

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 sales to more than 150 countries. The company has a strong production and marketing base in Europe. Yara has greatly extended its presence in North and South America, particularly in Brazil. It is also expanding its footprint in Australia, 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. In terms of agricultural solutions, Yara offers the market's most complete portfolio of mineral fertilizers and solutions for sustainable agriculture – covering all necessary nutrients for a wide variety of 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 Winter Cereal

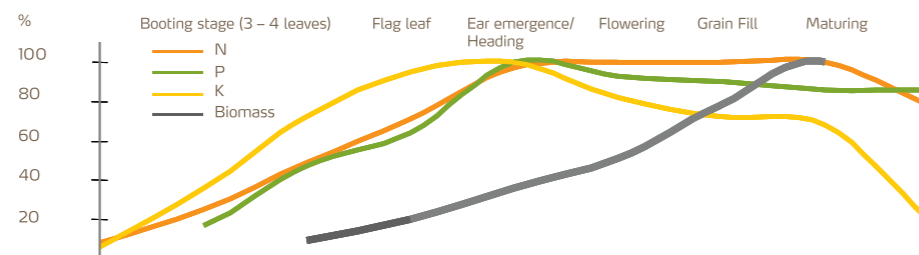
Timing and optimal application are crucial



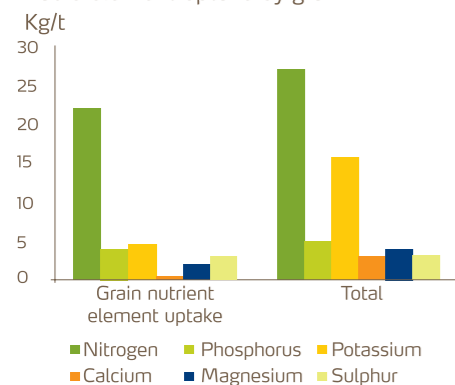
A number of variables impacting the application of plant nutrients

- Soil pH: Optimal 5 – 6,5 (KCl)
- Average annual rainfall: 200 – 600mm
- Carbon in soil: 0,5 – 3%
- Change in crop rotation systems
- Available plant nutrients in soil (representative soil sample)
- Uptake curves
- Growth stage

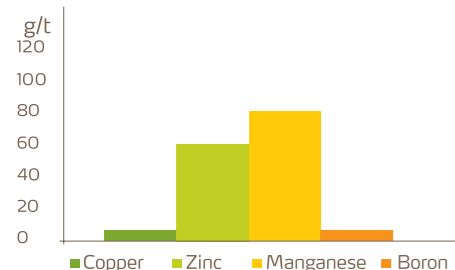
Application times for grain



Macro element uptake by grain



Micro element uptake by grain



Products at Plant / Sowing

Liquid	Band Placing 24N	Broadcast 20-45 N
	GeoFlo 32	GeoFlo 41
	GeoFlo 42	410(18)S
	Option: with TriPholate	

Granular	Band Placing	Broadcast
	Alpha 35	410(28)S
Alpha 357	411(31)S	
Alpha 36	Cura A41	
Cura A38		
Cura A395		
Cura A36		
	Option: with Procote (micro elements)	

Growth stage 5-6 leaves



Growth stage start flag leaf



Topdressing (30-60N)

YaraBela™ CAN-S
Amiplus S
Amiplus SS
Amiplus SS
Cura A443
Cura A433

Topdressing (20-30N)

YaraBela™ CAN-S
Amiplus SS
Amiplus S

This programme must be aligned with the rainfall management programme. Application quantities are determined by rainfall.

YaraVita™ leaf nutrition

3-4 leaf stage	Flag leaf stage
Mancozin	Mancozin
Coptrac	Bortrac
Zintrac	
Mantrac	
Bortrac	

Please contact your local agronomist for a customised leaf nutrition programme.

YaraVita™ micro elements play a key role during plant nutrition

Sufficient and balanced plant nutrition are key factors determining the yield, quality and profitability of grain production. To achieve success, it is important that essential nutrients are applied at the right time and in cost-effective quantities. These decisions must be based on a clear understanding of the role of each nutrient required during the critical stages of the plant's life cycle.

Key nutrients

Sufficient amounts of macro and micro nutrients play a key role in protecting crops against pests and diseases.

Nitrogen

This element plays a crucial role during production and it determines the quality of the grain. Uptake happens through ammonium-N and nitrate-N. The latter is preferred in most circumstances. Nitrogen promotes photosynthesis, chlorophyll synthesis, growth and protein synthesis. Nitrogen is very mobile in the plant and is critical during all phases up to ripening.

Phosphorus

This element plays a key role during the ripening of grain, photosynthesis, growth and fertility as well as genetic identification and respiration. Optimal phosphate is essential for root development. This element is critical during all phases.

Potassium

Potassium is available in the plant sap and it is important during the movement of nitrogen, photosynthesis and the transfer of carbohydrates. Potassium is essential for the optimal functioning of stomata, plant resilience and protein, and also resistance to drought stress during erratic climate conditions (temperature). Potassium is critical during all vegetative phases and during translocation of photosynthates to seed during later growth stages.

Calcium

Calcium is important for strong cell membranes, cell growth and protein formation. The element helps to ensure a balance of nutrients in the plant. It is critical at all stages.

Magnesium

Magnesium is essential to maintain chlorophyll synthesis, protein synthesis, the transfer of phosphate and seed quality. It is critical during most of the growth stages.

Sulphur

Sulphur is essential for chlorophyll synthesis and it serves as building blocks for the amino acids needed to form proteins. Sulphur is critical during all phases.

Micro Nutrients

Even though these are called trace elements, a deficiency in but one element can prevent the optimal uptake of other nutritional elements (which may be available in sufficient quantities).

Iron

Iron is essential for chlorophyll synthesis and healthy vegetative growth. It is critical during all vegetative growth stages.

Copper

Copper is needed for chlorophyll synthesis and the uptake of iron in plants. It is essential for certain processes during seed formation. This element is critical from germination to flowering stage.

Manganese

Manganese is essential for chlorophyll synthesis, photosynthesis and the activation of enzymes. It is critical during the vegetative phases also during flowering.

Zinc

Zinc is essential for enzyme activity during protein synthesis. It is critical during the vegetative growth stages up to grain filling.

Boron

Boron is important for cell division and growth, for the metabolism of growth hormones and for the uptake of calcium. It is critical during the flowering stage.

Molybdenum

This element is essential during the uptake of nitrogen and serves as catalyst to reduce nitrate and protein synthesis. It is critical during the vegetative phase up to grain filling.

The crucial role of nitrogen

Nitrogen plays a crucial role in crop protection. It helps to prevent plant loss, early infections, root and stem diseases, leaf diseases and aphid infestation.

Nitrogen management and fertilizer application must be aligned with rainfall (or irrigation) and factors such as changes in rainfall patterns, precipitation, soil



leaching properties, crop and cultivar differences, soil temperature, crop rotation system, slope, fertilizer placement and type of nitrogen carrier.

This advice forms part of our services to clients. This model is only efficient if combined with plant protection and nutritional programmes.

Critical stages during nitrogen uptake (Source: Auhammer, 1976):

