

AGROFORESTRY: Alley Cropping

What is Alley Cropping?

Alley cropping is the agroforestry practice of planting rows of trees with alleys between them that are wide enough to produce other crops.

Why practice Alley Cropping?

The trees can provide timber, nuts and fruit crops while the alleys allow for an annual income from the crops planted in them.



Lettuce intercropped with peaches until mid-June followed immediately by a pumpkin intercrop until October (Ontario, Canada). www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2005/16hrt05.pdf

Production

The needs of the trees and crops planted determine the plan for the alley-cropping system. The following factors should be considered when deciding on what to plant:

- **Light Competition**—The amount of light available for crops between trees should be managed through tree spacing, row direction in relation to movement of the sun, tree branching, and tree thinning and pruning.
- **Root Competition**—The trees and crops both need water and nutrients that they take up through their roots. Tree spacing will have an affect on root competition for those resources.
- **Chemicals from trees**—Some trees naturally produce chemicals in their leaves and roots that may cause problems with growth of crops in the alleys.

Advantages of Alley Cropping

- Increased farm products
- Reduced soil loss
- Improved water quality
- Protected crops
- Enhanced wildlife
- Improved farm appearance
- Increased profits

Advantages of single- and multiple- row tree plantings

Single Row	Multiple Row
Less ground is used	Less soil loss
Better for nut production	Better growth of trees for timber
Easier to manage	Improved wildlife value
Some new products added from trees	Increased number of tree products to sell

Selecting Crops for the Tree Alleys

The type of crops and crop management used for alley cropping depends, in part, on the width of the alleys between the trees.

Narrow alleys with more tree rows permit greater production of trees or shrubs per acre of land, focusing on the value of the tree crop.

Wide alleys reduce the number of trees per acre of land, but permit sun-loving crops to be grown for many years as the trees grow. Wide alleys usually allow the use of larger farm equipment.

Examples of crops used in tree alleys in North Carolina include:

1. Row and forage crops
2. Fruits, berries, and vegetables
3. Biomass crops

Funding sources

There are agencies that may offer programs for landowners to help finance alley cropping or other agroforestry practices.

Possible programs for North Carolina's small farmers include:

- The Natural Resources Conservation Service (NRCS) with programs such as EQIP (Environmental Quality Incentive Program)
- U.S. Fisheries and Wildlife programs
- State level programs from the U.S. Forest Service
- Southern Region Sustainable Agriculture Research and Education (SARE) Program
- The N.C. Department of Agriculture & Consumer Services

For more information, contact your nearest county Cooperative Extension Center, Soil & Water Conservation District, State Forestry Agency, USDA NRCS Office, or a local natural resource consultant.

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