

December 2021

Magnesium fertilizer for orchards and open fields

Magnesium is an important plant nutrient component and is one of the macro elements that provide for plant nutrition. In terms of plant composition generally, the magnesium concentration in plants will be higher than phosphorus concentration, thereby underscoring its importance.

Magnesium serves as the central ion in chlorophyll molecules, as a component that activates enzymes in a variety of processes in the plant, such as sugar synthesis and solvent circulation.

Magnesium ions move freely within the plant, so those deficiencies are usually seen in mature leaves. Symptoms in mature leaves are caused by oxidative damage due to uncorrectable photosynthetic system failure.


Magnesium is absorbed from the groundwater solution as a positive ion, Mg^{2+} . Therefore, in clay-like soil, the rate of magnesium release into the groundwater solution is the factor limiting magnesium availability to the plant, rather than the overall amount of magnesium in the soil. In light soils with low clay content, the amount of magnesium in the soil will be accordingly lower.

Soluble magnesium available to the plant is practically not dependent on the pH level of the soil.

Several factors influence magnesium availability in the groundwater solution, the most significant of which are: Use of irrigation water with a low magnesium content. We usually get such water from melted snow and desalinated water.

Use of low magnesium water and effective fertilizing with potassium or calcium. The latter two are ions that are antagonistic to the absorption of magnesium, such that in high concentrations near the roots, effective magnesium absorption is very inhibited. In such a situation, there is an increased risk of emerging deficiencies.

How can we prevent magnesium deficiencies?



December 2021

Magnesium fertilizer for orchards and open fields

Magnesium is a bi-valent cation and is therefore attached quickly and strongly to clay; the result is that application of high quantities of magnesium in separate applications throughout the season won't be effective. In terms of magnesium application, we want to improve water quality; therefore, the optimal method to prevent magnesium deficiencies is to add a fixed, low concentration of magnesium at a level fitting the water quality, throughout the season. Our final goal is at least 25 ppm magnesium in the irrigation water.

Recently, at Gat Fertilizers we have begun to produce and market solid/soluble fertilizers in a variety of NPK formulations, with added boron and micro-elements containing magnesium at variable concentrations, by request. The formulations are easy, effective, and adjusted to season-long fertilization, according to the growth stage.

We invite you to contact the export team, to test irrigation water quality and adjustment of formulation for optimal, effective and easily applied fertilization.

Eran Ben-Yaakov, Agronomist

info@gatfertilizers.com

Sources:

Adjustment of desalinated water fertilizers, Yoram Eisenstadt, Field Service, Training and Professional Service Unit, Valleys District, December 2009.

Issues in Fertilization. Seven lectures by Prof. Uzi Kafkafi.