ZincSulphate Product Guide

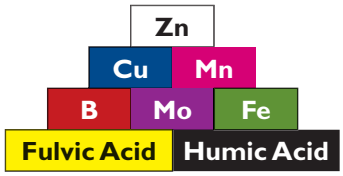
Buy quality or buy twice

Introduction

Why use Zinc Sulphate? It is completely ***water soluble****. Plants drink their food, they do not chew it! Zinc deficiency is a wide-spread problem in agricultural soils worldwide. It is estimated that 50% of agricultural soils contain low levels of available zinc, mainly due to high soil pH, low soil moisture and low organic matter. High leaching capacity soils (e.g., sandy soils or those which are highly acidic) can at times lack zinc altogether. If this problem is not taken care of, zinc deficiency will cause significant decreases in a crop's productivity and nutritional quality. Yes there are areas with which are not prone to zinc deficient soils, but still zinc fertilization is necessary to replenish zinc removed by high-yielding cultivators.*

Ref: Zinc in soils and crop nutrition, BJ Alloway, 2008 • Enrichment of cereal grains with Zinc, I Cakmak, 2008

HIERACHY OF IMPORTANCE



JUSTUS VON LIEBIG'S LAW OF THE MINIMUM

Justus Freiherr von Liebig was a German chemist who made a major contribution to agriculture in the 19the century. Von Liebig's Law of the Minimum states that yield is proportional to the amount of the most limiting nutrient. Therefore, if the deficient nutrient is applied, yields may be improved to the point that some other nutrient is needed in greater quantity than the soil can provide, and the Law of the Minimum would apply in turn to that nutrient.

Due to the centuries-long use of animal dung for fertilisation, many early scientists believed that the nutrients needed by plants were organic rather than mineral. Liebig proved this theory wrong in research that showed that plants need mineral elements from the soil, carbon from carbon dioxide in the air and hydrogen and oxygen from water.

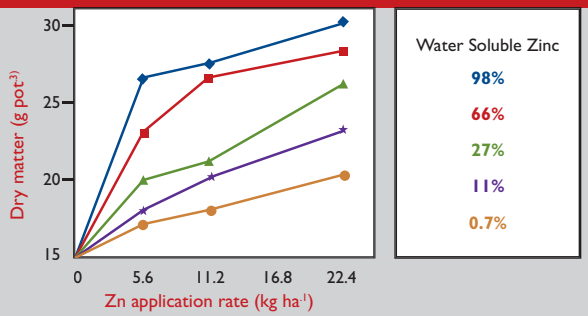
• Sources: Phillip Barak, University of Wisconsin, www.eurochem.ru; Wikipedia

EFFECTIVENESS OF ZINC AS FERTILIZER

Several factors and site-specific conditions influence the effectiveness of zinc as fertilizer. These include: the concentration of zinc, cost, impurities (e.g. presence of contaminants such as cadmium), water solubility, soil type and method of application. Increasing the percentage of water-soluble zinc in fertilizers having the same amount of total zinc clearly enhanced dry matter production of corn grown in soils with high pH.

• Zinc Fertilizers JJ Mortveldt and RJ Gilkes, 1993

APPLICATION GUIDE

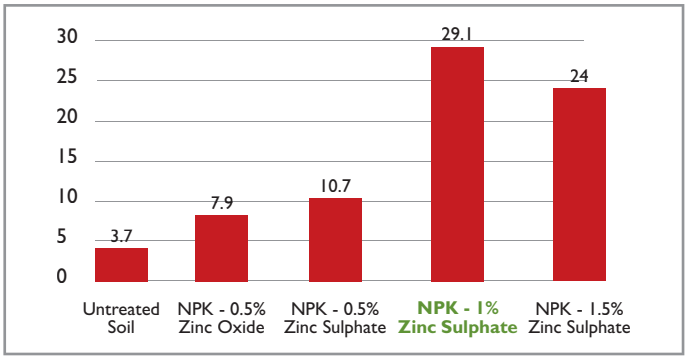


Dry matter production of corn plants grown in a soil (pH: 7,4) with 5 different Zn fertilizers ranging in water solubility of Zn from 0.7% to 98%.

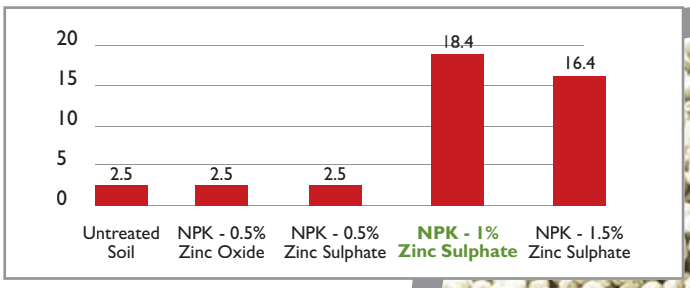
• Redrawn from Westfall et al

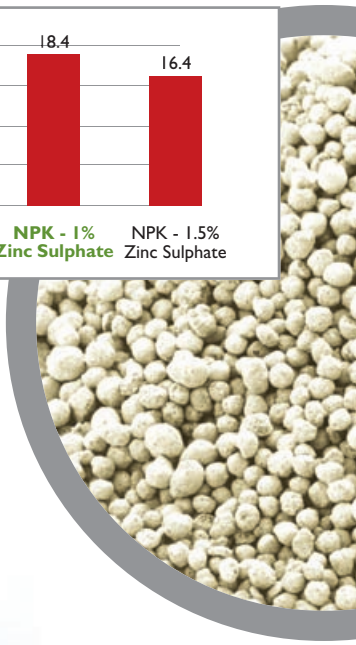
PRODUCT SPECIFICATIONS

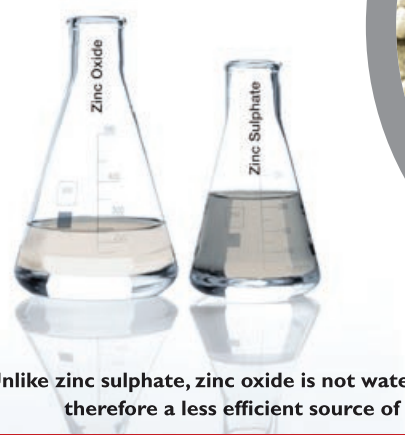
THE INFLUENCE OF DIFFERENT FERTILISERS ON THE ROOT MASS OF MAIZE. *Root mass after 6 weeks (g) at a pH of 6.5*



THE INFLUENCE OF DIFFERENT FERTILISERS ON THE ROOTMASS OF GREEN BEANS. *Root mass after 6 weeks (g) pH of 6.5*







Unlike zinc sulphate, zinc oxide is not water soluble. Zinc oxide is therefore a less efficient source of zinc for plants.

CONCLUSION

The results clearly indicate the importance of water-soluble zinc in fertilizers, with the percentage of soluble zinc serving as a good indicator for agronomic effectiveness. Decisions for purchasing a Zn-containing fertilizer should, therefore, be based not only on the total amount of Zn, but also on the percentage of water-soluble Zn as well as the other key factors like cost, soil type and method of application. ZNSO4 is the most common form of zinc fertilizer used, and it has shown excellent results in all soil types.

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