

FORESTRY FACTS

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Walnut Tips – Retired Cropland Plantings

Walnut plantings on old fields require special measures to ensure successful establishment. On these retired croplands, brome grasses (*Bromus* species) can be a major problem, as it competes with walnut for nutrients and water. There is also evidence that brome grass may have allelopathic (poisonous) effects on young walnut trees. To survive, walnut seedlings also must be vigorous and healthy. By controlling competition from grasses and avoiding any non-essential pruning, you give your walnut seedlings the best possible chance to develop into a healthy, productive plantation.

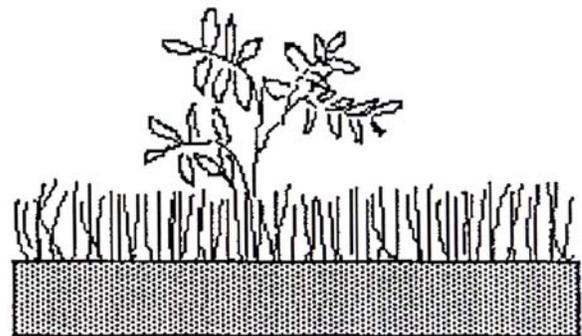
CONTROL GRASS COMPETITION

Controlling grass competition is the single most important thing you can do to aid in the establishment of a healthy, old-field walnut plantation. Grass control is an ongoing practice and should be continued throughout the developmental stage of retired cropland plantations.

As your trees grow in size, they will cast enough shade to allow for plant succession under their crowns. Competing grasses, like brome, will be replaced by other grasses, mainly bluegrasses (*Poa* species) and June grass (*Koeleria cristata*), which do not have the same negative effects on walnut. Eventually, raspberries, sumac, goldenrod and other broadleaf species will invade the understory, crowding and shading out the grasses. This final step of succession signals your success in establishing a new walnut stand.

grass control in detail, and lists chemicals available for use in walnut plantations.

Whichever method of control you employ, mechanical or chemical, treatment should be applied whenever a slow-down in growth is observed. Slowdown is evident when shoot growth is only a few inches per season, and the leaves appear physically smaller and dull green in color. Continue grass control until a slow-down in growth is no longer evident or until the canopy has closed and the competing grasses have given way to other understory species.



Forestry Facts #52, Walnut Tips - Weed Control Update, explains methods of weed and

Mowing as a method of grass control is of limited value. It is labor intensive and does not kill the competing grasses. While mowing will prevent the grasses from overtopping the walnut seedlings, the grasses are still alive and competing for limited water and nutrient resources.

One way to shorten the time to canopy closure and, therefore, reduce the amount of grass control needed, is to interplant other woody species with the walnut seedlings. A common practice is to plant alternate rows of walnut and white pine (*Pinus strobus*). The pine combined with the walnut will form a closed canopy faster than the walnut would alone.

In addition, the increase in stand density will encourage the walnut trees to grow straighter and improve self-pruning.

An increase in stand density can also be achieved by planting the walnut seedlings at a closer spacing. Close spacing is desirable, but may not be practical on larger plantations. To get machinery through a plantation (for herbicide applications, harvesting, etc.), a

spacing of 8 to 10 feet between rows is required. If a closer spacing is used to encourage straighter growth, some trees will have to be sacrificed in a thinning operation. A thinning of this sort would usually take place before the trees are of merchantable size, and thus the cost of the thinning, combined with the cost of the lost seedlings, could make tight spacing cost-prohibitive on large plantations.

AVOID NON-ESSENTIAL PRUNING

Even with grass control, your trees need to be vigorous and strong to withstand competition. The easiest way to ensure this is to avoid pruning, other than essential corrective pruning, until the stand reaches the stage where brome grass competition is no longer a threat. Pruning removes leaves and lowers the total photosynthetic capacity of the trees, thereby reducing their ability to outcompete the grasses.

Corrective pruning can still be done to correct a fork in the leader (top shoot), but should only be done in combination with grass control efforts.

The *Walnut Tips* series is produced in cooperation with the Wisconsin Walnut Council. *Retired Cropland Plantings* was written by Rudy Nigl and Dan Meyer