WALNUT NOTES

Fertilization

Fertilization is perhaps the least understood of all the cultural practices associated with managing black walnut trees. Many fertilization studies have been done, but the results have been inconsistent and hard to compare. So we are only able to make general recommendations for fertilizing black walnut. However, first, there are some general points to keep in mind.

Our best advice for ensuring good walnut growth is to locate your plantation on an ideal site. Don't fertilize walnut trees on good sites, especially young trees. Fertilization doesn't seem to help the trees grow; but it does help weeds grow, which then suppress walnut growth.

Fertilizing pole-size and larger trees is likely to provide the best economic return. Chemical analysis of walnut leaves can indicate current nutrient element levels of the trees and suggest probable response to fertilization with nitrogen (N), phosphorus (P), potassium (K), and calcium (Ca) (table 1). Of these elements, N deficiencies are most common; and use of N increases diameter the most. Height growth is seldom increased by fertilization. However, all four elements can be effective in improving growth and nut production.

Table 1 .-*Tentative critical foliar nutrient element levels- for diagnosing nutrient deficiencies in black walnut trees*

Nutrient element	Deficient (will probably respond to fertilization)	Intermediate (may or may not respond to fertilization)	Adequate (will probably not respond to fertilization)
	Percent		
N	Below 2.00	2.00-2.60	Over 2.60
P	Below .10	.10- .25	Over .25
K	Below .75	.75-1.30	Over 1.30
Ca	Below .50	.50-1.10	Over 1.10

'Based on analyses of mature leaves collected about mid-August (Phares and Finn 1971).

Before deciding to fertilize, determine if there are *moisture* or *physical /imitations* that may be affecting tree growth. Remember, fertilizer cannot compensate for these two limiting factors,

If you do decide to fertilize, identify several trees to receive no fertilizers; use these trees to compare the growth of fertilized trees in terms of the amount of growth and

its duration, and to estimate when to refertilize. Do not refertilize if fertilized trees grow no better than trees not fertilized. Refertilize when the satisfactory growth response to fertilizer is no longer evident when compared to trees not fertilized. All fertilized trees should be free to grow or released before fertilizing.

For pole-size and larger trees managed for timber, apply 3 pounds of N per tree. Spread fertilizer evenly around the tree in late spring. Add 5 pounds of triple superphosphate and 8 pounds of muriate of potash if trees are managed for timber and nuts. Except for Ca, treatments may need to be repeated every 3 to 5 years. Frequent fertilization, especially with N, can increase the need to add lime to maintain and raise pH. The pH range for growing black walnut is 5 to 8.

References

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