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## Pruning Evergreens

Agricultural Experiment Station, South Dakota State College

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PRUNING EVERGREENS

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## PRUNING EVERGREENS\*

Any consideration of the subject of pruning evergreens, particularly conifers, should first make recognition of several separate and distinct problems of pruning.

As the use of evergreens increases around residences, where trees are used in confined areas, such as foundation plantings, the need of pruning becomes most important. In years past, when evergreens were used largely in parks and cemeteries and on estates, for windbreaks, shelters and other purposes requiring tree-like forms, pruning was of small importance. If nurserymen hope to encourage the planting of evergreens on small residential properties, there is a vital need that they follow some program of pruning which will help to confine trees to certain limits of size for a much longer period than normal.

Pruning also divides itself into two distinct operations, first, pruning in the nursery to develop attractive and compact trees and, second, pruning of the trees after they are on the customer's grounds, which requires an entirely different procedure.

Nursery pruning can be quite severe when trees are not to be sold for two or three years after pruning, and this procedure is done along somewhat different lines than the type of pruning recommended for trees on the customer's grounds.

The subject of pruning is one which depends upon so many conditions that any rules on the subject must take into consideration varied circumstances. Among these varying factors are soil conditions, length of the growing season, space available for development of the tree and the general vitality of the particular specimen. The suggestions which follow are general in character and cannot be applied to all trees under all conditions.

Evergreens, especially conifers, require pruning techniques different from those applied to deciduous trees and shrubs, because once branches are removed they are at best only partially replaced and usually not at all. Pruning or disbudding evergreens requires intelligent work, and the pruner must be cautious and observant and have the desired result well in mind before he starts.

Evergreens generally are most beautiful and thrive best when allowed to grow in their natural forms. However, there are times when proper pruning can be of much benefit, artistically as well as physically. If a tree is uneven or straggly in appearance, if some of its branches are weak or certain parts are injured or diseased, if a tree has grown too large for its setting or if some special shaping is desired, judicious pruning is often the solution. Certain types of evergreens are regularly pruned in the nursery, especially when small, to insure the symmetrical development desired.

The individual growing habits and other characteristics of the various genera differ, and the general pruning techniques must be varied accordingly. Most conifers can be put into one of two groups: Those which are pruned after the new growth has started, such as pines, firs, spruces and hemlocks, or those which are pruned before the new growth is made, such as junipers, arborvitae, yews and retinosporas.

The pruning of the first group (Pines, firs, spruces and hemlocks) is generally limited to correcting defects and cutting back to insure compact growth. These evergreens ordinarily do not have the ability to produce new buds along their branches, so that once they are cut back all growth must come from the already existent buds on the ends of the branchlets. With any of these types, pruning should begin at an early age and be attended to regularly. One sudden shearing will not correct years of neglect.

Firs, spruces and some pines which are naturally pyramidal in form and are at their best if symmetrical are best kept in shape if the terminal buds on the main branches are removed as soon as any irregularity in growth is noted. This may be done with a small knife or even with the fingers. Clipping off the new growth forces the branches to grow from the side buds and also helps the weaker shoots to make additional growth. Or, as with hemlocks especially, owing to the nature of their terminal growth, the previous year's terminal growth may be cut back to a strong bud, twig or cluster of branches on the main limbs, and this treatment also results in a more dense lateral growth.

Pines probably require the least pruning of all evergreens because they are more or less informal in appearance. They should be pruned when the new growth is at its fullest, but before it has hardened. The new shoots, or candles, are cut to about an inch in length.

The Mugho pine, differing greatly in form of growth from the other types of pines, requires a little different treatment. In order to keep this pine compact, pruning is usually done annually, late in May or early in June depending on when the buds have reached their fullest growth before they open into leaves. Normally each branch makes a candle-like growth from two to five or six inches in length, of which approximately two-thirds should be cut off with a knife.

The lower branches of evergreens, particularly pines, firs, spruces and hemlocks, should never be removed unless dead or diseased. Such species look stiff and unnatural if their trunks are bare. If these trees grow quite closely together, nature will take care of the necessary pruning. If, however, lower or excess branches must be of necessity be removed, this may be done at any season, since the wounds are self-protected by a resinous sap. Large branches can be removed without cutting or splitting the wood if this kind of pruning is done with care.

Those evergreens which grow with a single main stem or trunk are often injured through damage to the top or leader. Such loss may be remedied by selecting a side branch growing just below the injury and tying it to a wooden or wire stake with soft cord. After a year or so it will grow upright into a new leader, and the loss of the original will hardly be noticeable. Sometimes double leaders develop,

and one of these should be cut out as early as possible, preferably while in bud. Cutting back injured branches to sound, live wood will stimulate new growth and often will save a dying tree. If the roots are well established, most evergreens can stand severe cutting back in the case of injuries.

Pruning can be the cure for many diseases which attack evergreen trees. With pines, brown tips killed by sphaeropsis may be cut off, branches badly weakened by matsucoccus can be pruned in summer and leaders infested with pine weevil can be cut or burned off early in the season. Often with spruces and occasionally with nemlock, there is cytospora infection, for which no satisfactory control is known except cutting off the affected branches. In some cases adjacent branches may be trained to fill the place formerly occupied by the diseased limb.

If a tree appears one-sided, the overlong branches may be cut back early in spring just above the vigorous side shoots so that this pruning takes off at least one or two years' full growth. If the branches are cut below the foliage line, there will seldom be any new growth and so it is best to prune cautiously and allow a margin of safety.

The softer foliage types, such as the yews, arborvitae, retinosporas and junipers, and all species with many small buds and the branches not in layers or whorls are usually pruned to insure even growth or to create a more formal shape. Most of these species require only occasional treatment late in summer or early in spring.

The informal types of junipers, whether creeping or upright, need some treatment to keep them within bounds. In the nursery they usually receive their first pruning after the first normal growing season in the fields. Again at the end of the second summer and so on during each year of growth the tops are cut back a little to strengthen the branches. Arborvitae, yews, cypress and false cypress may all be pruned this way.

When dense pyramidal growth is desired, pyramidal junipers and arborvitae can be clipped in spring before the new growth is made. It is best to use a sharp knife or standard pruning shears and cut back the branches in a shingling fashion. If skillfully done, this method will leave little evidence of pruning.

Some spreading types of evergreens such as Pfitzer juniper and Japanese yew, and the Canaert red cedar usually require regular trimming to keep them within bounds. The top branches of the Pfitzer juniper and Japanese yew should be trimmed so that they do not overhand the lower ones. The yews, especially, need severe pruning if they are to remain compact plants.

In keeping an evergreen down to a certain height or in keeping it in proportion to adjacent plants, it is necessary to begin pruning before the plant has grown large. If one waits until the tree has out-grown its space so that it must be benched to be brought down to size, there is no way of concealing the butchery. If one anticipates the growth by two or three years, pruning can be done so that it is concealed. The leader or main stem should be cut off well below the maximum height desired and the smaller branches allowed to take its place. Lateral branches may be trimmed in the shingling fashion so

that the smaller branches will cover the cuts. Scotch pines purchased for certain size can be retarded in growth and at the same time kept more dense if one-quarter to three-quarters of each tip of new growth is pinched back each year. This can also be done for Norway spruce, white pine and dwarf mugho pine.

Formal and artificial specimens and hedges require regular shearing once or even twice each year. If little shaping is desired, the tree should be trimmed only once or twice when small. In pruning formal specimens the tips of the branches are clipped with a pair of hedge scissors just as the new growth appears. It is usually best to prune into shapes not too remote from the tree's natural form. Curiosities, such as boxes, pyramids, globes, animal figures, etc. are not results of normal pruning operations. This type of pruning is best called shearing and is done with hedge-trimming shears, preferably the multiple-blade type. Evergreens with small blanchets, or with so-called soft foliage, such as arborvitae, junipers, cypress, yews and hemlocks, are best suited to this kind of trimming, while pines and spruces used for tall hedges will often also respond to surface shearing. It usually takes four or five years to develop a solid-wall hedge. The first shearing of a hedge should not be too severe, and thereafter only the necessary trimming and shaping should be done. However, constant care is required, because if it is once neglected, it is usually impossible to restore a hedge to its full beauty.

Root-pruning is done at the nursery and thereafter whenever one wishes to transplant evergreens. The roots should be pruned from six months to a year before trees are to be moved, especially if the specimens are large. Cut around the plant with a sharp spade or lawn edger in a shape like the ball of soil that is to be taken out with the entire tree. This develops a mass of fibrous roots near the base of the tree to take the place of the naturally long spreading ones.

The broad-leaved evergreens require little pruning and are naturally irregular. If they do grow out of bounds or straggly, they may be cut back slightly after all blooming is finished. In old specimens the old wood may be removed to make room for the new.