

## **Certification Training Magic From the Manual:**

### **Pruning Trees, Shrubs, Evergreens and Perennials in the Nursery and Landscape**

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*The MNLA Certified Professional Study Manual has an extensive chapter reviewing proper pruning methods. Topics include pruning trees; pruning shrubs; pruning narrow leaf evergreens; pruning broadleaf evergreens; pruning perennials; and frequency and timing of pruning.*

*Following are excerpts from that chapter and then a sample of type of questions you might find on the MNLA Certification Exam.*

Pruning is a horticultural practice involving science and art in the removal of branches or portions of a plant to control plant growth, to improve plant health, vigor and structure, and enhance fruit and/or flower development. Young plants are pruned to encourage proper development and natural form.

Older plants are pruned to maintain appearance, size, function, and vigor. It is important to understand the anatomical and physiological terms, as well as the principles of proper pruning in the nursery and in the landscape. If extensive pruning is required to maintain or change size and form, then the proper plant was not planted in the proper location.

#### **Pruning Trees**

Young trees should be pruned to encourage a sound branching structure with branches evenly spaced and with wide crotch angles. It is critical to remove narrow angled v-crotches when the tree is young. These narrow angled v-crotches often occur toward the top of the tree, therefore, their removal is also essential to maintain a central leader. Narrow v-crotches grow weaker as the age and size of the tree increases because the two stems push each other apart as the tree grows.

A wide crotch angle is especially important in fruit trees where a heavy load of fruit may be borne when the trees mature. In addition to providing strong branch crotches in shade trees, developmental pruning should include the establishment of a central leader and the elimination of water sprouts, rubbing branches, broken branches, and epicormic and basal sprouts.

Older trees are pruned to maintain their natural appearance and vigor. Dead, dying, and broken branches should always be removed. As with younger trees, rubbing or crossing branches, water sprouts, suckers, and any other undesirable growth should be removed. Thinning a tree may also be advantageous in cases where root injury proposes a threat to the tree. Pruning to remove diseased or insect infested wood is also required.

Trees that have been wounded or are otherwise stressed, often produce suckers and shoots known as epicormic shoots, from dormant and adventitious buds on the trunk or main branches. It is very common to find clusters of shoots around large flush cuts or growing from the stubs of trees that have been topped. They are less likely to develop on a tree that has been given good formative pruning and is in a good state of health, wherein major pruning has not been imposed on the tree.

Epicormic growth is unsightly and it draws on food supplies that should go to other parts of the tree. These shoots can be cut off at any time, but, because they grow again year after year, it is necessary to prune them annually. Epicormic shoots are weakly attached and if allowed to develop

into large branches, for example on a linden (Tilia) or poplar (Populus), they are potentially hazardous.

In order to insure the best results from pruning, it is important to understand some key principles and proper methods for removing a branch. Dr. Alex Shigo, formally a Chief Scientist with the U.S. Forest Service has spent a lifetime gaining an understanding of how a tree grows and develops as well as how it responds to natural or pruning injury. Dr. Shigo has developed a model for these tree reactions called CODIT: “Compartmentalization of Decay in Trees”. Understanding this model facilitates the proper removal of branches with minimal damage to the tree.

According to Dr. Shigo, flush cuts and cuts that leave stubs are major starting points for many tree health problems including diseases and insects, discolored wood, decayed wood, cavities, cracks, wetwood, cankers and others. A flush cut is made so close to the trunk or main stem that it removes all or part of the branch collar. The branch collar is the enlarged section of meristematic tissue at the base of a branch and on the trunk or main stem surface that serves to provide rapid cell division to compartmentalize wounds upon branch removal. This tissue will grow over the wound unless a stub is left protruding out beyond the branch collar. Although the branch collar is more visible in some species than others, it is important to cut at the outer edge of the branch collar so that the branch collar is not removed, yet it is critical that no stub remains as well. Flush cuts inhibit the tree's natural defense system from compartmentalizing the wound. Stubs beyond the branch collar should never be left when pruning. They make perfect infection sites for insects and damaging pathogens. In fact, it may be more detrimental to leave a stub than remove part of the branch collar.

### **Principles of Pruning Summary**

1. Do not leave stubs.
2. Do not cut into the Branch Collar and do not make flush cuts.
3. Remove all narrow angled v-crotches when trees are young, as these crotches grow weaker with size and age of the tree.
4. Painting the cuts with wound dressing serves cosmetic purposes only. With the exception of applying a dressing to oak during the oak wilt infection period, research shows that wound dressings do not stop insect or disease problems. wound dressings can actually increase tree decay.
5. Use clean, sharp, well-maintained tools to provide clean, neat, and healthy cuts. **Do not** use anvil type pruners.
6. The best time to prune is late in the dormant season or in early spring before growth begins. Almost all trees will benefit from pruning early in the life of the plant and from careful pruning to maximize the percent of top quality specimen plants.
7. If continuous pruning is required to maintain plant
8. Size, the plant is not appropriate for the location.

### Study Questions:

1. T F In tree pruning, it is fine to leave stubs beyond the branch collar.
2. Developmental tree pruning included the following:

- A. Elimination of water sprouts
  - B. Establishment of a central leader
  - C. Broken branches
  - D. Rubbing branches
  - E. Epicormic and basal sprouts
3. Which shrub varieties bloom early in the growing season on old wood and should be pruned immediately after they finish blooming:
- A. Annabelle Hydrangea
  - B. Magnolia
  - C. Spiraea x vanhouttei 'Renaissance'
  - D. Ninebark
  - E. Azalea
4. Examples of perennials that benefit from early pinching include:
- A. Veronica
  - B. Flame Grass
  - C. Dicentra
  - D. Salvia
  - E. Hosta

Answers: 1. F    2. A, B, C, D, E    3. B, C, E    4. A, D