

Non-Timber Forest Products



Agroforestry: Forest Farming

by Deborah Hill

Of all the techniques of agroforestry, forest farming is probably the one most useful to landowners in Kentucky. Most have some forestland, and many of those owners don't really "do" anything with that land, keeping it for wildlife habitat, recreation, or a possible timber sale if there is a sudden need for cash.

Most of our forestlands were historically poorly managed. Forests were high-graded, meaning that loggers took the biggest and best quality trees out and left the rest behind. Anyone who has worked with agronomic crops or livestock can envision what the result was from that activity. But forests can be improved, just like a garden. It is a long-term project, but with some professional help from a consultant forester or from the Kentucky Division of Forestry, forest landowners can implement something called timber stand improvement (TSI). Forest farming can be a part of that decision, if the landowner considers the options before starting the TSI operation. It is quite likely that in a TSI operation, the owner would want to remove some small diameter trees of less economically valuable species.

There are a variety of non-timber forest products (NTFPs) or "crops" that a forested area can produce. These may include, but are not limited to, bee products (honey, bee pollen, beeswax, propolis, royal jelly), crafts materials (limited only by the imagination), native fruits and nuts (persimmons, pawpaws, walnuts, hazelnuts, berries), fenceposts, firewood, maple syrup (from any species of maple tree), medicinal plants (ginseng, goldenseal), and mushrooms, both native and exotic.

As part of its efforts to help producers with forest farming, the University of Kentucky Department of Forestry has developed a program for the production of shiitake

(pronounced she-tak-ee) mushrooms. There are eight publications included in a production manual and a 15-minute video on "Producing and Marketing Shiitake Mushrooms on Natural Logs," all of which are available by contacting the UK Forestry Extension office at forestry.extension@uky.edu.

Shiitake mushrooms are native to Japan and have been produced there for about 100 years. These same mushrooms have been produced in the United States for about 30 years now, and the market for them has steadily increased. Shiitake are flavorful mushrooms, tasting a bit like garlic. They are easy to produce and have a good

shelf life (about two weeks under refrigeration) for market. They will grow on virtually any species of hardwood that is not rot-resistant (this fungus is a wood-consuming one). The "softer" hardwoods (e.g., red maple and maybe sweetgum) will produce mushrooms more rapidly than the "harder" hardwoods (e.g., oaks, hickories, sugar maple) and also will "exhaust" more rapidly.

Once inoculated with the active ingredient, called "spawn," the logs take six to 18 months to incubate sufficiently to produce mushrooms. However, that initial inoculation will allow those logs to continue producing for three to five years, depending on whether they are fruiting at will or are under a controlled production program.

The optimal time to start a shiitake production program is in late winter/early spring—usually February and March—when the sap of the trees is rising for eventual bud break and when it contains a high level of carbohydrate for the fungus to feed on.

Spawn can be obtained (along with any other specialized equipment) from several suppliers and is available in sawdust or dowel form. Suppliers can advise the prospective producer on the quantity of spawn and other materials needed for the number of logs the producer wants to inoculate. Management is primarily making sure that the logs are not losing too much moisture and that they are kept under shade (and off



*Shiitake mushrooms on logs.
Photos courtesy: Deborah B. Hill*

the ground) while incubating.

Although shiitake are much more mainstream in the marketplace now than they were 10 years ago, it is still necessary for new producers to locate and develop their own markets. Farmers' markets or locally owned grocery stores and restaurants are good places to start. The Kentucky Shiitake Growers Association, like other growers' associations, provides an opportunity for growers to share their successes and to learn from their failures.

Although this "crop" is still in the beginning stages, producing this tasty gourmet mushroom could grow into a sizable cottage industry in Kentucky, mainly as a source of supplemental income for its producers but possibly as a full-scale business.

Author:

Deborah B. Hill, Ph.D.

Forestry Extension Professor and forestry extension specialist at the University of Kentucky Department of Forestry, she is responsible primarily for programs in non-timber forest products. She also works with 4-H and youth, and in the areas of urban forestry, agroforestry, and permaculture. She has also developed landowner programs in Christmas tree and shiitake mushroom productions.

Cooperative Extension Service, Department of Forestry, University of Kentucky, 210 Thomas Poe Cooper Bldg., Lexington, KY 40546-0073, E-mail: dbhill@uky.edu; Phone: 859.257.7610; Fax: 859.323.1031

KWOA

Kentucky Woodland Owners Association

The board of directors for the Kentucky Woodland Owners Association (KWOA) was recognized by the Kentucky House of Representatives during its February 15 legislative session for its "outstanding contributions" to the organization's mission. KWOA, an organization founded in 1994, assists Kentucky's 423,000 private woodlands owners to improve and maintain the health of their forests. Representative Rick Nelson led the honors with special recognition of KWOA's founder, Don Girton.

The citations recognized KWOA's partnership with the University of Kentucky, the Kentucky Division of Forestry, the Kentucky Forest Industries Association and Kentucky Farm Bureau to provide field training, monitor legislation and provide information regarding both opportunities for and threats to private woodlands.

For more information, see the KWOA website at www.kentuckywoodlandownersassociation.com



Middle back: Speaker of the House Jody Richards.

From left to right: Dr. Jim Corum, Doug McLaren, Joe Ball, Bige Hensley, Fred Kirchhoff, Robert Tindall, Bob Bauer, Karen Marshall, Dr. Greg Kuhns, and Betty Williamson

Photo courtesy: Ky. Legislative Research Commission