

# Alley Cropping

Conservation Practice Job Sheet FL-311-JS

Natural Resources Conservation Service, Florida

June 2012



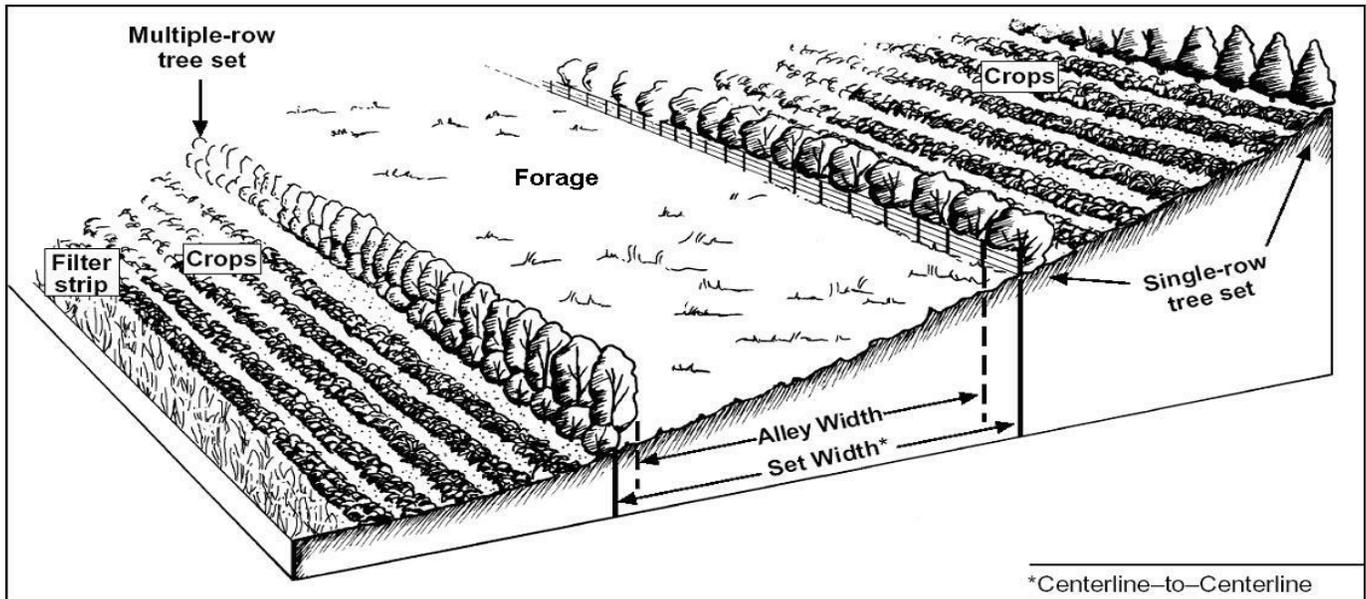
The definition of alley cropping is trees or shrubs planted in sets of single or multiple rows with agronomic, horticultural crops or forages produced in the alleys between the sets of woody plants.

Alley cropping is used to enhance microclimatic conditions to improve crop or forage quality and quantity. Reduce surface water runoff and erosion. Improve soil quality by increasing utilization and cycling of nutrients. Alter subsurface water quantity or water table depths. Enhance wildlife and beneficial insect habitat. Increase crop diversity. Decrease offsite movement of nutrients or chemicals. Increase carbon storage in plant biomass and soils. Develop renewable energy systems. Improve air quality.

Alley cropping is normally established along with conservation crop rotation, nutrient management, integrated pest management, residue management, and other practices for a conservation management unit. Forage-related practices need to be applied when forage crops are used. When alley cropping is used for soil erosion control, trees or shrubs are planted on the contour in conjunction with herbaceous vegetation. When wildlife habitat enhancement is a purpose, native or adapted tree or shrub species beneficial to the target wildlife species become part of the site-specific specifications. When tree/shrub sets are spaced at relatively close intervals (40 feet or less), shade-intolerant crops can be grown for several years until the woody canopy creates significant shading. At that point, several options can be considered: 1) replace shade-intolerant crops with shade-tolerant crops, 2) thin and/or prune the woody vegetation to reduce shading so long as functions or future products are not impaired, or 3) harvest the sets and reestablish woody plants (requires woody species that produce products quickly). Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See Florida Conservation Practice Standard Alley Cropping, Code 311.

Operation and maintenance consists of the following: 1) Replace dead and dying woody species in newly established sets. 2) Care must be taken to use chemicals or chemical applications that are compatible with both the tree crop and the alley crop. 3) Monitor in-alley crop growth to determine if shading conditions are being met as sets mature. 4) Root pruning may be necessary along the edges of alleys to maintain adequate growth in adjacent agronomic, horticultural, or forage crops. 5) Protect trees and shrubs from damage by livestock or harmful wildlife

# ALLEY CROPPING JOB SHEET



Trees or shrubs are generally planted in single or multiple-row sets or series. The spacing between sets is determined by the primary purpose of the alley cropping and the agronomic, horticultural, or forage crop grown. Woody plants are typically selected for their potential value for wood, nut or fruit crops and/or the benefits they can provide to the crops grown in the alleys. There is many compatible tree or shrub species, depending upon the region of the country, soil type, value, and markets. All traditional agronomic, horticultural, or forage crops can be grown in the alleys between the sets of trees or shrubs. The primary factor for selecting the crops within an alley is their sunlight requirement relative to the canopy density (shade) created by the trees or shrubs in the sets.

**FL- 311 - Site Specific Sheet - 3**

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**ALLEY CROPPING SITE SPECIFIC SHEET**

Client:		County:	Date:
Farm #:	Tract #:	Field #(s):	Contract #:
<b>Purpose/Need (check all that apply)</b>			
<input type="checkbox"/> Improve crop or forage quality and quantity by enhancing microclimatic conditions		<input type="checkbox"/> Increase crop diversity	
<input type="checkbox"/> Reduce surface water runoff and erosion		<input type="checkbox"/> Decrease offsite movement of nutrients or chemicals	
<input type="checkbox"/> Improve soil quality by increasing utilization and recycling of nutrients		<input type="checkbox"/> Increase carbon storage in plant biomass and soils.	
<input type="checkbox"/> Alter subsurface water quantity or water table depths		<input type="checkbox"/> Develop renewable energy systems	
<input type="checkbox"/> Enhance wildlife and beneficial insect habitat		<input type="checkbox"/> Improve air quality	
		<input type="checkbox"/> Other:	
<b>Layout</b>			
		Planned	Applied
Alley width <sup>1</sup> ( ft ):			
Spacing between tree/shrub sets <sup>2</sup> ( ft ):			
Supplemental herbaceous cover width – erosive sites ( ft ):			
Tree/shrub set orientations: Contour ; North/South ; East/West ; Other (specify)			

<sup>1</sup> Distance available for herbaceous crops; set equal to multiple agricultural equipment widths. <sup>2</sup> Distance from center of one set to center of the next set

<b>Woody Plant Materials Information</b>										
			Planned				Applied			
Planting date:										
Species/cultivar by set and row number:			Kind of stock <sup>3</sup>		Distance between plants within row ( ft ):		Total number of plants for row:		Distance ( ft ) from this row to next row <sup>4</sup>	
	Planned	Applied	Planned	Applied	Planned	Applied	Planned	Applied	Planned	Applied
<b>Set # 1: Row#</b>										
1.										
2.										
3.										
4.									---	---
<b>Set # 2: Row#</b>										
1.										
2.										
3.										
4.									---	---

<sup>3</sup> BAreroot, Container, Cutting; include size, caliper, height, and age as applicable. <sup>4</sup> Adjusted for width of maintenance equipment.

