NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD AND SPECIFICATION

TREE/SHRUB PRUNING

(Acre)

CODE 660

DEFINITION

Removing all or parts of selected branches, leaders, or roots from trees and shrubs.

PURPOSES

- Improve appearance of trees or shrubs.
- Improve the quality of wood products
- Improve the production of plant products.
- Reduce fire and/or safety hazards.
- Adjust the foliage, branching density, or rooting length for other specific intents.

CONDITIONS WHERE PRACTICE APPLIES

On all land uses where trees and shrubs are present.

CRITERIA

General Criteria Applicable to All Purposes

Maintain pruning equipment in good condition for both safety and correct treatment of the plant.

Disinfect all equipment with denatured alcohol or bleach/water mix after pruning to prevent the spread of disease and decay organisms.

Pruning can be done at most times during the year except when leaves are expanding in the spring and falling in the fall. If oak wilt is in the area, dormant pruning is recommended.

Dead or damaged branches may be cut at anytime. Use proper pruning techniques to remove plant material. For additional guidance, refer to "Branch Pruning" in General Specifications.

Additional Criteria to Improve the Quality of Wood Products

Eliminate multiple leaders, crooked, crossed, or other deformed branches.

Restrict pruning to trees with high market values such as black walnut, pecan, white oak, and Northern red oak.

Restrict pruning to single-stemmed, well-formed dominant/codominant crop trees.

For additional guidance, refer to "Timber or Veneer" in General Specifications.

Additional Criteria to Improve the Appearance of Trees or Shrubs

Christmas tree production

Begin pruning during the third growing season.

Pruning should be done early in the growing season when the new growth has about completed its elongation and has started to harden-off. Continue on an annual basis until the tree is harvested. For additional guidance, refer to "Christmas Trees" in General Specifications.

Confine pruning primarily to current year growth.

Additional Criteria to Adjust Rooting Length for Other Specific Intents

Sever below ground woody roots projecting into adjacent fields that are competing for plant moisture and nutrients with appropriately sized equipment. For additional guidance, refer to "Root Pruning" in General Specifications.

Do not root prune adjacent sides of linear woody plantings. Allow a 3 year interval.

Check for buried cables, pipelines, and other utilities before root pruning operations.

CONSIDERATIONS

The timing of pruning should consider the nesting and breeding requirements of arboreal species.

In urban areas special considerations need to be given for safety hazards.

Pruning efforts will provide greater economic returns on productive sites (site index >60)

All pruning is potentially harmful to the plant.

Root pruning may stimulate root sprouting of severed roots.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan, or other acceptable documentation. Species, site limitations, methods, equipment, season of year, and guides to pruning for the applicable purpose shall be considered.

OPERATION AND MAINTENANCE

Periodically inspect plant conditions as needed for the prescribed purposes. Take additional actions as necessary.

Repeat root-pruning operations every 5 to 8 years.

GENERAL SPECIFICATIONS

Branch Pruning

General

Initial pruning should leave at least half of the tree stem with live branches. Reduce leaf volume/area by no more than 25 percent in any year.

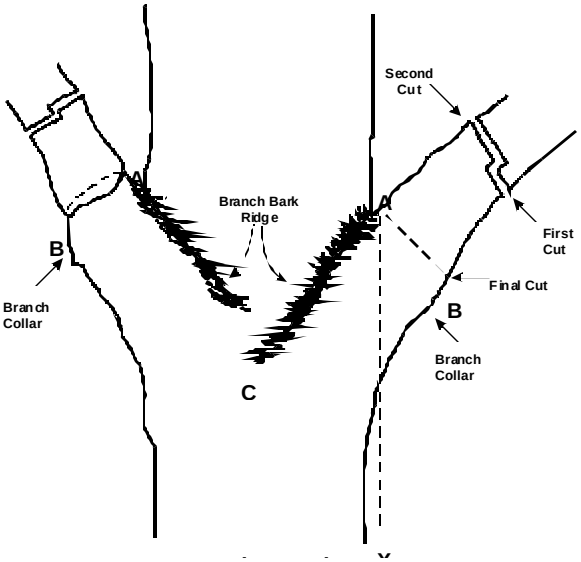


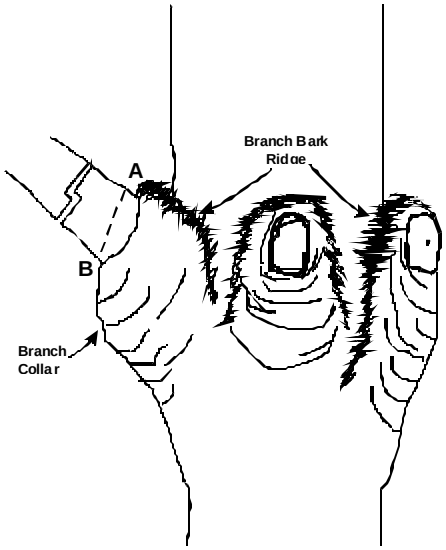
Figure 1. — Hardwood pruning.

If possible, prune branches when they are small, less than 2 inches in diameter.

Prune small branches (< 2 inches in diameter) just above an outside bud or at a fork. Make clean cuts as close to the remaining branch or tree stem as possible. Do not cut into branch collars. Support small branches while cutting.

Prune large branches (see Figures 1 & 2) according to the following steps:

1. Locate the branch bark ridge
2. Find **A** (outside edge of branch bark ridge).
3. Find **B** (swelling where branch meets branch collar. If **B** is difficult to determine drop a line from **A**: the angle **XAC** is equal to the angle **XAB** (see figure 1). Stub the branch to be pruned using a first cut from below and a second cut from above.
4. Make the final cut on line **AB.**
5. Do not cut behind the branch bark ridge.
6. Do not leave stubs.
7. Do not cut into the branch collar.



Conifers

Figure 2. — Conifer pruning.

Christmas Trees

Cut terminal leader back to 10 to 14 inches with a 45-degree angle cut.

Cut the lateral branches of the top whorl from ½ to 2/3 the length of the leader. (see Figure 3)

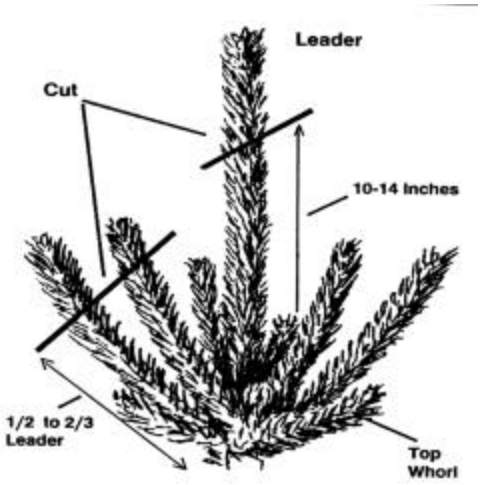


Figure 3. – Christmas tree pruning

General pruning dates for selected species are given below (use early dates for south Missouri and later dates for north Missouri):

Austrian pine	late May – mid June
Scotch pine	mid June – July
Jack pine	mid May – mid June
White pine	mid June – mid July
Firs/Spruces	July – early August

Timber or veneer

Lateral pruning can begin once the plant is 10 to 12 feet tall or 3 to 6 inches in diameter. Continue to prune every 2 to 3 years, until an economical length of stem is clear (generally 9 to 17 feet).

Nut Production

Tip prune to shape young pecan and walnut trees to promote formation of a strong trunk.

Tip prune in early March by clipping off 3-4 inches from all terminal growth. Tip prune again in mid-summer, but do not prune the central leader.

Leave lower lateral branches on the tree until they are an inch in diameter. Remove lower laterals as the tree grows until a clear central stem of 9 feet is established.

Root Pruning

Use a tractor with at least 70 HP or equipment with adequate horsepower to pull a root plow at the desired depth.

Use a standard root plow with a vertical cutting bar capable of reaching a depth of 24 inches.

Use two passes to sever roots. The first pass should be 12 to 15 inches in depth. The second pass should be 20 to 22 inches in depth and be in the same furrow as the first pass.

On sites with stones in the profile or with a tendency to clod, one slow (<2 mph) pass may provide better results.

The plow furrow should be 2 feet into the field from the dripline of the trees but no closer than 15 feet from the trunks of the trees.

Minimize concentrated flow channels from root pruning activities on potentially erodible sites by offsetting the plow furrow every 100 feet or close the pruning trench by driving over the furrow with a tractor tire on a second non-plowing pass.

REFERENCES

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Care for Your Trees: Univ. of Illinois; Circular 1059; 1972.

Christmas Trees – A Management Guide; Univ. of Nebraska; EC 76-1741; 1976.

Lateral Pruning; Walnut Notes; North Central Forest Experiment Station; 1988.

Pruning Forest Trees; UMC Forestry Guide No. 5160; 1989.

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Growing Pecans; KSU Horticultural Report MF-1025; Kansas State University. 1992.

Pruning by Plowing; Missouri Conservationist; February 1990.