

# Agroforestry Agroforestry and Non-Timber Forest Products

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**Agroforestry** is the practice of integrating long-term tree crops with annual agronomic crops and/or livestock. This type of integrated agriculture has been successfully practiced for thousands of years in many parts of the world, especially in the tropics. Temperate regions have been a bit slower to adopt agroforestry practices, but in the past decade or so, there has been increasing interest in using agroforestry techniques in temperate countries around the world. Use of a long-term tree crop with an annual agricultural crop and/or livestock tends to make the entire farm more sustainable, both from increasing crop diversity, and from protecting the soil and water.

Temperate agroforestry involves five commonly accepted practices: *alley cropping*, *riparian buffer strips*, *silvopasture*, *windbreaks*, and *forest farming*. Although the first four practices

may introduce trees into open habitats that are currently treeless, forest farming starts with a forest or forested area and manages it in such a way as to produce either short-term (relative to timber production) or annual non-timber forest products.

Most woodland owners or farmers who have woods on their property are not enthusiastic about planting trees in their open areas, or implementing new techniques that may require time and money, without also quickly showing a return on their investment. Although there are guidelines regarding how each of the techniques is to be designed, each agroforestry practice can and should be customized to meet the owners' personal objectives and to work effectively on their land. Each of the agroforestry techniques is designed primarily to increase diversity and sustainability on farms and forest lands. In addition, they are designed to provide some form of marketable commodity as well as less tangible benefits such as soil erosion control, improved water quality or shade for livestock. Since introducing trees into the system is a basic activity involved in all of these practices except forest farming, it takes months or years for the systems to develop fully. Forest farming, however, is likely to yield some marketable products within a year or two.

The five agroforestry techniques or practices will be discussed in greater detail in the other sections of this series. There will also be a series of more detailed publications on specific options for forest farming. The following, however, are brief descriptions of all the agroforestry options.

**Alley cropping:** Planting single or double rows of a tree crop (timber, fruit, Christmas trees, etc.), leaving an "alley" of sufficient space between the rows to be able to use your harvesting equipment for whatever crop you plan to grow between the trees. The crop grown in the alleys can be harvested annually while the trees are growing.

**Riparian buffer strips:** Establishing a living barrier between sizable moving waters (streams and rivers) and agricultural or livestock fields, filtering runoff from the fields into the water and protecting the fields from flooding, using native trees, shrubs and grasses planted in bands with trees beside the water and grasses beside the fields.

**Silvopasture:** Planting rows or clusters of a tree crop into areas where livestock are pastured. This practice provides two annual crops (forage and livestock) as well as the eventual long term tree crop. Livestock health and growth benefit from the shade and wind-break effect of the trees.

**Windbreaks:** Planting multiple rows of trees and shrubs, both coniferous and broadleaved, to protect crops or livestock from damaging effects of prevailing winds.

**Forest farming:** Managing existing forests to provide the appropriate spacing and shade for various non-timber forest products (bee products, mushrooms, medicinal plants, forest floor flowering plants, native fruits and nuts, maple syrup, etc.).

Although forest farming is entirely about developing marketable products from what may already be growing in your forest, a landowner could also include trees (fruits or nuts) or shrubs in other practices (especially

riparian buffer strips and windbreaks) that can produce marketable products in the short term. Woody florals, shrubs that are grown for their unusual shape or color for the florists' trade, could be included in the plantings designed for protective purposes. Curly or corkscrew willow and red osier dogwood or other shrubs with red or yellow stems can be harvested on an annual or every-other-year basis and are marketed by the individual stem. Such plant material choices can improve the economic value of any of these systems.

Agroforestry practices are advantageous to the landowner both economically and ecologically and should be seriously considered by any landowner who is interested in managing his or her land in a more sustainable way.

#### **Agroforestry in Kentucky**

*Alley Cropping* (FOR-111)

*Riparian Buffer Strips* (FOR-112)

*Silvopasture* (FOR-113)

*Windbreaks* (FOR-114)

*Forest Farming* (FOR-115)

<http://dept.ca.uky.edu/agc/pub-dept.asp?dept=Forestry>