

## Yara Africa Fertilizer (Pty) Ltd

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## Knowledge grows

Operations in  
more than  
**50**  
countries



Sales to  
more than  
**150**  
countries

Yara's market presence includes a global network of sales offices in more than 50 countries and sale to more than 150. The company has a strong production and marketing base in Europe and has greatly extended its presence in North and South America, not least taking a strong position in Brazil, as well as in Australia, while expanding in Africa and Asia.

### Market Knowledge

Yara delivers a wide range of solutions for the world's farmers and industrial users, leveraging its experience and knowledge to tailor solutions to local needs. With regard to Agricultural Solutions, Yara offers the market's most complete portfolio of mineral fertilizers and solutions for sustainable agriculture – covering all necessary nutrients for most crops.



### Creating Impact

Yara commits to a sustainable future. Creating impact is our blueprint to create business value in the way we respond to human challenges. Yara creates value by delivering profitable, sustainable growth benefitting customers and shareholders – as well as society at large. By creating value Yara is positioned to create impact, to make a difference. Successful alignment of the company's current and future core business with global challenges will strengthen the company's position and develop a sustainable competitive edge. Yara creates impact by engaging in three focal areas where it is able to make a profound contribution: food security, resource management, and environmental issues. The three areas are intrinsically linked, and Yara is uniquely positioned to develop viable business solutions that address related global challenges.

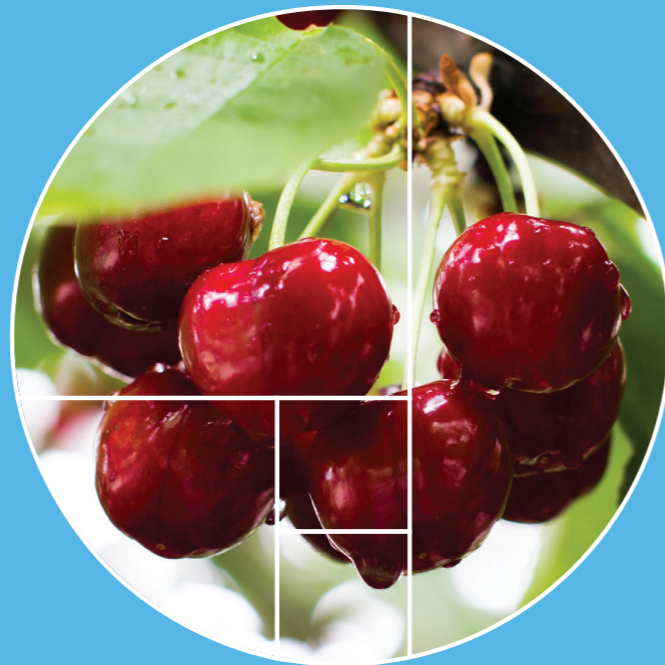


# Quality Stone Fruit





# Timing is everything



Yara works closely with researchers and farmers all over the world, gaining valuable knowledge on how best to use our fertilizers.

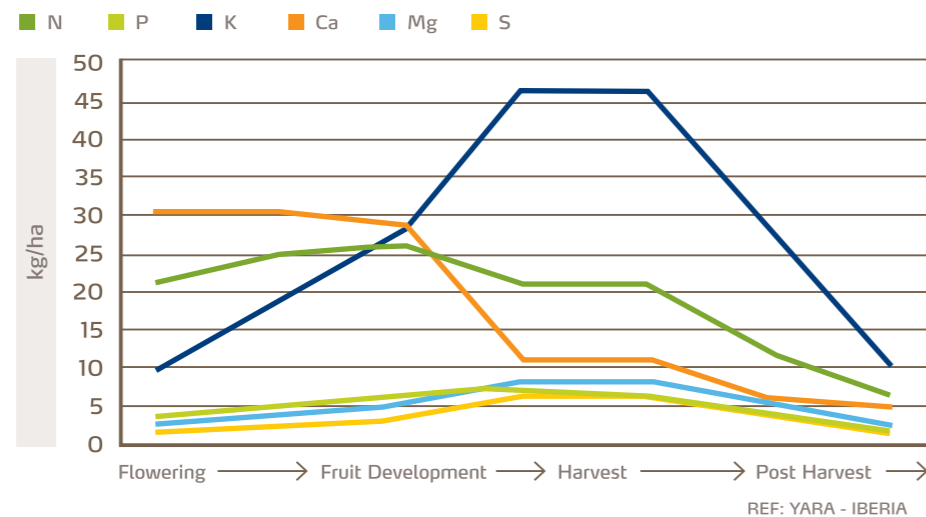
The nutrients present in the soil are not always plant available, so the relationship between the nutrient content in the soil and crop yield is not always strong. Mineral fertilizers should provide plant nutrients, not feed the soil.

While the soil's historic nutrient levels should be taken into account, the crop's requirements, norms and physiology will determine the plant nutrition strategy. The nutritional status of the crop determines the fertilizer application rate and the timing, so the nutrients are applied only when and as needed.

By meeting the needs of the crop, Yara's product portfolio and application competence are ideally suited to this "just-in-time" approach.

YaraVita™ products are not simply nutrients. They are finished products designed from the start with crop nutrition in mind. When you choose YaraVita™, you can be sure that what you apply will be easy and convenient to use and effective and safe for the crop.

## Nutrient Application Timing Chart for Stone Fruit



## Fertilizer Programme for Stone fruit

	Bud Burst	Petal Fall	Fruit Set	Stone Hardening	Fruit Development	Post Harvest
Granular						
Other:	Turbo Range/ Achilles		Turbo Range/ Achilles	TopUp/ Finesse/ Deuce C	TopUp/ Finesse/ Deuce C	Turbo Range/ Achilles
YaraLiva™		Nitrabor™	Nitrabor™			
YaraVita™	Bortrac 150			Stopit		Bortrac 150
YaraVita™	Zintrac 700	Seniphos	Seniphos	Mantrac Pro		Zintrac 700
Water Soluble and Liquid						
Other:	AB Flex Fertigation system					
YaraLiva™		Calcinit™				

Seek local agronomic advice for rates/ha applications

## Important Nutrients

**Nitrogen** is important for chlorophyll and nucleic and amino acid synthesis. It thus has a major role to play in cell division and the growth of new tissues and various transport processes. Nitrogen can improve the appearance and taste of processed peaches.

**Phosphorus** is a component of nucleic acids and lipids and is important in metabolism, energy transfer and photosynthate transport. Phosphorus has a direct effect on fruit colour, increasing the levels of anthocyanins in the skin to improve crop marketability.

**Magnesium** is a key constituent of the chlorophyll molecule. Magnesium increases fruit retention, reducing fruit drop. Provided adequate supplies of calcium are maintained, high levels of magnesium will also improve fruit firmness.

**Boron** is involved in cell wall formation, stabilisation and lignification, as well as xylem differentiation, which improves calcium mobility. It is also needed to ensure the normal development of new tissues. Good boron supply is critical to reduce fruit cracking and maintain fruit quality.

**Copper** is required for chlorophyll synthesis. It is a constituent of enzymes responsible for the reduction of molecular oxygen.

**Iron** is required as a precursor to chlorophyll formation. It is also required in a number of important plant enzymes.

**Manganese** is involved in a wide range of enzyme processes including hormone synthesis.

**Zinc** plays a role in many enzyme systems and biochemical functions. It also acts as a precursor of indoleacetic acid.

## The importance of Potassium

**Potassium** promotes strong, vigorous tree growth, and boosts fruit size and cell strength.

It also encourages good tolerance to pests and diseases. In stone fruit, potassium removal can be double that of nitrogen, particularly in apricots,

peaches and nectarines. Over-use of potassium can, however, adversely affect fruit quality.

This is largely as a result of competing with, and restricting, calcium and magnesium uptake.

Where soil supplies are inadequate, potassium yield responses have been recorded following applications of up to 200kg/ha across a range of stone fruit types.

Adequate levels of K in the leaf are essential for higher yields.

Best responses come from regular applications throughout the season. However, it is important that application programmes provide high levels of potassium during fruit growth – peak uptake is later than that for most other nutrients.

During peak periods of K demand, such as fruit fill, high-yielding crops or those with a heavy fruit load can have inadequate levels of potassium in the leaves.

Potassium has a positive effect on a number of quality characteristics. It plays a major role in improving the acidity and the TSS and sugar levels in the fruit.

This produces more desirable fresh fruit. Potassium also improves fruit colour through increasing anthocyanin content. It is important that K concentrations are in balance with other cations, particularly calcium so as to minimise preferential uptake of one cation over another. Oversupply of K reduces Mg and Ca uptake.

Potassium formulation also plays a major role in balancing nutrient uptake. Potassium chloride use is less effective at raising leaf K levels than nitrate or sulphate forms.

It also restricts the uptake of P and increases chloride concentrations in the leaf.

As a result, the highest yields come from using potassium nitrate at optimal rates (Figure 1).

Figure 1:

