



FILBERTS (Oregon)

Observations of annual shoot growth and size and color of leaves and nuts are helpful to an orchardist in determining the fertilizer needs of his trees. In addition, leaf analysis indicates which elements are present in adequate, deficient, or excessive amounts. Soil analysis before planting is useful in predicting the need for potassium, magnesium, or lime applications.

A nutrient deficiency should be suspected if the cause of poor tree performance is not primarily one or more of the following:

lack of pruning	soil borne pests
winter injury	poor soil drainage
physical injury	disease
poor weather	insects
poor pollination	rodents
deep cultivation	shallow soil or limited moisture

NITROGEN (N)

Young trees

<u>Age</u>	<u>Apply this amount (lb N/tree)</u>
planting-2 yrs*	none
3-5	1/4 - 1/3
6-7	1/3 - 1/2
8-10	1/2 - 3/4

*Apply N only after 2 growing seasons have passed. Young trees should grow 18-30 inches annually.

Mature trees

Leaf analysis guide for N application

<u>% leaf N in August</u>	<u>Apply this amount N lb/tree</u>
Under 1.8 (severe deficiency)	3-4
1.8-2.2 (deficiency)	2-3
2.2-2.5 (optimal)	1.5-2.0
Over 2.5 (excess)	None

Apply N in a 1-2 foot band under drip line or increase 20-30% for a broadcast application.

Note: Banding, over a period of years, may lead to excessively acid soil in the band.

Adjust rates according to results of application in previous years.

N applications should be made during the period between February 1 to leafing-out in spring.

PHOSPHORUS (P)

Filbert trees have not responded favorably to applications of P.

POTASSIUM (K)

K deficiency is common in Oregon filbert orchards.

Mature trees

Leaf analysis guide for K application

<u>% leaf K in August</u>	<u>Apply this amount K₂O lb/tree</u>
Under 0.5 (severe deficiency)	8-10
0.5-0.8 (deficiency)	6-8
0.8-1.0 (borderline)	4-6
Over 1.0 (optimum)	None

Place K in a band at the drip line of the tree. This band should have a width of 2 inches for each pound of fertilizer applied.

When muriate of potash (KCl) is used it should be applied in fall or before mid-February to avoid chloride toxicity.

Potassium levels often do not increase until the year following application. A single application is usually effective for 2 or more years.

MICRONUTRIENTS

There have been no indications of a favorable response in yield or quality from applications of micronutrients.

NEW ORCHARDS

Soil sampling and testing of fields to be planted to orchards is recommended. Appli-

cation and incorporation into soil of certain nutrient elements such as K and Mg can be best done prior to planting.

POTASSIUM (K)

K should be broadcast and plowed under during preparation of land for planting.

If OSU soil test for K reads (ppm):	Apply this amount (lb/A)	
	$K_2O \times 0.83 =$	K
0 to 75	300-400	250-330
75 to 150	200-300	165-250
over 150	None	

The K content of fertilizer is expressed as the oxide (K_2O) on fertilizer labels. Multiply K_2O by 0.83 to convert to K.

MAGNESIUM (Mg)

Mg should be broadcast and plowed under during preparation of the land for planting.

If the OSU soil test for Mg is less than 0.5 me/100g of soil, apply 1.5 T/A of dolomite.

Dolomite acts in a similar manner to limestone in the correction of soil acidity.

LIME

Liming of orchard soils is most effective where the lime is mixed into the soil to as great a depth as feasible during the preparation of the land for planting.

If the OSU soil test has a pH of less than 5.2, apply ground limestone at the rate of 3-5 T/A.

K, Mg, and lime recommendations for new orchards are based on soil test values from the Soil Testing Laboratory, OSU, Corvallis, Oregon.

These recommendations are based on research conducted by John H. Painter, Horticulturist, USDA (Emeritus) and on grower experience using leaf analysis as a guide.

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