



# Tomato

## Naturally Balanced Nutrition in Every Granule

Experience higher yields and balanced fertility in tomatoes by providing the right nutrients at the right rate, right time, and right place for maximum return. Intrepid Trio is natural langbeinite, a unique mineral with three essential nutrients comprised of 21.5-22% potassium (K<sub>2</sub>O), 10.5-10.8% magnesium (Mg) and 21-22% sulfur (S) as sulfates, depending on grade.

Intrepid Trio, also known as Sulfate of Potash Magnesia, allows growers to apply an extremely low chloride potassium (less than 1.0-3.0% Cl depending on grade) and neutral pH fertilizer with the benefit of sulfur and magnesium in the same ratio in each granule. Intrepid Trio is also OMRI Listed and approved for organic farming.



Available in premium, granular and standard grades, Intrepid Trio blends well with other fertilizer materials for an even distribution of nutrients.

### Nutrient removal by tomatoes

Yield	N lb/ac	P <sub>2</sub> O <sub>5</sub> lb/ac	K <sub>2</sub> O lb/ac	Mg lb/ac	S lb/ac
20 tons/ac	120	20	160	11	14

(Source: North Carolina State University, 2008)

### When should Intrepid Trio® be applied?

Intrepid Trio should be incorporated into the soil in one application prior to transplanting so that potassium, magnesium and sulfur are available to the transplant immediately.



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### How does potassium (K<sub>2</sub>O) affect tomato plants?

Tomato plants must have adequate levels of potassium to positively affect the plant's sugar levels, fruit ripening and storage characteristics – all of which lead to improved fruit quality. In addition, increased levels of potassium have been shown to enhance carotenoids, like lycopene, which gives tomatoes their rich red color.

Tomatoes require more potassium than any other nutrient, and the demand is greatest during fruit bulking. Each ton of harvested tomatoes can require 6.3 to 8.7 lbs / K<sub>2</sub>O / acre.

Potassium deficiency in tomatoes can cause...

- yellow shoulder
- high levels of internal white tissue
- uneven ripening
- irregular shaped and hollow fruits
- decreased ripening

### What effect does magnesium (Mg) have on tomatoes?

Low magnesium content in a tomato plant adversely affects photosynthesis, the process that converts sunlight into usable energy for plants. Slowed or diminished photosynthesis leads to impaired growth, thus negatively affecting yield.

Heavy potassium fertilizer rates without a magnesium source can lead to a magnesium deficiency in the soil, as can applying high calcium liming materials on sandy, acidic soils where magnesium deficiency is most common. Applying a readily available magnesium fertilizer such as Intrepid Trio can meet the magnesium needs for a tomato plant throughout the plant cycle.

### How does the sulfur (S) in Intrepid Trio® benefit tomato crops?

Sulfur forms organic compounds in fruits and vegetables that enhance their flavor, while also aiding in the formation of amino acids and proteins in the plant. The sulfur in sulfate form as found in Intrepid Trio is the only form of sulfur readily available to plants. Sulfate-sulfur does not have to go through the oxidation process like elemental sulfur – thus pH is not decreased by the resulting release of hydrogen in the soil. This characteristic of the sulfur source in Intrepid Trio is critical, considering that optimum pH for tomatoes is 6.2 – 6.8. In contrast, other sulfur fertilizer sources can cause a reduction in pH on sandy, acidic soils, thus negatively affecting the crop.



- K<sub>2</sub>O 22%
- Mg 11%
- S 22%

### When will Intrepid Trio® be available to the tomato plant?

Intrepid Trio readily dissolves in the soil slowly, reducing the risk of leaching and providing long-lasting nutrients that are immediately available to the plant.

### Potassium treatment effect on yield

Application (lb K <sub>2</sub> O/ac)	Fruit wt. (oz)	Yield (tons/ac)
98 (MOP)	2.3	12.5
116 (MOP)	2.8	13.3
134 (MOP)	3.1	13.8
152 (MOP)	3.1	14.4
170 (MOP)	3.4	15.2
<b>170 (MOP+Sulfate of Potash Magnesia)</b>	<b>3.6</b>	<b>17.8</b>

(Source: Bose et al, 2006)

Intrepid Trio provides three essential minerals readily available as your crop needs them.



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