

## Crop Information

**This content is only available in English.**

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### Fruit and Fruitlet Analysis

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These services apply to apples, in relation to storage quality potential and the need for seasonal Nitrogen, Calcium and Phosphorus sprays. Special arrangements should be made for sampling and collection.

#### FRUITLET SAMPLES:

Sampling time is important. Send fruitlets as early as possible, but not so early to be too small. Fruitlets should ideally be about 1" in diameter. Select randomly 20-30 trees within the block. Select one of the same size from each tree sampled. If the first fruitlet is taken from the north side of a tree, choose the next fruitlet from the east, then south and so on. Identify sample with field number and crop type.

#### FRUIT ANALYSIS:

Samples should be taken within 2 weeks before harvest. Parts of orchards which are known to produce fruit of different storage quality should be sampled separately. Select 20-30 trees along the sampling path. Take one undamaged average size apple from each tree. If the first apple is taken from east, then from the south, and so on. Send 20 apples. Mark the samples as to field, block and variety.

#### WHAT WILL FRUIT ANALYSIS TELL ME?

##### Mineral Composition Of Fruit

##### Nitrogen (N)

It is important to have good "N" tissue levels early in the season in order to maintain adequate levels later on when it is most critical. Excess "N" on the other hand promotes lush growth, and poor fruit quality. Susceptibility to rotting, loss of firmness, poor skin finish and poor colour are increased as fruit nitrogen content increases. Adequate nitrogen levels are required for good bud set for next seasons fruit but this must be offset against the risk of reduced fruit firmness particularly if calcium is low. The N/Ca ratio probably should not exceed 12 for quality. Low nitrogen content in the fruit also reduces flavour in the fruit.

##### Phosphorus (P)

Adequate levels are necessary to ensure fruit firmness and avoid problems of fruit breakdown e.g. LTB, particularly when fruit calcium levels are also low. Maintaining adequate P levels in season also reduces the occurrence of pre harvest drop in varieties that are prone to this.

##### Potassium (K)

Potassium helps the tree maintain resistance against drought, disease and insect pressure. Maintaining a good K level will help the tree develop hardiness and protect it against winter injury. Adequate K levels are also important for quality of the fruit and is directly correlated with pressure test. However the risk of Bitter Pit, Gleosporium rotting and core flush are increased with high fruit potassium levels. Bitter Pit incidence is related to the K+Mg/Ca ratio. This high levels of potassium are more dangerous when fruit calcium levels are low or borderline. Generally however fruit flavour and acidity increases with increasing potassium levels. This can be advantageous provided fruit calcium levels are adequate.

##### Calcium (Ca)

Adequate levels are necessary to maintain high quality fruit throughout storage. Calcium deficiency has been linked to more post harvest disorders of apples than any other mineral. Interpretation of fruit calcium status should involve other elements especially Potassium, Phosphorus and Boron.

##### Magnesium (Mg)

High levels of magnesium increase the susceptibility of the fruit to Bitter Pit, especially where calcium levels are marginal. However low levels of Mg will increase the amount of pre harvest drop to poor up take of Phosphorus. It is important to maintain adequate Mg at critical times principally post flowering. Magnesium application should begin with a good ground program

and in cases of low Mg an aggressive Mg foliar program is also required.