, the newsletter, and the web page, which will facilitate research, teaching and outreach activities.

Appalachian Plant Profile: Wild Yam

Please contact your state's Department of Forestry for laws and regulations concerning wild yam harvest in your area.

*Submitted by:
Dean Myles
Horticulture Technician
Medicinal Botanical
Program, MSU*

Wild Yam, *Dioscorea villosa* L., is a perennial vine native to North America. It has heart-shaped leaves with furrowed veins twins from an edible tuberous rhizome. The plant produces yellow-green flowers in May through August.

Young plants can be easily recognized by the whorled leaf arrangement. A single stem produces from 3 to 8 leaves before starting to vine. As the plant matures the leaf becomes alternate, but is still identifiable by the lower whorled leaves.

Wild yam can be found growing in moist woodlands throughout its range.

Traditionally root tea has been given to relieve colic, morning sickness and rheumatism. The root has been also used for testicular deficiency and impotency. It may lower blood pressure and reduce migraine attacks. It also may be used as a contraceptive and reduce premenstrual syndrome. Most every steroid compound used today is derived from wild yam.

Wild yam can be easily cultivated from root cutting and from baby tubers found in late summer in the leaf axis. These tubers should be planted in pots until ready for spring planting. It prefers moist

well drained soil and partial shade.

Wild yam is common in West Virginia but its harvest may be regulated in other states. As with any plant harvested from the wild, please contact your state's Forestry Department for harvest regulations.

Always remember to practice sustainable harvesting techniques.



Contributor's Corner

Ginseng from Seed

David C. Carman

For those interested in growing ginseng from seed, the following procedure will produce quality plants for hobby or profit.

"Green ginseng seed" means fresh picked seeds. The term "green" has nothing to do with the color in this case.

"Stratified ginseng seed" means last year's seed that has been harvested and properly maintained through winter and the following summer for planting in the fall. Stratification provides safety and development time for seeds. Very few ginseng seeds, if any, will germinate until they are a year and a half old, therefore, green seed will not come up the first year!

Pick seed berries as they ripen (swell up and turn red). Put them in a container in a cool place out of the sun (root cellar or basement) until all have been harvested. If berries begin to rot and/or mold, don't be concerned as this will cause no harm to the

seeds. At the end of the harvest, seed should be stratified immediately.

To stratify, sift some dry sand through a piece of window screen and discard the large grains that will not pass through. Mix seed berries and the fine-sifted sand about half and half by volume and put this mixture in a paper bag. Make a bag from screen wire and put the paper bag into the screen bag. This will prevent sand loss through the screen bag until you can get it buried. Bury the bag in a shady spot on a sloping ground that retains some moisture during dry summer months. Cover with about six inches of soil. Be sure to mark the spot so you can relocate your buried treasure.

After a year or more, that is, September through November the following year, dig up your treasure and wash away the fine sand through the screen bag, leaving only clean stratified seeds. Put the seeds in a bucket of water, skim off the floaters and throw them away. Good seeds will sink to the bottom.

Do not allow ginseng seeds to dry out at anytime. Seeds should be planted immediately after removal from stratification or placed in sealed plastic bags and put in the bottom of a refrigerator until they can be planted.

This procedure will produce almost 100% germination the following spring. Do not fail to plant your seeds before cold winter weather sets in, for they will sprout in the bag and ruin.

If you estimate you will have more than one screen bag of seeds and sand, make a square wood stratification box with screen bottom and lid and sides at least 12 inches long. Alternate one inch layers of sand and one layer of berries in the box until full or finish filling with sand if you have less than a full box. It is best to use black walnut or locust lumber and stainless steel screws for box construction. A single layer of newspaper in the box bottom will prevent sand loss.

Happy growing

Very few ginseng seeds, if any, will germinate until they are a year and a half old, therefore, green seed will not come up the first year!



Contributor's Biographical sketch

David C. Carmen was born in Mannington, WV on November 1, 1935. Now residing in southern West Virginia, David has been growing ginseng and other woodland perennials

as a hobby for 25 years. Mr. Carmen's hobby centers on a noble conservation effort. His main interest is to produce seed from wild transplants rescued from destruction

for the reestablishment wild populations. After stratifying his seeds, David replants the seeds in random areas in southern WV that once had natural populations.

CAMP Rescue Update

This area also has black cohosh, blue cohosh, blood root, wild ginger, ginseng, stone root, and Jack in the Pulpit.

The Conservation of Appalachian Medicinal Plants (CAMP) has been actively searching 4,000 acres in Raleigh County. Nearly one quarter of the extension has been searched. The exploration has located an area with a goldenseal population. This area also contains black cohosh, blue cohosh, blood root, wild ginger, ginseng, stone root, and Jack in the Pulpit. A visit to the area in March revealed several trillium species, trout lily, and mayapple. We have contacted the land owner and it has been determined this area is safe from mining activity. This area will continue to be monitored for ecological studies. The remaining property will be investigated by involving local citizens in locating known populations on topographic maps this winter. This information will be use to search the remaining areas of

concern on this property.

Camp also conducted an operation in April 2004 near Rhodell in Raleigh County. It involved a 152 acre mining operation. The property's aspect did not ecologically support plants of interest. However an investigation of a small cove area produced one small population of wake robin trillium, blood root and one hepatica. These plants were removed and placed in the Medicinal Walking Trail on the Mountain State University campus.

CAMP is finalizing plans to rescue a goldenseal population from mining activity in Wyoming County. This rescue involves 1500 plants that are involved in an ecological study conducted by Dr. Joyce Foster, USDA and Dean Myles, MSU. This population now is the direct path of destruction

from a mountain top removal operation. Camp has contacted the land owner requesting permission to rescue the population. They can not give permission to enter mining areas, but will not hinder a rescue if no industrial activity is taking place at time of rescue. We are currently working with the timber operation to gain access this fall after operations have ceased.

CAMP also has a 210 acre timber operation in Summers County to investigate in spring of 2005. This area according to the owner has populations of ginseng, black cohosh and pink lady slippers to the best of his knowledge. If you would like to volunteer for rescue operation or know of areas in danger of be destroyed by industrial activities please contact dmyles@mountainstate.edu or call (304) 929-1687

MBP Searches for Assistant Director

POSITION:

We are looking for the right professional to fill the position of Assistant Director of the Medicinal Botanical Program at MSU, Beckley, WV. This is a 12 month, grant funded, administrative faculty position with an annual salary of 35-38K.

QUALIFICATIONS:

The successful candidate should have a MS or PhD degree with experience in herbal medicine, natural products, phytochemistry, botany, or a related field with strong background in medicinal plants. Experience with conference planning, curriculum development, teaching and grant writing is desirable.

CONTACT:

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Herbal Medicine Research

Nutrition and cancer: A review of the evidence for an anti-cancer diet

Donaldson, M.S. 2004. *Nutrition Journal* 3 (19)

It has been estimated that 30–40 percent of all cancers can be prevented by lifestyle and dietary measures alone. Obesity, nutrient sparse foods such as concentrated sugars and refined flour products that contribute to impaired glucose metabolism (which leads to diabetes), low fiber intake, consumption of red meat, and imbalance of omega 3 and omega 6 fats all contribute to excess cancer risk. Intake of flax

seed, especially its lignan fraction, and abundant portions of fruits and vegetables will lower cancer risk. Allium and cruciferous vegetables are especially beneficial, with broccoli sprouts being the densest source of sulforaphane. Protective elements in a cancer prevention diet include selenium, folic acid, vitamin B-12, vitamin D, chlorophyll, and antioxidants such as the carotenoids (α -carotene, β -carotene, lycopene, lutein, cryptoxanthin). Ascorbic acid has limited benefits orally, but could be very beneficial intravenously.

Supplementary use of oral digestive enzymes and probiotics also has merit as anticancer dietary measures. When a diet is compiled according to the guidelines here it is likely that there would be at least a 60–70 percent decrease in breast, colorectal, and prostate cancers, and even a 40–50 percent decrease in lung cancer, along with similar reductions in cancers at other sites. Such a diet would be conducive to preventing cancer and would favor recovery from cancer as well.



Intake of flax seed, especially its lignan fraction, and abundant portions of fruits and vegetables will lower cancer risk.

In vitro susceptibility of *Helicobacter pylori* to isoquinoline alkaloids from bloodroot and goldenseal

Mahady GB, Pendland SL, Stoia A, Chadwick LR. *Phytother Res.* 17(3):217-21; 2003.

Methanol extracts of the rhizomes of bloodroot (*Sanguinaria canadensis*) and the rhizomes and roots of goldenseal

(*Hydrastis canadensis*), two plants used traditionally for the treatment of gastrointestinal ailments, were screened for in vitro antibacterial activity against 15 strains of *Helicobacter pylori*. The bloodroot rhizome extracts as well as a methanol extract of bloodroot suspension-cell cultures inhibited the growth of *H. pylori* in vitro, with a MIC50 range of 12.5-50.0

$\mu\text{g/ml}$. Three isoquinoline alkaloids were identified in the active fraction. Sanguinarine and chelerythrine, two benzophenanthridine alkaloids, inhibited the growth of the bacterium, with an MIC50 of 50.0 and 100.0 $\mu\text{g/ml}$, respectively. Protopine, a protopine alkaloid, also inhibited the growth of the bacterium, with a MIC50 of 100 $\mu\text{g/ml}$. The crude methanol extract of goldenseal

rhizomes was very active, with an MIC50 of 12.5 $\mu\text{g/ml}$. Two isoquinoline alkaloids, berberine and beta-hydrastine, were identified as the active constituents, and having an MIC50 of 12.5 and 100.0 $\mu\text{g/ml}$, respectively.

Note: MIC50 is the minimum concentration of an antimicrobial drug that completely inhibits the growth of 50% of cultures of a given microorganism (FAO/WHO)

Mountain State University

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Subscription

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You can also email your info to:
mmorales@mountainstate.edu

Contributions

Dear growers, processors, marketers, and practitioners, would you like to share your knowledge and personal experience on how to produce, process, market and use herbs and aromatic and medicinal plants with other people? It is simple. The only thing you have to do is to put

your ideas on paper (typed or handwritten) and mail them to us. We will publish your article in the next issue of our newsletter, The Herbal Dispatch. Optional: If you want, you can send also a short biographical sketch, so our readers can know you better. See Mr. David

Carman's article 'Ginseng from Seed' and his biographical sketch on page 3 of this issue. This article comes from three handwritten pages that he sent us.

Please send contributions to the regular or electronic mail addresses provided above.

Advertisements

We will gladly post ads of people interested in selling small quantities of herbs and botanicals. Please make sure that your ads are brief.

For Sale: Two year old ginseng seedling roots available for transplant at \$ 40.00 per 100 while supplies last.
Call (304) 384-9147

For Sale: 3 lbs of top quality dried wild ginseng with the neck and feeder root attached for \$400 per pound.
Call (304) 384-9147

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