

Tree/Shrub Establishment

Kentucky Conservation Practice Job Sheet

Code 612

Information on this job sheet is considered to be part of the contract and/or conservation plan. Note: If tree and/or shrubs are being established under a program requirement, the participant must follow management outlined in the conservation plan and program specific Management and Maintenance jobsheets that are included in the conservation plan.

Purpose

To establish woody plants for forest products such as timber, pulpwood, energy biomass, wildlife habitat, long-term erosion control and improvement of water quality.

Tree planting may also be performed to treat waste, store carbon in biomass, for energy conservation or to improve or restore natural diversity and enhance aesthetics.

Conditions Where Practice Applies

Tree/shrub establishment can be applied on any appropriately prepared site where woody plants can be grown.

Plant Materials

Plant materials and seed should be obtained from sources of equal or colder USDA hardiness zones and from areas as close to the project area as feasible.

Seedlings should exhibit a healthy root base that is balanced to top growth. Root collar diameters should exceed 3/8 inches and roots of at least 5 inches in length. Discard any diseased or damaged seedlings.

Plants may be balled and burlapped, containerized, plugs, seedlings, seeds and cuttings.

Seedling Care

Seedlings should be protected from sun and wind during shipping and the planting operation. Seedling roots should be kept moist during transportation, storage, and during the planting operation.

Seedlings should not be lifted within one week of planting and shall not be lifted until the seedlings have become dormant (at least November 5th)

Seedlings should be planted immediately after delivery. If planting will be delayed for more than 5 days, place them in cold storage at 35 to 45 degrees F. If cold storage is not available, seedlings should be heeled-in. Spread roots against the back of a trench that is slightly deeper than the root system. Cover roots with soil and tamp the soil firmly to eliminate air space.



Heel-in seedlings to keep roots moist and store them temporarily until they can be planted.

Site Preparation

Site preparation should be sufficient for establishment and growth of selected species. Site preparation is needed if competition from grass, weeds, and/or woody materials will interfere with plant establishment and growth. See conservation Practice Tree/Shrub Site Preparation, code 490 and associated job sheets.

Direct Seeding

Acorns may be planted from November through April when the ground is not frozen. To avoid rodent depredation of planted acorns, direct seeding will only be acceptable when the site is 300 feet from existing forestland. One or more of the following seeding methods should be utilized.

- 1) **Broadcast:** On a well prepared seedbed, broadcast the seed evenly over the planting area and cover seeds with mineral soil (1/2 to 1 inch).

- 2) **Spot:** Plant 1 seed per spot, 2 to 3 inches deep. The spots should be 3 to 4 feet in the row to compensate for low germination rates. Cover with mineral soil.
- 3) **Machine:** Plant seeds 2 to 3 inches deep in mineral soil every 3 to 4 feet in the row to compensate for low germination rates.

Species Selection

Trees may be planted for a wide variety of purposes. The purpose should reflect the species used. Refer to Section IV/Tools/Tree and Shrub Establishment Tools / KY Tree and Shrub Establishment Guide, for selection of species that are best suited to establishment in KY.

Always consider the soil type and depth. Select species that are tolerant of flooding or wet areas if appropriate.

Always utilize native species when feasible and appropriate.

If using tree planting to provide wildlife habitat, select species that produce food (nuts, berries or other fruits) or provide cover for targeted wildlife.

however not required.

Operation and Maintenance

The planting area must be protected from grazing as well as, fire, insects, diseases, competing vegetation and wildlife. It should be inspected regularly in the first few months and at least annually including after storm events.

Replace any dead and dying stock in newly established plantings. Replanting failed spots may be required when survival is inadequate according to NRCS standards. Pruning, thinning, and/or removal of dead or diseased plants should be performed and timed as to not interfere with the lifecycle of the plants or the intended purpose of the planting.

Noxious weeds should be monitored and controlled.

Where practical, management activities should be performed outside the primary nesting season (May 15th - August 1st). An exception may be for mowing or cultivation to control vegetative competition.

Supplemental water as well as periodic applications of nutrients may be needed to maintain plant health and vigor.

Trees and/or shrubs can eventually become crowded slowing their growth, survival and composition of understory species. As the plants mature, periodic harvesting of some of the overstory trees and shrubs may become an important activity for maintaining plant health and productivity.

Refer to the additional requirements section of this job sheet for program specific requirements or additional technical recommendations.

SPACING CALCULATIONS			
Spacing	Number of Seedlings Per Acre	Spacing	Number of Seedlings Per Acre
6' X 6'	1210 *	10' X 10'	436
6' X 8'	908	12' X 12'	302
8' X 8'	680 *	15' X 15'	194
6' X 12'	605	16' X 16'	170
8' X 10'	544	20' X 20'	109
Formula: 43560 divided by (Row spacing X Seedling Spacing) = Plants / Acre			

*These spacings are recommended for wildlife plantings

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SPECIFICATIONS

Participant Name	CRP Practice (If applicable)	Other Program (If applicable)
Purpose (check all that apply) <input type="checkbox"/> timber/pulpwood <input type="checkbox"/> enhance aesthetics <input type="checkbox"/> wildlife habitat <input type="checkbox"/> water quality <input type="checkbox"/> store carbon in biomass <input type="checkbox"/> treat waste <input type="checkbox"/> improve or restore natural diversity <input type="checkbox"/> long-term erosion control <input type="checkbox"/> energy conservation <input type="checkbox"/> energy biomass		
Is Tree/Shrub Site Preparation Needed? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, refer to 490 Tree/Shrub Site Preparation	NOTE: A precondition for tree/shrub establishment is appropriately prepared sites. Site preparation is needed if competition from grass, weeds, and/or woody materials will interfere with establishment and growth. Refer to Tree/Shrub Site Preparation, Code 490.	

Use additional sheets as necessary.

Field	Acres	Species ¹	Kind of Stock ²	Method ³	Planting Date	Plants/Seeds per Acre	Average Spacing	Protection Method ⁴	Total Plants

¹ **Species:** Select species with respect to purpose. Refer to Section IV/Tools/Tree and Shrub Establishment Tools / KY Tree and Shrub Establishment Guide.

² **Kind of Stock:** Bareroot, Cutting (include size, caliper and age as applicable) Direct Seed, Balled and Burlapped, Containerized, Plugs

³ **Method:** Mattock, Planting Dibble, Hoe-dad, Planting Bar, Tile Spade, Post Hole Digger, Tractor/Auger, or Tree Planting Machine.

⁴ **Protection Method:** Tree Shelters, Repellants, Tree Mats, Other (Describe in the Additional notes section of this document)

Additional Specifications and Notes:

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If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

Operation and Maintenance

Maintain erosion control measures as necessary. Control locally invasive and noxious plants as necessary. Access by vehicles or equipment during or after site preparation shall be controlled to minimize erosion, compaction and other site impacts. Practice areas should be checked periodically, but especially in the first three to six months after planting to see if additional control of competition is needed to insure the survival of desired vegetation. Repair erosion control measures as necessary to ensure proper function.

Additional Operation and Maintenance Requirements:

Certifications			
Job Sheet	Prepared by:	Title:	Date:
	Approved by:	Title:	Date:
Installation	Meets NRCS Standards and Specifications		
	Certification by:	Title:	Date:

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