



POSTHARVEST MANAGEMENT

The way you manage your orchards after harvest is one of the most important factors for sustainable production every year; it is critical that carbohydrate and reserve building are managed optimally. The goal is to build strong reserves in the storage organs: roots and flower buds. These reserves support better, more consistent crops in the following season. If postharvest irrigation is not managed well, leaf quality can deteriorate quickly; this limits reserve building and has a direct negative effect on future production.

Leaf quality

The following points are very important to manage well:

1. Keep leaf quality and leaf health strong so that photosynthesis and reserve building stay optimal.
2. Manage irrigation and soil moisture so that leaf quality does not drop because of drought or drying out by wind.
3. Manage irrigation and soil moisture so that the topsoil and fine roots do not dry out; this will restrict reserve building.
4. Manage irrigation and soil moisture so that the trees do not receive too much water; this leads to unnecessary vegetative growth and uses up valuable reserves.
5. Apply postharvest sprays against Brown rust, Red spider mite and, where needed, Xanthomonas; this keeps leaves healthy.
6. Use your leaf analysis results to keep leaf quality optimal so that any corrective foliar feeds can be taken up effectively.

If leaf quality drops, postharvest fertiliser and corrective foliar feeds must be applied.

Fertilizer

In the industry, and depending on cultivar, crop load, soil quality, soil health status and leaf analysis, the norm is that about 60% of the annual nitrogen (N) is applied as postharvest fertiliser.

Early cultivars and cultivars in high chill areas usually flower while the soil is still very cold; this limits uptake of early fertiliser. These cultivars depend strongly on good internal reserves to support fruit set and early fruit growth. The following products are available in the industry; however, a tailored fertiliser programme that fits each producer's conditions must be discussed with a fertiliser agent.



Corrective foliar feeds

It is no longer profitable for any farming operation to work with a single "blanket approach" for nutrition. Precision farming is essential to secure long term sustainability and to avoid unnecessary costs.

This is why leaf analysis is so important. Each block and each cultivar has its own shortages and needs. These must be addressed with targeted soil applications or foliar applications.

Correcting nutrient deficiencies

The following deficiencies are observed regularly; however, each producer must use their own leaf analysis results and work with a fertiliser agent to put a tailored programme in place:

1. Magnesium
2. Manganese
3. Zinc
4. Potassium



1. Example of supplying 60% of the annual N:
 - » LAN 28%: 200 kg/ha
 - » or 1:0:0 (40): 150 kg/ha
 - » or Amonium sulphate: 300 kg/ha.
2. Example for addressing annual magnesium shortages:
 - » Magnesium sulphate: 75 kg/ha
 - » This is a preventative application to address recurring shortages at the start of the new growth season.
3. In orchards where the fine feeder roots are very shallow, it is beneficial to apply fertiliser by hand directly over the root zone; this will support better uptake. If fertiliser is applied through the irrigation system, it is better to split the postharvest application into 3–4 smaller applications to improve uptake.

Water management

The trees' water requirement after harvest is usually about 50% of what was applied during the active growth season. This gives the trees a chance to build reserves without stimulating new vegetative growth. The timing and number of hours per irrigation depend on the following and must be set using the producer's judgement and experience:

1. **Soil type**
 - » Sandy soils: fewer hours per irrigation but more frequent applications.
 - » Clay soils: 2 irrigations per week of about 2 hours each.
 - » Heavier clay soils: 1 irrigation per week of about 4 hours.
2. **Heat/day temperatures.**
3. **Wind**
 - » Wind dries soils out faster: higher evapotranspiration.
 - » The trees' moisture requirement increases on hot, windy days.

Nitrate Balancer

Nitrate Balancer is a proven product in the industry. It plays a major role in optimising the trees' reserve status by converting nitrates in the tree to carbohydrates and then storing those carbohydrates in the flower buds and roots. This supports better flowering in the next season.

The product is especially valuable in seasons with low chill unit accumulation and in cultivars with a high chill requirement.

The following is a guideline for the optimal application timing; always confirm the details with a chemical agent:

- » Apply at 10–20% yellow leaves.
- » Spray volume: 1000 l/ha.
- » Rate: 500 ml/100 l water; not less than 5 l/ha.
- » The product works best when about 80% of the leaves are still green; then the nitrates in the leaves can be used, converted and stored effectively.

When used together with good postharvest practices, Nitrate Balancer can play an important role in securing consistent annual yields for the following reasons:

- » It supports optimal reserve building and helps to reduce delayed and uneven budbreak; especially in seasons with low chill accumulation.
- » It supports consistent tonnages year after year through strong reserves.
- » It helps late season cultivars, which have a short reserve building window, to build adequate reserves.

Regards,

The CPC technical team

Fertility management

The following products are used to improve fertility and reserve status. Planned applications must be formulated with a fertiliser agent:

1. **Molybdenum**
2. **Urea**
3. **Boron**

Disease management

The following diseases must be monitored:

1. **Xanthomonas**
2. **Brown rust**
3. **Red spider mite**



Orchard sprays

Once the fruit have been harvested, it is important to keep the leaves healthy and disease free. This postharvest period is usually 3–4 months for early cultivars and 2–3 months for late cultivars. Healthy leaves in this period are crucial for building reserves.

In the orchard, pay attention to:

- » **Disease control**
- » **Correcting nutrient deficiencies**
- » **Fertility management**

Reserve building

Reserve status plays a direct role in how well the first physiological stages in the tree are completed; from budbreak to fruit set. Most of these early stages in the first 42 days depend heavily on the reserves inside the tree.

The positive role of carbohydrates becomes very important when trees are under stress or when they need high energy levels; for example when soil temperatures are still low and chill units and heat units vary before or at the start of bud movement and flowering.

Reserve carbohydrates act as a buffer during unfavourable conditions. They provide a constant source of energy to the tree.