

## DO AVOCADO TREES NEED FERTILIZER?

Yes, because:

- Fruit are removed from the grove representing a net loss in minerals
- As the trees go through their growth cycle and are pruned, minerals become locked up and are not available to the trees for long periods
  - Leaves, flowers and fruit are shed and don't fully decompose for several months
  - Prunings can take years to compost and make their minerals available to the roots
- Other plants, like weeds, rob minerals from the soil near the trees
- The nature of the soil chemistry and organic matter can lock up essential minerals
- Readily available minerals are leached from the soil through rain and irrigation
- Avocado trees have a demand for nutrients during the tree growth cycle with a greater or lesser demand at different parts of the growth cycle.



Therefore, it is important to give the tree what it needs at the right time and replace those nutrients being used up.

## WHAT MINERALS DO AVOCADO TREES USE?

All the common minerals other plants use.

Avocado trees take up and use each mineral in different amounts as some are used much more than others

Name	Symbol	The tree needs*
<i>Macro nutrients</i>		
Nitrogen	N	Some to Lots
Phosphorous	P	Some
Potassium	K	Lots
Calcium	Ca	Lots
Magnesium	Mg	Lots
Sulfur	S	Some
<i>Micro nutrients</i>		
Iron	Fe	Very little
Manganese	Mn	Very little
Boron	B	Little
Zinc	Zn	Little

\*Only relative amounts are given here as the exact amounts depend on many factors often specific to the grove

## WHAT DOES THE FERTILIZER NEED TO DO?

For the best consistent crops fertilizer applications should aim keep the trees very healthy, with strong leaves for a good factory, good fruit size, good production of flowering wood and strong healthy roots to take up water and minerals.



## IS THERE A RIGHT BALANCE OF MINERALS THAT THE FERTILIZER SHOULD CONTAIN?

- Yes, as the amount of each mineral in leaves, the flesh and seed of fruit, and flowers are different, some minerals are required in greater amounts than others.
- Very simply, avocados need the right amounts of N and P for healthy metabolism, K and Zn in the fruit, Ca for good structure, Mg for good photosynthesis capacity, B, Fe, and Mn for good health.

## WHAT DO AVOCADO TREES SEEM TO NEED MOST?

- Nitrogen for growth and development
- Potassium for growth and fruit bearing
- Boron for growth
- Zinc for the fruit

## HOW MUCH FERTILIZER SHOULD BE USED?

Depends on many factors and determining the exact amounts and times of applications is a job for a specialist as to determine what is needed the following is considered:

- Values of each mineral measured by regular soil and leaf tests including analysis of irrigation water
- Current young and mature fruit load on the trees and the cropping history
- Strength of the growth cycle of the tree
- Target levels of minerals for best production
- Regulations limiting downstream effects of fertilizer applications



## FOR BEST RESULTS

- Take advice
- Aim for the optimum balance between, shoot growth, fruiting and root growth
- Apply fertilizer in moderation

## FURTHER READING:

There are a large number of reports on the fertilizer needs of avocado trees on the [www.avocadosource.com](http://www.avocadosource.com) website, interested readers are encouraged to visit this website for further information.

**Managing soils for avocado production and root health**, Crowley, D., 2007 California Avocado Society Yearbook 90: 107-130

**Potassium fertilizer experiment with avocado trees on heavy soil**, Lahav, E., Bareket, M. and Zamet, D., 1976 California Avocado Society Yearbook 60: 181-186

**Properly timed soil-applied nitrogen fertilizer increases yield and fruit size of 'Hass' avocado**, Lovatt, C.J., 2001 Journal of the American Society of Horticultural Science 126: 555-559