



micronutrients matter

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Soybean crop trends
Key micronutrients needed

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Getting it right with DDP
Our recommendation

KEY FERTILIZATION STRATEGIES FOR SOYBEANS PRODUCTION

SOYBEANS

Crop Trends

Sufficient levels of micronutrients are required to attain today's record-breaking soybean yields. Because this increase in yields is potentially depleting the soil of micronutrient reserves, a strong fertility program that includes micronutrients is necessary to enhance crop growth throughout the season and reach optimal yields at harvest.

Key Micronutrients

Manganese deficiency is one of the most commonly encountered nutrient deficiencies in soybeans. Soybeans need manganese for:

- Photosynthetic and enzymatic activity
- Improving crop establishment
- Increasing grain quality

Deficiencies typically vary across the field and can be recurring due to soil factors. Soybeans are generally considered to be responsive to manganese fertilizer when the application provides adequate nutrient uptake.

Zinc deficiency is the most common micronutrient deficiency in crops around the world, and small amounts of zinc fertilizer have been shown to increase yield considerably. Adequate zinc levels are necessary for proper growth, development and reproduction in soybeans.

Factors Impacting Nutrient Availability

Manganese availability can be limited in soils:

- Prone to leaching or drought
- High pH
- With high levels of calcium, iron or phosphorous
- High in organic matter

Visual manganese deficiency symptoms in soybeans include dark green veins with light yellow to white interveinal leaf tissue, particularly on newly emerged leaves.

Zinc deficiency is most commonly found in soils with:

- Coarse texture
- High pH
- High phosphate levels
- Low organic matter

Visual zinc deficiency symptoms include chlorosis of leaves on the mid to lower section of the leaf that can lead to necrosis, as well as shortened stems.

Important Considerations for Micronutrients

While micronutrients are usually only required in small amounts, they are essential for reaching optimal yield potential. Foliar micronutrients may be part of many growers' nutrient management plans, but waiting to see a visual nutrient deficiency in soybeans means yield has already suffered – and timing foliar applications can be tricky. A proactive soil application can add flexibility, be economical and provide the base nutrition needed to promote early season growth and aggressive biomass accumulation – essential to profitable soybean yield production.

It's also important to consider the 4R's of Nutrient Stewardship when choosing your micronutrients: using the right source, at the right rate, ensuring the right placement and applying at the right time.

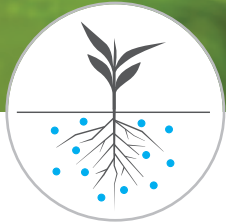


wolftrax™
INNOVATIVE NUTRIENTS

Introducing Wolf Trax DDP Nutrients

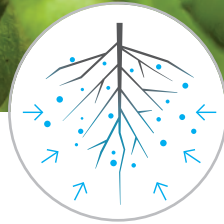
Wolf Trax DDP Nutrients are designed to evenly coat dry fertilizer blends, which results in improved distribution of the nutrient in the field and more points of interception as compared to traditional granular micronutrients.

UNIQUE FEATURES OF WOLF TRAX DDP NUTRIENTS:



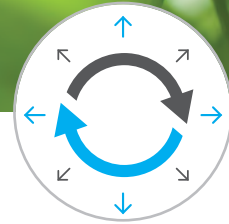
EvenCoat™ Technology

Nutrients thoroughly coat each and every granule of a fertilizer blend. This results in a blanket-like distribution of the nutrient across the field, close proximity to plant roots and early plant uptake. Once applied, the DDP Nutrient will not come off during transport or handling.



PlantActiv™ Formulation

Wolf Trax DDP Nutrients are chemically and physically designed for better, earlier availability to plants. The particle size is ideal for plant uptake, and the unique formulation helps nutrients avoid soil tie-up and remain plant-available.

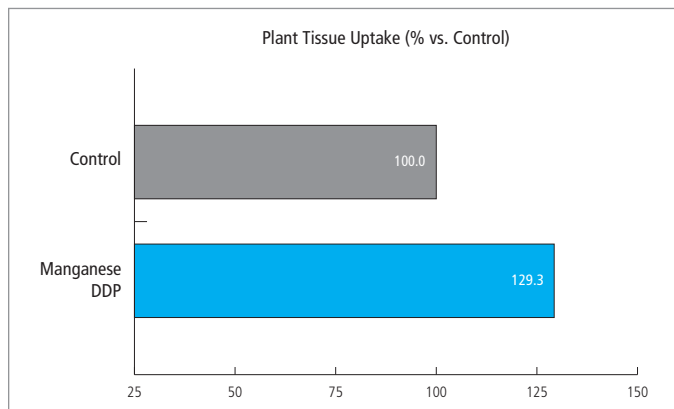


DUAL ACTION™ Availability

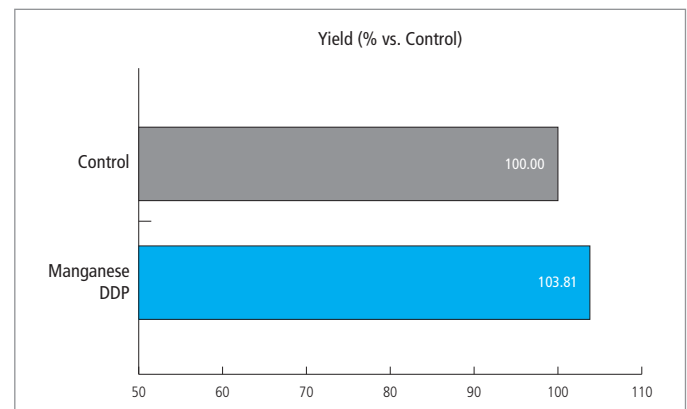
With Wolf Trax DDP Nutrients, plants get the nutrition they need, when it's needed most. The DUAL ACTION Availability means each DDP Nutrient is formulated with at least two forms of the mineral, providing immediate nutrient uptake by the plants, as well as extended feeding over time.

Wolf Trax DDP Nutrients are Field-Proven

Plant tissue uptake of manganese increased by 29% in soybeans treated with a soil application of Wolf Trax Manganese DDP.



Applications of Wolf Trax Manganese DDP has increased soybean yield by over 3% when applied as a fertilizer coating:



Results based on percent increase versus the control treatment without Wolf Trax Manganese DDP; data collected from multiple sites over multiple years.

Recommendations:

Applying Wolf Trax Manganese DDP and Wolf Trax Zinc DDP at planting is a smart approach to ensuring adequate nutrition at important early growth stages due to improved field distribution and many more feeding sites than granular micronutrients can offer.

For more severe deficiencies, a multi-feed approach of soil and foliar applications throughout the growing season has positively impacted soybean growth and yields. Research by Purdue University shows that a multi-feed approach including a pre-plant soil application of Wolf Trax Manganese DDP followed by an in-season foliar application of Manganese DDP provided the best yield results, and the best returns for soybeans.

Dealer Comments:

Helping you make informed decisions on the positive returns from using micronutrients.



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