

# Tree and Shrub Establishment (JS-IA612)

## Iowa Job Sheet



Natural Resources Conservation Service  
Des Moines, Iowa

September 2006

Name:	Farm #:
Field(s):	Tract #:
Soil Map Unit(s):	County:
Designed by:	Approved by: Signature:
Date:	Date:

### Purpose

This is a general tree planting job sheet that will assist you before you visit with a professional Forester. For specifics about your tree planting plan contact an IADNR or Private Forester. This fact sheet is to assist you establish woody plants by planting seedlings, cuttings, or container/potted plants. (Not for direct seeding or natural regeneration.)

### Specifications

#### Site Preparation

The planting site shall be prepared in a manner that will make planting easier, maximize seedling survivability and provide a good starting point for long-term landowner objectives. Any vegetation that would hinder planting or provide excessive competition to the seedlings should be controlled or removed with band, strip, or spot treatment. Vegetation between planted tree rows may be necessary for erosion control purposes.

Site preparation is planned as follows (check all that apply):

<input type="checkbox"/>	Mechanical means such as plowing, disking or rototilling
<input type="checkbox"/>	Chemical control of vegetation
<input type="checkbox"/>	Hand scalping the area where trees are to be planted
<input type="checkbox"/>	Prescribed burning based on a current approved prescribed burn plan
<input type="checkbox"/>	Other

Existing brush or trees may be maintained if the site is to be inter-planted and the retained trees/shrubs will provide functions consistent with the planned use. For wildlife purposes, consider retaining some trees that will provide densites or mast production while the new planting is becoming established. Remove or kill undesirable trees that will hamper planting or provide excessive shade. Establish adequate protection from fire and livestock prior to planting.

#### Storage and Preparation of Seedlings:

If possible, store seedlings in cold storage (35° to 40° F). Otherwise, place seedlings in a ventilated, cool, shaded place. Seedlings should be kept moist, but not wet. Avoid physical damage to roots during storage. If seedlings need to be stored for more than one week and cold storage is not available, the seedlings should be heeled in. This is done by digging a slightly sloping trench, placing the seedlings in the trench and covering the roots with moist soil. Do not allow the roots to dry out. If possible, place the trench in a shady location, out of direct sunlight.

If needed, root-prune seedlings that have excessively long main or lateral roots (roots longer than the effective depth capacity of planting tools or machines.) No more than one-quarter of the root system should be removed.

**Recommended species:** [www.ia.nrcs.usda.gov/plants.html](http://www.ia.nrcs.usda.gov/plants.html)  
Seedlings can be purchased from the Iowa Department of Natural Resources State Nursery or commercial nurseries.

#### Planting Methods:

Bare-rooted trees or shrubs may be planted with a mattock, dibble or planting bar or mechanical tree planter. Container and balled-and-burlap plants are planted by digging a hole big enough (up to 2 times as wide as the root volume) to hold the root ball or container volume. With all planting methods, the following measures are to be followed:

1. Plant the tree at the same depth it was growing in the nursery. The root collar should be planted a little below the soil surface level so that after the ground settles, the root collar will line up with the soil surface.
2. Plant the tree upright. Make sure the roots are hanging downward in a natural position and not doubled or sharply bent. Remove any packaging material from container plants.

3. Pack the soil firmly around the roots so that the tree is held in place, there is good soil-root contact, and any air pockets are eliminated.
4. Plant only one tree per spot.
5. Do not allow plant roots to dry out while planting.
6. Arrange tree planting rows on the contour on sloping ground to avoid soil erosion within the planting furrow.

### **Root Dips**

The use of beneficial mycorrhizal and absorbent polymer-gel root dips may enhance the seedling survival if planting in low fertility soils, in droughty soil, or when moisture conditions are limiting. Seedling roots should be dipped at the time of planting.

### **Operation and Maintenance: Care after Planting**

#### ***Watering***

Typically, large plantings are not watered. However, specialized or smaller plantings such as windbreaks may be watered to increase survival and growth. If trees are watered, the water should be applied gradually through sprinklers, soaker hoses, drip buckets or other means. Watering should be continued throughout summer anytime conditions are dry. Consider using 2-4 inches of mulch on larger container trees to maintain soil moisture and modify soil temperature. Weed control fabric will also help maintain soil moisture, but should be covered with mulch to modify soil temperatures.

#### ***Weed Control***

Elimination of competing vegetation is normally carried out for one to five years after planting. Weed control is an important factor in tree and shrub seedling survival, especially for hardwood species. Weed control will be accomplished through mulching, cultivation, or herbicide usage. In all cases, the vegetation should be controlled in a band 12 to 18 inches along each side of the tree row or in a 2 to 3 foot diameter circle around each tree. Weed fabric barriers may be used for specialized plantings for extended weed control after all existing vegetation is eliminated.

Mechanical or hand cultivation should be kept at least 6 inches from the seedling and no deeper than 3 inches to avoid damage to the seedling. Additional methods may be needed to control weeds closer to the seedling. Mulching or fabric barriers provide good control, but may be impractical on large plantings. The use of herbicides usually provides good weed control. Mowing generally does not provide adequate control, since the weeds are still competing for nutrients and water; also, potential damage to seedlings from mowing is high. Mowing between rows can be used to help maintain row locations for the use of other weed control

methods.

#### ***Pest Management***

Plant injury or death should be controlled through preventative measures. Domestic animals that might graze on seedlings should be excluded. To reduce damage from wild animals, consider controlling weeds which may hide rodents or rabbits, applying repellants or poisons, hunting or using tree shelters. Monitor new plantings for potential insect and disease problems and take appropriate control measures if significant problems are found.

#### ***Replanting***

Some plants will be lost over time to a variety of causes. The decision to replant some or all of the losses will be based on whether or not the remaining plants will likely meet the desired purpose(s) and any program requirements. After two growing seasons, a final status check of the plantings or regeneration should be conducted. For this planting, an acceptable level of plant survival is 50 percent of the original planting rate, or not less than 300 woody plants per acre.

#### **Operation and Maintenance Summary**

1. Competing vegetation will be controlled until the woody plants are established.
2. State noxious weeds will be controlled.
3. Replanting will be required when survival is inadequate.
4. Supplemental water will be provided as needed and where feasible.
5. Plantings will be inspected periodically and protected from adverse impacts including insects, diseases, competing vegetation, wildfire and damage from livestock or wildlife.
6. Periodic applications of nutrients may be needed to maintain desired plant vigor.



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