



**SQM**

# A range of physical granular mixtures

*that contain potassium nitrate  
as the main potassium source*

## **Qrop<sup>®</sup>** **mix** Phenological Stages

Qrop<sup>®</sup> mix formulas are made with high quality raw materials retaining homogeneous granulometry at all times.

The product range allows for large flexibility in terms of composition to satisfy the nutritional requirements of crops according to phenological stages. Qrop<sup>®</sup> mix formulas are low in chloride. Prilled potassium nitrate supplies nitric nitrogen with well known advantages for the crop.



**Homogeneous granulometry:**  
**250 SGN minimum**



**Based on potassium nitrate**



**N-NO<sub>3</sub> / N-NH<sub>4</sub>**  
**Well-balanced ratio for optimal crop performance**

**Qrop<sup>®</sup> mix**  
**Initial**

**Qrop<sup>®</sup> mix**  
**Development**

**Qrop<sup>®</sup> mix**  
**Production**

**Qrop<sup>®</sup> mix**  
**Post-Harvest**

**Qrop<sup>®</sup> mix**  
**Multipurpose**



## Nitrogen

Qrop® mix formulas contain nitrogen (N) as nitric nitrogen (N-NO<sub>3</sub>) and ammonium (N-NH<sub>4</sub>), designed to deliver an optimum balance for each targeted phenological stage. Nitric nitrogen is the preferred source of nitrogen for plants, which predominantly absorb nitrogen as nitric nitrogen. In cold soils, nitric nitrogen is absorbed by plant roots more rapidly and efficiently than any other N-source, because it is taken up without biological conversion driven by soil micro organisms and temperature, as is the case for ammonium and urea (ammonification and nitrification).

Nitric nitrogen in Qrop® mix formulas promotes the synergistic absorption of potassium, calcium, magnesium, copper, iron, manganese and zinc, while it antagonistically inhibits chloride absorption.

Nitric nitrogen promotes the synthesis of cytokinins, stimulating lateral growth, contributing to increased photosynthetic capacity for better yields. The high nitric nitrogen content in combination with the potassium and calcium supply of Qrop® mix formulas will lead to high quality agricultural produce with extended shelf life during storage.



## Potassium, calcium & magnesium

Potassium in Qrop® mix formulas is supplied by potassium nitrate, a highly soluble source of potassium that allows a synergistic and rapid absorption of both nitrogen and potassium at the same time. This source of potassium is low in chloride, preventing impairment of nitric nitrogen uptake by the roots caused by an antagonistic effect between chloride and nitric nitrogen.

Maintaining an adequate level of potassium in plants is essential for the survival of crop plants under environmental stress conditions, such as heat, drought, chilling, and high light intensity.

Both potassium and calcium, as supplied with Qrop® mix formulas, increase the plant's natural defense mechanisms by cell wall strengthening and the synthesis of defense compounds that protect against pests and diseases, beyond increasing fruit quality parameters like color, brix and shelf life.

All Qrop® mix formulas contain magnesium, 100% soluble in water, as an essential element for chlorophyll formation, photosynthesis and carbohydrate metabolism.



Characteristics	<b>Qrop® mix Initial</b>	Formula with high content of phosphorus to cover the demand of this nutrient, mainly in the stages of root formation and flowering periods.
	<b>Qrop® mix Development</b>	Formula with high content of nitrogen designed to satisfy crop demand during the vegetative growth stage.
	<b>Qrop® mix Production</b>	Formulas with high potassium content to be supplied in moments of maximum demand of crops such as fruit development and grain filling. Depending on the calcium (Ca) needs, a Qrop® mix Production alternative with moderate Ca content, as well as one with higher Ca content, is available.
	<b>Qrop® mix Post-Harvest</b>	Formula specially designed for perennial crops which will benefit from replenishing their nutrient reserves after harvest, as long as the crop is still actively taking up nutrients, resulting in an optimum start during the following season.
	<b>Qrop® mix Multipurpose</b>	Balanced formula that can be used during each growth and development stage. Contains a complete range of macronutrients.

## Specifications of Qrop® mix formulas

		Qrop® Mix formulas							
		N	N-NO <sub>3</sub>	N-NH <sub>4</sub>	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	CaO	MgO	SO <sub>3</sub>
Initial	10-20-10+12CaO+2MgO	10,1	6,5	3,6	20,3	10,2	12,3	2,7	11,1
Development	20-10-16+3CaO+2MgO	20,1	10,3	9,8	10,1	16,2	3,0	2,0	2,1
Production	15-0-30+4CaO	15,8	12,7	3,1	-	30,1	3,9	1,6	2,6
	14-0-23+13CaO	14,0	13,4	0,6	-	23,0	13,0	-	-
Post-Harvest	6-23-23+2MgO	6,6	1,2	5,4	23,4	23,9	-	2,1	10,9
Multipurpose	16-16-16+2CaO+2MgO	16,7	8,7	8,0	16,0	16,0	2,0	2,0	2,1

All Qrop® mix formulas are low in chloride (less than 2% Cl).

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