

Features



TOP MICRONUTRIENTS

Zinc treatments good for corn, beans

This is the fourth article in a series about micronutrients and their significance for crop growth

BY JAY PETERSON

Zinc is one of the top five micronutrients for crop production in Western Canada. Luckily, most cereal and oilseed type crops are not extremely susceptible to zinc deficiency. However crops such as corn, pinto beans and sorghum can be affected greatly by a zinc deficiency. These crops can have a good reaction to replacement zinc, especially when yield potential is high.

Plants need zinc as part of enzyme activation for protein synthesis. Zinc is also very important in the production of auxin, a plant growth hormone. And it helps with consumption and regulation of sugars within a plant, and in proper root development. Zinc can also reduce the time for seed and stalk to mature. It seems that most micronutrients are involved in the proper formation of chlorophyll and carbohydrates and zinc is no exception.

WHAT DOES DEFICIENCY LOOK LIKE?

Deficiency symptoms show up early in plant development. Zinc-deficient corn will have a white translucent area on both sides of the midrib of the leaf. This area is near the base of the leaf and will not extend all the way to the tip. On occasion, these areas will exhibit reddish brown colouring.

Lack of zinc can also slow internode development, which results in a stunting of young plants. Zinc-deficient pinto beans will exhibit this symptom. Newer leaves will yellow and older leaves will brown.

Leaves will also curl downward and take on a crinkled appearance. In beans, lack of zinc can also affect the pod set, hurting yields.

WHAT CAUSES DEFICIENCY?

Deficiency often occurs in eroded areas. These can be areas of environmental erosion — wind

positive response in both plant health and yield that year. Zinc can be applied in the three regular ways for fertilizer placement: foliar application, broadcast application or in-row banding.

You can broadcast zinc at 16 or more pounds per acre. In-row recommendations are up to eight pounds per acre.



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or water — or man-made factors that reduce topsoil such as leveling and heavily irrigated areas. Zinc deficiency is not usually seen throughout entire fields.

Zinc can also come from organic matter, so soil that has been heavily tilled with low organic matter content can show zinc deficiency. Alkali and sandy soil types also tend to have lower available zinc, as do soils very high in phosphorous. In the same manner if plants have a lack of nitrogen, this too can affect the ability of a plant to properly access zinc in the soil.

HOW TO APPLY ZINC

If you detect a zinc deficiency early in season through physical characteristics or soil testing, an application of zinc can show a

One heavy application of zinc broadcasted over a needed area can correct a deficiency for many years. This may not however be applicable for lower till operations, and in row banding can create the same result in a year.

You can get fertilizer products containing zinc oxides, sulphates and chelates. Oxides seem to work best for broadcasting operations, sulphates for in row, and chelates for foliar applications because they are safer for the leaf.

Zinc fertilizer can be mixed with a fungicide during the year to show results and save on an extra fertilizer application. Like all micronutrients, crops don't need much zinc to meet their needs, but zinc still needs to be present for proper plant health.

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