

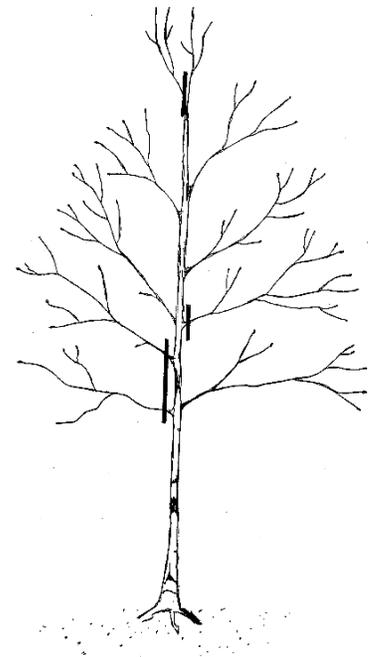
Plant Health Care Recommendations for Young Established Trees

Once established, young trees are capable of rapid growth. Young trees have a high ratio of leaf surface area to total biomass. With this high ratio, they generate a surplus of energy which is used to fuel rapid growth. Young trees also can tolerate change and stress because of high levels of stored energy.

Since the value and benefits of landscape plants increase as they grow, promoting rapid growth is generally a key objective when managing young plants. Plant health care programs are designed to maximize growth and to ensure a strong crown structure and root system to support the tree later in life. To obtain these objectives a program which includes pruning, fertilization and root system care is recommended.

Proper pruning early in a tree's life prevents and corrects problems that cause trees to fail as they mature. The primary goal of pruning young trees is to ensure a strong structure for future growth. Because the leaves produce all the plant's energy for growth, excessive pruning must be avoided. Subsequently, pruning lightly but often is best for the health of plants. Generally, pruning every two years is optimal for young trees.

A strong central leader should be maintained especially in trees with an excurrent habit. Co-dominant stems must be removed before a weak crotch develops. Dead, dying, diseased, crossing and rubbing limbs and root suckers do not contribute any significant energy to the plant and should be removed. Emphasis should be placed on providing adequate spacing between major limbs. A desirable form characteristic of the species should be maintained. Limbs which grow rapidly and protrude from the canopy should be cut back to a side branch to maintain a desirable shape.

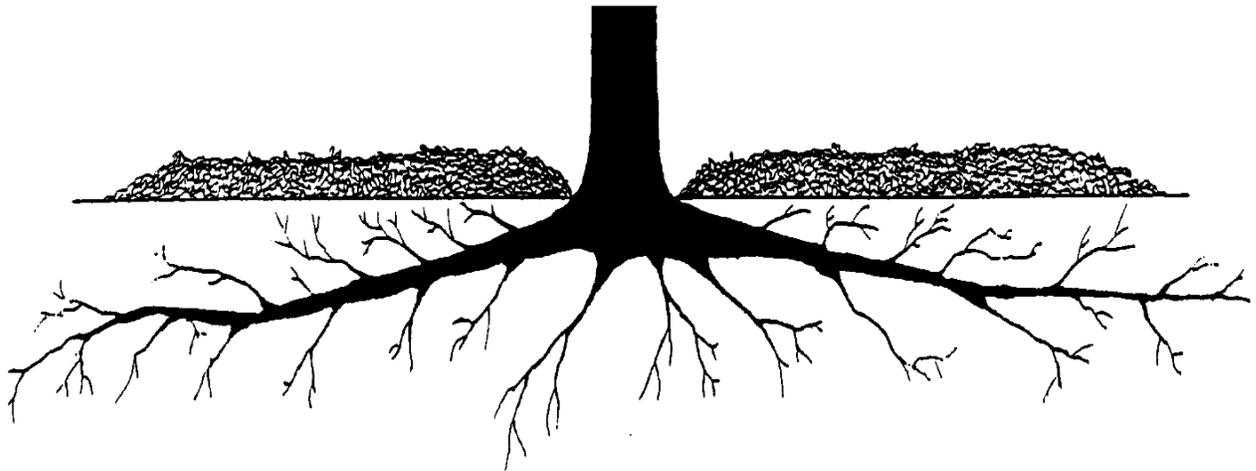


All trees should exhibit a flare where the stem joins the root system just above the soil line. If the flare is covered by soil or mulch, excavation is essential.

Mulch and soil will hold moisture against the stem which can directly damage these tissues and lead to insect and disease infestations.

Young trees generally respond to fertilization. When rapid growth is a primary objective, routine applications of a high nitrogen, slow release fertilizer such as Bartlett BOOST are recommended. Soil pH should be maintained at the level preferred by the plant species. If deficiency symptoms occur, remedial treatments should be based on soil analysis.

Maintaining a layer of organic mulch over the root system in lieu of turf is one of the most effective treatments to promote tree growth. Mulch eliminates competition between turf and tree roots for water and nutrients, conserves soil moisture, moderates temperatures and provides organic matter which promotes root development. Mulch also helps protect the base of trees from mowers and string trimmers. Wounds created by these tools weaken trees and predispose them to insect and disease pests. A two-to-four inch level of wood chip mulch beneath the crown of the tree is optimal. Do not allow mulch to accumulate against stem tissues.



Trees generally demand one inch of water per week during the growing season to maintain growth when rainfall does not occur. This is equivalent to 700 gallons of water per thousand square feet of root zone. Irrigation is particularly important on trees which are routinely fertilized. Irrigation water can be supplied gradually using a drip system or applied in one or two applications per week. Do not apply excessive irrigation which creates saturated soil conditions. Tensiometers (moisture meters) are available which help determine irrigation needs.

Insect pests and disease organisms weaken trees by defoliation as well as stem and root damage. Pests should be managed using integrated pest management (IPM) principles. IPM is a technique of periodically inspecting plants for pests and other plant health problems. When detected, pests are maintained below levels which impact plant health through cultural, biological and/or chemical treatments. Bartlett's MoniTor® IPM program provides regular inspections and effective treatments which protect plant health.