



Inside Agroforestry

Look at the Possibilities

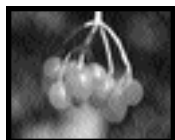
by Kimberly Stuhr, Technology Transfer Specialist, NAC, Lincoln, Nebraska

Not long ago a majority of farms in this country were small, diverse operations, offering a wide variety of products for sale, trade, or home consumption. Since World War II, the dominant trend in agriculture has been toward extensive monocultures, low crop diversity, low labor, and high-energy use. Evidence is now mounting that present monoculture farming systems, though highly successful at producing some crops, fail to recognize broadening consumer demand for a variety of Special Forest Products (SFP). Often called *non timber forest products*, SFP are produced from trees, or from within the forest ecosystem or agroforest. Some of the possibilities are listed below.

Medicinals and Herbs

- Goldenseal
- Ginseng
- St. Johns Wort
- Catnip
- Cohosh (Blue and Black)
- Paw Paw
- Witch Hazel
- Elder Flowers
- Saw-Palmento
- Tree Pollen
- Bloodroot
- Virginia Snakeroot
- Seneca Snakeroot
- Ecenacia
- *Many others*

Small diameter or low-value wood can be made into wood chips.



Highbush Cranberry.



Cantaloupe can be planted with Christmas trees or black walnut trees.

Decorative Florals

- Decorative grasses like Beargrass and Ferns
- Pine cones
- Flowers like Azaleas and Daffodils
- Pine, Fir, and Spruce boughs
- Christmas trees
- Grapevine
- Red Twig Dogwood
- Corkscrew and Pussy Willows
- Flowering branches like Apple, Cherry and Red Bud

Forest Crops

- Mushrooms: Shiitake, Morel, Chanterelle, Lions Mane, and Others
- Nuts: Hickory, Chestnut, Hazelnuts, and Others
- Pine Straw
- Maple syrup
- Firewood and Pulpwood
- Specialty Woods like Burlwood, Walnut, and Oak
- Fruits and Berrys like Blackberry, Raspberry, Blueberry, Sashatoon, Chokeycherry, Sand Cherry, and Others
- Willow Branches

Following are some resources if you're looking for more information

(See Possibilities on page 5)

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Finding Markets for Special Forest Products

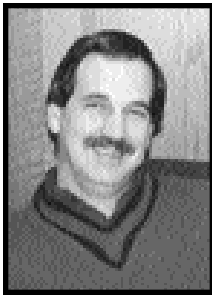
by Kimberly Stuhr, Technology Transfer Specialist, NAC, Lincoln, Nebraska

There has been tremendous growth in the demand for alternative goods as well as places to purchase them. (What this really means then is tremendous growth in *opportunities* for you and the landowners you work with to grow and market SFP).

Some reasons why there has been such growth of direct marketing opportunities are:

- Increase in population.
- Demand for safe, high-quality products.
- The desire of the buyer to come face-to-face with the producer.
- Customers are more interested in how products are produced.
- Less public access to land that can produce their commodities.
- Life styles value the experiences of harvesting-your-own products.
- Forest landowners are looking for annual cash flow.
- Forest landowners are looking at the total forest not just the trees.
- Inexpensive insurance protection

(See Markets on page 5)



NAC Director's Corner

*A commentary on the status of agroforestry
by Center Director, Dr. Greg Ruark*

Consider "Forest Farming"

This issue of *Inside Agroforestry* looks at forest farming. Although some agroforestry practices, like alley cropping, require a lengthy time period to establish and

*"This issue of Inside Agroforestry
illustrates some forest farming possibilities
and identifies sources
for additional information."*

realize a return on investment or, like tree-based riparian buffers, are primarily designed to provide environmental and wildlife benefits, forest farming can often increase on-farm income within a few years.

There are opportunities on farms that already have woodlots to immediately begin to manage these stands for high-value timber production, while generating an annual income by raising crops in the understory. To create the appropriate microclimate for forest farming crops

the forest canopy usually needs to be modified. From a forest management standpoint, this presents an opportunity to do some much needed thinning and pruning. The remaining "crop" trees will produce more wood and pruning will insure that this additional wood will be knot-free. Later, this clear wood can be sold for more money, as it is used for higher value products like sawlogs and veneers, rather than pulpwood or firewood.

Forest farming is especially attractive to small farms as it can be tried on a modest scale. For example, ginseng has been shown to be profitable on as little as a half acre. Transitioning into forest farming requires some "sweat equity," but labor can usually be scheduled to coincide with slack time on the farm. Crops like goldenseal, shiitake mushrooms, and decorative ferns can be produced for medicinal, culinary, or ornamental uses, respectively. Plant materials and production equipment are becoming increasingly available, with many sources now listed on the Internet. Market support for specialty forest products has also become more organized in some regions in response to increased consumer demand. This issue of *Inside Agroforestry* illustrates some forest farming possibilities and identifies sources for additional information.

Exploring Opportunities for Hybrid Poplar

by Gary Kuhn, NRCS Agroforester, NAC, Spokane, Washington

Washington State University (WSU) in Spokane hosted a regional conference in May, 2000 addressing hybrid poplar opportunities. The conference was sponsored by NAC, the Upper Columbia RC&D, and the WSU-Spokane Design Institute.


Poplars can provide multiple benefits including: improved on-farm income, waste management through poplar tree production, and carbon storage credits. The conference covered the culture and management of poplars, prospective markets and uti-

lization, wastewater permitting, dryland and irrigated production, poplar grower associations, poplar production in Hungary, and regional poplar growing issues and concerns.

To obtain an information packet from the conference, contact Janet Kidder the Upper Columbia RC&D in Spokane at 509-353-2187 or e-mail her at janetk@spkol.com.

NAC has developed three related publications: *Working Trees for Treating Waste*, *Agroforestry Note 17 - Wastewater Management Using*

Hybrid Poplars, and a two-page flyer *Working Trees for Carbon Cycle Balance*. NAC will also produce a condensed version of the conference video.

Be sure to visit NAC's website at, www.unl.edu/nac, to order free copies of any of our publications. In addition to *Working Trees for Treating Waste*, other *Working Trees* publications include: *Working Trees for Livestock*, *Working Trees for Wildlife*, *Working Trees for Communities*, and *Working Trees for Agriculture*. 

Specialty Forest Product Opportunities

by Dr. Scott Josiah, Assistant Professor and State Extension Forester, University of Nebraska, Lincoln, Nebraska

Sit back for a moment and take an armchair tour of your land. Let your mind wander over the fields, woods, creeks, and ditches around your farm or acreage, or even your backyard. Are your farmstead and livestock areas battered by the wind or buried under winter snows? Do you have unused fencelines, roadsides, woodlots, marginally-productive upland fields, frequently flooded bottomland or streamside areas, dry pivot irrigation corners, or just out-of-the-way and hard-to-farm small parcels? Getting tired of mowing acres of lawn on your acreage or ranchette every weekend? Could any of these areas be better utilized by producing a specialty forest product for your own use or for sale, while at the same time improving your local environment? Chances are, the answer is "yes".

There are many, many opportunities for producing, selling or personally enjoying specialty forest products in rural, urban fringe, or even in urban settings. Specialty forest products include an enormous range of products derived from woody plants grown in agroforestry systems. These include food products (nuts, fruits, mushrooms), decorative florals (pussy and corkscrew willows, spring flowering branches, and many others), medicinals and botanicals (ginseng, golden seal, echinacea, blue and black cohosh, etc.), and craft products such

as diamond willow, specialty woods, walking sticks, etc.

Most of these products can be sold


“All of these products come from woody plants that can easily be planted in a way that provides many environmental and conservation benefits.”

for a profit. Some markets are quite large and structured with both wholesale and retail outlets (e.g., for decorative florals, and some fruits and nuts). Other markets are quite local (perhaps a local jelly company, winery, floral shop, or craftsperson), and are better suited for the small producer. With targeted marketing and quality production, a producer can earn significant supplemental income from specialty forest products. Producing these products also can provide the basis for a great family or community-based income-producing project, with something for everyone to do, and with financial and social benefits to all.

On the other hand, you may simply want to produce specialty products for your own use and enjoyment. Perhaps you love to create floral displays and decorations. Why not produce your own materials, and harvest them just when needed and at the peak of quality? Or, you like to make your own

jams, jellies, wines, or dishes with nuts as an accent ingredient. Again, you can grow your own, maximizing quality and freshness, and creating unique recipes with ingredients and flavors not easily found elsewhere. Or perhaps you're a craftsperson or wood carver who demands top quality materials for your art. You can produce exactly what you want, and improve the environment as well.

All of these products come from woody plants that can easily be grown in ways that provide many environmental and conservation benefits. By planting in windbreaks, living snow fences, in alleys, or as streamside buffers, these specialty forest product-producing plants can reduce soil erosion, improve water quality, enhance wildlife habitat, and improve your own quality of life. And nearly everyone has a backyard which can be transformed into a low-maintenance "edible landscape," filled with species that produce edible, high quality nuts, berries, and mushrooms. Kids want a snack? Send them into the back yard to "graze" for fruits and nuts. Even if you work full-time and are just too busy to market or use them yourself, the local wildlife will certainly benefit from the improved habitat and food availability. And you and your neighbors will still enjoy the diverse plantings and beautiful flowers and fruits through the seasons, and the wildlife paradise you have created.

So start today to make your conservation plantings work for you and for the environment. Practice "productive conservation" by using tree and shrub species that produce specialty forest products to earn income, provide useable products for your own use, and protect and improve your environment. 



Black Walnut trees like moist, well-drained sites. High quality nutmeats and wood fetch premium prices.



Ginseng is grown under shade in forests or alley cropping / windbreak systems.

Forming a Producer Association Might Be The Way To Go

by Kimberly Stuhr, Technology Transfer Specialist, NAC, Lincoln, Nebraska

Do you know of several landowners interested in growing an alternative forest product? Maybe it's shiitake mushrooms, like landowners in Alabama. Or, maybe it's flowers, or nuts, or something else. Whatever the case, at some point these interested landowners are likely to ask you for assistance. It's easy enough to round up technical information and some marketing ideas, but what really helps is forming a "Producers Association."

In the 1980s a lot of landowners in south central Alabama were interested in shiitake mushroom production. Extension staff of Alabama A&M and Auburn University implemented several demonstrations and it just took off from there.

About that same time, the AlaTom RC&D Council was looking at mushroom production as a way for rural residents to develop alternative income. With a small grant the Council tested several strains of mushrooms under different conditions and conducted some "show-n-tell" workshops. The mushrooms not only grew well in Alabama, but word-of-mouth spread the idea so fast that demonstrations were put up in nearly every county in the state.

To keep up with the demand, Alabama A&M University Extension Specialist Hosea Nall and Norman Burton, Coordinator of the Ala-Tom RC&D Council in Grove Hill, Alabama formed the *Shiitake Producers Association*.


When the Association was first formed, grower members shared stories and techniques, pooled products, and shared purchases. The Association bought material in bulk to resell to growers. Currently, the six RC&D Councils in Alabama locate producers who are interested in mushroom production and then University Extension personnel bring in the technical expertise.

Alabama Cooperative Extension Specialist Cathy Sabota suggests that forming an association rather than a coop may be a better choice. She says that with an association, the growers themselves are in charge of what goes on rather than the RC&D or the Government (Extension). On-the-other-hand, the main problem for this group has been that since the association is statewide, it's an eight hour drive across the state so it's difficult to get everyone together.

Another thing to keep in mind when providing information to landowners, according to Cathy, is that they are usually first and foremost concerned about the bottom line

— information about the market, profits, how much work is involved, etc. Secondly, they want to know about techniques, where to get equipment and product.

The effort spent pooling resources to form an association, according to Cathy, is definitely worth the effort. Each producer benefits from sharing ideas. Most people begin sharing anyway and this provides an organized, efficient way to get people with similar interests together.

Organizing a group like this may be time consuming, but it just might be well worth the effort for everyone involved. 



Producers learn about shiitake mushroom growing techniques at a local producers farm.

Think Partnership

Partnerships are at the heart of all conservation initiatives linking land and people. They foster a cooperative environment promoting those factors necessary for success. Some of the benefits of partnerships include:

- Exchange information, experience, and expertise
- Share responsibilities and tasks
- Involve a cross-section of community residents
- Plan and implement projects across mixed ownership and jurisdictions
- Leverage resources
- Build a sense of shared community

Don't be shy. Groups that you approach can always decline but they might just say "yes!"

(Possibilities from page 1)

about growing a particular SFP.

In October 1998 a comprehensive conference on forest farming was held in Minnesota. The Proceedings of the *North American Conference on Enterprise Development Through Agroforestry: Farming the Forest for Specialty Products* is available and would provide information on most aspects of farming the forest. For a copy contact Erik Streed at 612-624-4299.

There are several *Agroforestry Notes* currently available from NAC dealing with special forest products. These include: *Farming Exotic Mushrooms in the Forest*, *American Ginseng Production in Woodlots*, *Economics and Marketing of Ginseng*, *Forest Production of Goldenseal*, and *Forest Farming: an Agroforestry Practice*.

A new college-level 400-page textbook is available. *Agroforestry: An Integrated Science and Practice* covers all of the main agroforestry practices, including forest farming. It also discusses economics, policy, social dimensions, the future of agroforestry, and more. See page 7 for more information about the text and how to order.

The Appropriate Technology Transfer for Rural Areas (ATTRA) group provides technical assistance to farmers, extension agents, market gardeners, agricultural researchers, and other agricultural professionals. Their website is: www.attra.org

The Association For Temperate Agroforestry (AFTA) is a private, nonprofit organization. Their goal is to advance the knowledge and application of agroforestry as an integrated land use system to simultaneously meet economic, social, and environmental needs. Their website is: web.missouri.edu/~afta/afta_home.

NAC's website: www.unl.edu/nac has links to these, and other, sources of information about special forest products as well as all of the other agroforestry practices.



(Markets from page 1)

for landowners hosting the public.

- Ease of promotion through internet, radio, weekly newspapers, and local access TV.


Since major wholesale brokers buy from similar sources, the florist shop, small restaurant, health food store, nursery, and craft shop all have similar products for sale. To offer something different they must find a source of custom products. This is where opportunities for direct marketing of SFP comes to the NIPF landowner.

Here are some ideas to find markets:

- Visit the phone book. In the yellow pages index start with the A's and go to the Z's. Develop a list of industries that might need something grown on forested lands. Be creative.
- Try the internet. It can give you entry into many sources of information about local and regional communities.

- Look for resource literature and available classes.
- Visit places that might use a particular product - supermarkets, craft stores, farmers markets, craft festivals, apothecaries, health food stores, florist shops, and fairs. Visit with the owner or sales staff.
- Determine if what you have, or plan to make available, matches the markets' needs.

Other places to keep in mind are: county or state fairs, festivals, garden shows, and trade events, public campgrounds and RV Parks, and freeway rest area.

Finally, everyone seems to like the pick-your-own options that are available now days. 

Adapted from *Developing special Forest Products Markets for Non-Industrial Private Forest Landowners*. by Jim Freed. In: *Proceedings of the North American Conference on enterprise Development Through Agroforestry*.



Raking pine needles mimics fire and does not bother plant diversity or population.



Remember to think about finding markets for products. Here pine needles are sold to a local retail market.

Terry Johnson Agroforestry Award

Nominations are now being accepted for the Terry Johnson Agroforestry Award. This award is granted to a professional, landowner, or individual who has provided sustained quality, innovative applications, renowned research, outstanding technology transfer, exemplary education, or other notable actions in the field of agroforestry.

For more information contact Doug Williams, USDANRCS National Forester at: doug.williams@usda.gov or call him at 202-720-1858.

Nominations are due September 15, 2000.

SARE-NAC Agroforestry Producer Grants For Fiscal Year 2000

For the second year in a row NAC partnered with the USDA Sustainable Agriculture Research and Education (SARE) program to fund agroforestry grants in the SARE Producer Grant Program.

Proposals could either be initiated and managed by a producer or could be coordinated by a technical professional, if carried out on a farm with significant landowner involvement. This year's funds totaling \$89,900 were provided for the following projects:

North Central Region

- **Michigan**, Building a Thermal Blast Peeler to Prepare Chestnut for On-Farm, Value Added Processing
- **Minnesota**, Evaluation of Christmas Tree Varieties for Northern Minnesota
- **Missouri**, Growing Medicinal Mushrooms on Hardwood Stumps and Tops
- **Missouri**, Strategically Thinning a Pecan Orchard and Use of the By-Product for Sustainable Management
- **Ohio**, Best Cultivation Practices for At-Risk Medicinal Herbs
- **Ohio**, Increasing Production in Native Stands of Paw Paws
- **South Dakota**, Kiyaksa Timber Salvage and Restoration Project

Northeast Region

- **Maine**, Improving Financial Returns in an Orchard's Life Through Alley Cropping
- **Massachusetts**, Multi-Purpose Windbreaks for Protection of Vegetable Crops and Production of Fruit and/or Nut Crops
- **New York**, Using Straight-Growing Black Locust in On-Farm Agroforestry Production
- **West Virginia**, American Chestnut Field Trials

Southern Region

- **Georgia**, Cover Crops for Christmas Trees and Other Orchard Crops
- **Kentucky**, Marketing Timber After Adding Value Through the Use of One Person Sawmills and Solar Kilns

The SARE-NAC partnership will again make funds available in FY2001 for agroforestry grants to farmers, ranchers, and tribes. Contact SARE offices for more information: North Central: 402-472-0265; Northeast 802-656-0471; Southern: 770-412-4787; and Western: 801-797-2257. www.sare.org.

1890 Faculty Training Workshop

Participants from 13 of the 17 1890 Universities attended a three-day workshop hosted by Alabama A&M University. *Agroforestry: Blending Agriculture and Forestry* was held in June, 2000.

The objectives of the workshop were to increase agroforestry awareness among the 1890 Universities and to encourage faculty to incorporate agroforestry into their courses and extension efforts. Participants were provided a technical workbook with detailed information on the six agroforestry practice areas and a CD ROM with corresponding Power Point presentations. In addition, each was provided a one-hour agroforestry video and a recently published college-level textbook.

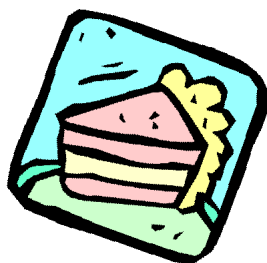
We're Updating Our Database Please Read

A purge is necessary to keep the National Agroforestry Center's database current and accurate. Soon a postcard will be sent to every address on our mailing list. **YOU MUST FILL OUT THE CARD TO REMAIN ON OUR MAILING LIST FOR INSIDE AGROFORESTRY AND AGROFORESTRY NOTES.**

Make any address or name corrections and mail the card to the Center or fax both sides to 402-437-5712. If you are receiving multiple copies, return every postcard, letting us know which addresses to delete and which to keep. We hope that you enjoy *Inside Agroforestry* and thank you in advance for helping NAC conserve paper, postage, and time.

Direct questions concerning the mailing list or this purge to Nancy Hammond. You can e-mail her at: nhammond@fs.fed.us, or fax her at: 402-437-5712.

Wild Plum Upside-Down Cake



Wild plums were planted extensively in windbreaks throughout the Great Plains and Midwest. They produce a small fruit from one to one and one-half inches in diameter that ripens in late summer.

Sauce

3 cups pitted plums, cut into pieces	1 tablespoon margarine or butter
1/2 cup water	1 teaspoon vanilla
2 cups granulated sugar	dash of nutmeg

Put plums and water into a heavy pot. Cover and cook over medium-low heat until soft - about five minutes - check and stir often to prevent scorching. Remove lid, and stir in remaining ingredients. Lower heat so that the mixture boils gently, then cook uncovered until well blended - usually two to three minutes. Remove from heat and allow plums to cool while you make the cake batter.

Cake

1/2 cup milk	1/4 teaspoon salt
1 Tablespoon margarine or butter	1 cup all-purpose flour
2 eggs	1 teaspoon baking powder
1 cup granulated sugar	1 teaspoon vanilla extract

Grease a 7 x 11 x 2 - inch cake pan and set aside. Put milk and margarine into a small saucepan and heat to scalding (bubbles will appear around the edge). Do not allow the milk to boil. Remove from heat and set aside.

Beat eggs until foamy, then gradually add sugar and continue beating until mixture is light colored and very thick - at least four minutes at high speed. Sift the flour, baking powder, and salt together. Then gently blend together the egg and flour mixtures.. Add the hot milk mixture and vanilla. Gently stir until mixed.

Pour the cooked plum mixture into pan, then pour the cake batter over it. Bake at 350 degrees for about 35 minutes or until the cake springs back when lightly touched in the center.

Remove pan from the oven and allow it to cool at least 15 minutes on a wire rack. The cake may be cut and served directly from the pan or it may be turned out and then cut. To turn the cake out, run a knife along the edges while it is still warm, then turn it over onto the serving dish. Allow the pan to remain in place over the cake for several minutes. Makes 9 to 12 servings.


Recipe from *Wild Seasons: Gathering and Cooking Wild Plants of the Great Plains* by Kay Young, illustrated by Mark E. Marcuson.

New Agroforestry Textbook Available

Agroforestry: An Integrated Science and Practice

This 400-page college-level text covers five of the main agroforestry practices: windbreaks, silvopasture, alley cropping, riparian forest buffers, and forest farming. It also addresses issues surrounding the development of agroforestry as an integrated land use management strategy, an ecological foundation for temperate agroforestry, economics and policy of agroforestry, social dimensions of agroforestry, and the future of agroforestry in the United States.

Published by the American Society of Agronomy, Inc., 677 South Segoe Road, Madison, Wisconsin 53711. Copyright 2000. ISBN: 0-89118-142-3. Price: \$50.00.

For additional information and resources on agroforestry visit the NAC's web site at: www.unl.edu/nac. If you do not have access to the web, staff can be reached at 402-437-5178. The Center has additional material to aid your educational efforts. 

Upcoming Events

August 29-31, 2000

Carbon: Exploring the Benefits to Farmers and Society. Des Moines, IA.
Contact: www.cvr.cd.org/carbon.

September 8-10, 2000

American Ginseng Production in the 21st Century. Leeds, NY. Contact: Bob Beyfuss, 518-622-9820;
www.cce.cornell.edu/greene.

October 10-13, 2000

Third Biennial Conference: Short Rotation Woody Crops Operations Group. Syracuse, NY. Contact: 315-470-6891, ce@esf.edu,
www.esf.edu/willow.

From the Editor

We hope you enjoy *Inside Agroforestry*. To help us keep our database current, we request that if you have an address change or are receiving extra copies of *IA*, to please **mail** or **fax** us a copy of the incorrect address or addresses and the correct one, making note of which is correct. Thank you for your cooperation in helping the Center conserve paper and postage, while still delivering the latest in agroforestry information.

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Mission

The National Agroforestry Center (NAC) is a partnership of the USDA Forest Service, Research & Development (Rocky Mountain Research Station) and State & Private Forestry and the USDA Natural Resources Conservation Service. The Center's purpose is to accelerate the development and application of agroforestry technologies to attain more economically, environmentally, and socially sustainable land-use systems. To accomplish its mission, the Center interacts with a national network of partners and cooperators to conduct research, develop technologies and tools, establish demonstrations, and provide useful information to natural resource professionals.

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