

# FERTILIZING FRUIT TREES & BERRIES

Fruit trees need correct care if they are to produce good yields of large, high quality fruit. Proper fertilization is one important part of caring for the trees. Fertilizers needed in Utah are nitrogen which is applied annually and zinc, iron and manganese, and phosphorus which are applied as needed.

FRUIT TREE	AVERAGE SHOOT GROWTH IN INCHES	
	Young Trees (up to 6 yrs. old)	Bearing Trees (over 6 yrs. old)
Apple, dwarf & semidwarf	10-20	4-8
Apple, standard & spur types	10-20	6-10
Peach, nectarine & apricot	10-24	8-15
Sour cherry & plum	10-20	8-12

As a general recommendation, apply a preplant nitrogen and phosphorus (N-P) so that these elements will be available to the newly set plants early. Utah soils generally have plenty of potassium (K). The all-purpose fertilizer could be 16-16-8, 18-24-6, 16-20-0 or a similar formulation. Apply approximately 1 pound per 100 square feet before planting.

Nitrogen applied each year is required to successfully grow fruit trees in Utah. Observing the shoot growth is the best way to determine fertilizer needs.

Measure the length of the previous year's shoots on several branches and determine the average length. The following table suggests average length of shoot growth for healthy trees. Increase the fertilization rate if shoot growth is below average, and decrease the rate if growth is above average. Shoot growth should not be thin or weak.

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Pears frequently do best with little or no fertilizer because fire blight disease attacks young, vigorous growth.

Apply the nitrogen to the soil in a band below the outer edge of the branches. For young trees the width of the fertilizer band may be up to 2 feet near the trunk. For mature trees, the band may be two to three feet wide and eight to ten feet away from the tree trunk.

Nitrogen fertilizer may be spread on the soil (or snow) anytime from December until early March but

POUNDS OF NITROGEN (PER TREE) FOR FRUIT TREES			
AGE OF TREES	ACTUAL NITROGEN	AMMONIUM NITRATE (34-0-0)	AMMONIUM SULFATE (21-0-0)
WHEN PLANTED	DO NOT APPLY COMMERCIAL FERTILIZERS AT PLANTING TIME		
1-3 yrs.	1/4 - 1/2	3/4 - 1 & 1/2	1 & 1/4 - 2 & 1/2
3-8 yrs.	1/2 - 1	1 - 1 & 2/3	2 & 1/2 - 5
Mature Trees	1 minimum	3 minimum	5 minimum
Large apple or cherry	1 & 1/2 - 3	4 & 1/2 - 9	7 & 1/2 - 15

should be applied at least a month before bloom time. The following table gives some suggested amounts. Actual application should be done according to tree growth.

Fruit trees, especially dwarf trees, will be stunted if allowed to bear fruit too young. Fruit should be removed early in the season to allow for proper vegetative growth for the first three years.

Trees receiving a heavy pruning will often need less fertilizer that year. Trees with a heavy fruit set will have a greater need for fertilizer.

**Nitrogen deficiency symptoms include:** pale yellowish-green leaves, short thin shoot growth, small, poor quality fruit and general lack of tree vigor.

**Excessive nitrogen will cause:** poorly colored, late maturing fruit which does not store as well as other fruit. Excessive vegetative growth and water sprouts often occur.

Orchards with a grass cover crop usually need up to 20 percent more than these average amount for nitrogen to supply the needs of the grass.

Barnyard manures add only small amounts of nutrients. The use of manure would serve a greater value as a soil amendment in general garden areas.

Phosphorus is seldom needed but may be required in areas where topsoil has been removed. Soil should be tested and phosphorus worked into the soil before planting. Phosphorus should not be applied too often or minor nutrients may become unavailable to the plant. Most Utah soils are adequately supplied with potassium so that there is seldom any need for applying potassium fertilizer.

Iron deficiency symptoms show as pale green or yellow areas between dark green veins.

Iron chlorosis is not caused by the lack of iron in the soil, but because the iron is made unavailable by alkaline soil conditions. It is greatly aggravated by overwatering especially in the early spring.

The best control of iron chlorosis is an iron sequestrene compound; "Fe 138". This form of iron is expensive, but a soil application of from 1/4 to 1 pound per tree will control the deficiency for up to 3 years. Apply the material in early spring. It must be watered or spaded into the soil at the time of application since sunlight will decompose it.

Because Fe 138 is expensive, homeowners may elect to try other products. Sequestrene Fe 330, iron tonic or Ortho liquid iron can help control iron chlorosis when applied as foliar sprays. Spraying should begin as soon as sufficient foliage is present in the spring. Up to three sprays can be applied at weekly intervals. Fruit should not be sprayed after it gets more than one inch in diameter or residues will persist through harvest. All iron compounds will stain, so use care not to spray on buildings, cement work or fences.

Manganese deficiency is most common on peaches and apricots. Apply two pounds of manganese sulfate to the soil over the root of each tree and spade it into the soil to about 4 inches depth. This material is effective for a number of years.

Zinc deficiency occurs most often on peaches, apples and cherries but is occasionally seen on apricots and plums. Orchards fertilized with manure for a number of years or that are planted on old corral sites have been especially susceptible to zinc deficiency. Spray affected apple, pear and peach trees during their late dormant stage of growth in the spring. Use a solution of 10 tablespoons of zinc sulfate per gallon of water. If the trees were not treated during the dormant stage and the deficiency shows up after the leaves are developed, spray Zn EDTA, 2 tablespoons per gallon before the fruit reaches one inch in diameter. Ortho Gro Liquid Plant Food, as well as other trace mineral fertilizers usually contain enough zinc to correct most zinc deficiencies.

Other nutrient deficiencies seldom occur. A "shotgun" approach to minor element application may alter the balance of tree nutrition with toxic results to the crop.



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