

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

SILVOPASTURE ESTABLISHMENT

(Ac.)

CODE 381

DEFINITION

An agroforestry application establishing a combination of trees or shrubs and compatible forages on the same acreage.

PURPOSE

- Provide forage for livestock and the production of wood products
- Increase carbon sequestration
- Improve water quality
- Reduce erosion
- Enhance wildlife habitat
- Reduce fire hazard
- Provide shade for livestock

CONDITIONS WHERE PRACTICE APPLIES

Situations where silvopasture establishment applies includes: 1) pasture where trees or shrubs can be added; 2) forest where forages can be added; 3) land on which neither the desired trees nor forages exist in sufficient quantity to meet the land user's objectives.

This practice may be applied on any area that is suitable for the desired plants.

CRITERIA

General Criteria Applicable to All Purposes

Tree species must be adapted to the site and compatible with planned livestock management.

Forage species must be adapted to the site and compatible with the planned management of the site.

Where trees will be added to existing pasture, site preparation should be based on existing

vegetation and soil conditions. (See Conservation Practice 490, Forest Site Preparation and Kansas Forestry Technical Note KS-9.)

Trees will be planted at the recommended tree spacings. (See Construction Specifications 612, Tree/Shrub Establishment, and 380, Windbreak/Shelterbelt Establishment.)

For existing forests, remove a sufficient number of trees (Conservation Practice 666, Forest Stand Improvement) and/or prune (Conservation Practice 660, Tree/Shrub Pruning) existing trees to allow adequate light penetration for forage establishment. Establishment of forage species will be in accordance with Conservation Practices 512, Pasture and Hayland Planting, and/or 550, Range Planting.

When using pesticides, follow label recommendations and Conservation Practice 595, Pest Management.

Only viable, high quality, and adapted planting stock or seed will be used.

The planting shall be done at a time and manner to ensure survival and growth of selected species.

Tree/shrub spacing needs to exceed width of equipment to be used in management.

Additional Criteria to Provide Forage for Livestock and the Production of Forest Products

The forage species must be identified as suitable for the targeted livestock.

Livestock grazing shall be deferred until the average height of the tree's terminal bud exceeds the browsing height of the livestock, of sufficient size to resist breakage, or until suitable use exclusion measures for the protection of the woody plants are established. A forage crop (hay, silage, etc.) may be harvested during this period.

Plant trees at an appropriate density to allow acceptable forage production and wood products.

The tree or shrub species must have potential to produce forest products.

Additional Criteria to Increase Carbon Sequestration

For optimal carbon sequestration, select plants that have higher rates of sequestration and are adapted to the site to assure strong health and vigor.

Plant and manage the appropriate stocking rate for the site to maximize biomass production.

Additional Criteria to Improve Water Quality

Favor trees, shrubs, and forages that have growth characteristics conducive to high nutrient uptake.

Additional Criteria to Reduce Erosion

Place linear woody plantings on or near the contour when water erosion is a concern.

Additional Criteria to Enhance Wildlife Habitat

Establish forage species and understory shrubs that will provide forage, browse, seed, cover, or nesting habitat for the wildlife species of concern. (See Conservation Practice 645, Upland Wildlife Habitat Management.)

CONSIDERATIONS

Failure to maintain adequate forage for livestock may result in excessive tree damage and/or loss.

Location and distribution of facilities for water, minerals or supplemental feed should be such that livestock are not encouraged to over-utilize areas of silvopasture.

Rows should be oriented in an east-west orientation where feasible and practical to allow maximum sunlight onto grass strips.

If grazing does not maintain reduced fuel loads, prescribed burning should be considered providing the woody plants are fire adapted and will not be damaged.

Where water erosion and/or runoff from melting snow are a hazard, it should be controlled by supporting practices.

Wildlife should be considered when selecting tree or shrub species. Species diversity, including use of native species, should be considered.

Consideration should be given to adverse offsite effects.

Plants established in cropping systems should have root systems that have minimal impact on crop growth.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using appropriate specifications, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

The following actions shall be carried out to ensure that this practice functions as intended throughout its expected life. These actions include normal, repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

- Forage and forest management will follow Conservation Practices 528, Prescribed Grazing, and 666, Forest Stand Improvement.
- Replanting will be required when plant survival is inadequate to meet practice and client objectives.
- Competing vegetation will be controlled until the trees are established.
- Periodic applications of nutrients may be needed for establishment and to maintain plant vigor. (See Conservation Practice 590, Nutrient Management.)
- Inspect trees and shrubs periodically and protect from adverse impacts including insects, diseases, or competing vegetation. The trees or shrubs will also be protected from wildfire and damage from livestock and wildlife.

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