

Wolf Trax DDPs Improve Potato Yield, Quality and Return



FIELDINSIGHTS

Your Connection to the Field

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In 2014, a study was conducted in Washington to evaluate the performance of Wolf Trax Zinc DDP and Boron DDP in potato production. The results of this study showed that micronutrients, particularly Wolf Trax DDPs, improved yield and quality of potatoes. Wolf Trax DDPs increased the amount of US #1s by 11% and 26% over the Grower Standard with and without granular micronutrients, respectively. As a result, Wolf Trax DDP's increased gross revenue per acre by \$159 and \$224 as compared to the Grower Standard with and without granular micronutrients, respectively.

BACKGROUND

Potatoes have high nutrient requirements (Table 1) and are prone to micronutrient deficiencies, which can reduce plant growth, yield and quality. Boron deficiencies, for example, can reduce tuber quality. Micronutrient management is particularly important in potato production, as potatoes are often planted into cold and wet soils; sandy soils; or soils with alkaline pH - all conditions which reduce micronutrient availability.

Table 1. Nutrient uptake (vines & tubers) for tuber yield of 500 cwt/acre
Uptake pounds/acre

Nitrogen (N)	214	Zinc (Zn)	0.18
Phosphorus (P)	28	Manganese (Mn)	0.07
Potassium (K)	240	Iron (Fe)	1.32
Calcium (Ca)	7.4	Copper (Cu)	0.10
Magnesium (Mg)	14.7	Boron (B)	0.06
Sulphurs (S)	22.0		

1. <http://www.extension.umn.edu/agriculture/crops/potato-fertilization-on-irrigated-soils/#nutrient>

Wolf Trax DDP Nutrients feature three proprietary technologies that ensure effective delivery of nutrition:



EvenCoat™ Technology

Fertilizer coating technology allows for blanket-like distribution and more points of interception for young roots.



PlantActiv™ Formulation

Physically and chemically designed – the Wolf Trax DDP particle size is optimum for plant uptake.



FlexUse™ Application

In fields with severe deficiencies or crops with high demand, DDP Nutrients can be applied multiple times in a season.

Wolf Trax Innovative Nutrients are unique, research-tested and field-proven micronutrient and secondary nutrient fertilizers. By making nutrients more accessible to plants when they are needed most, Wolf Trax products simplify nutrient management, boost crop performance and enhance the return on farmers' fertilizer investment.



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METHODS

In 2014, a field study was conducted by Holland Agricultural Services in a commercial field of Umatilla Russet potatoes near Othello, WA in the central Columbia Basin. Whole certified seed potatoes, 2 to 2.5 ounces in weight, were hand planted in 34 inch rows on six inch intervals into an alkaline, pivot irrigated silt loam field. Treatments were set in a randomized complete block design with four replications. Yield, grade evaluations and economic assessments were performed for all treatments. Data was analyzed using general linear model ($P \leq 0.10$) and treatment values were separated using Fisher's-protected least significant difference tests.

Treatments

1. Grower Standard N, P, K, S with no micronutrients
2. Grower Standard N, P, K, S with granular micronutrients (added 7 lbs. actual Zn/ac as zinc sulfate and 1 lb. actual B/ac as granular boron)
3. Grower Standard N, P, K, S with Wolf Trax Zinc DDP (0.5% w/w) & Boron DDP (0.2% w/w)

RESULTS

While both micronutrient treatments increased yield and quality, Wolf Trax DDP's optimized yield and increased the amount of US #1 potatoes by 11% and 26% as compared to the Grower Standard with and without granular micronutrients, respectively (Figure 1). Similarly, while both micronutrient treatments increased the amount of US #1 potatoes greater than 6 ounces, Wolf Trax DDP's resulted in the greatest size improvement, with 6% and 37% more US #1 potatoes greater than 6 ounces as compared to the Grower Standard with and without granular micronutrients, respectively (Figure 2). Under the conditions of this study, micronutrient treatments increased gross revenue per acre. The greatest improvements were observed in potatoes treated with Wolf Trax DDP's, which increased gross revenue by \$159 and \$224 per acre as compared to the Grower Standard with and without granular micronutrients, respectively (Figure 3). Through increasing quality and size of potatoes, application of Wolf Trax DDP's has the potential to improve the marketability of the potato crop.

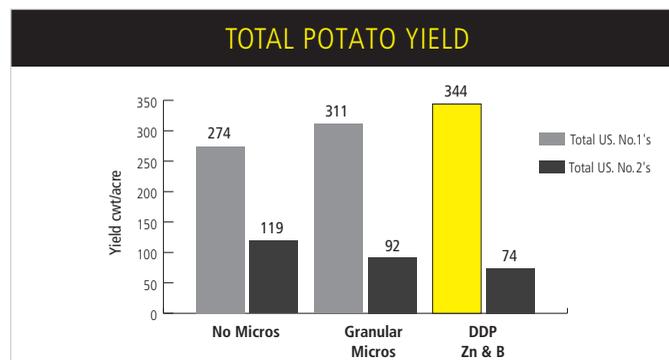


Figure 1. Effects of Wolf Trax DDP fertilizers on total potato yield. At $P < 0.10$, no statistical difference was seen.

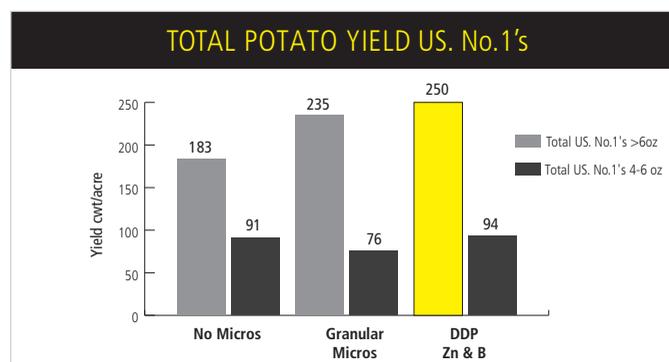


Figure 2. Effects of Wolf Trax DDP fertilizers on potato size. At $P < 0.10$, no statistical difference was seen.

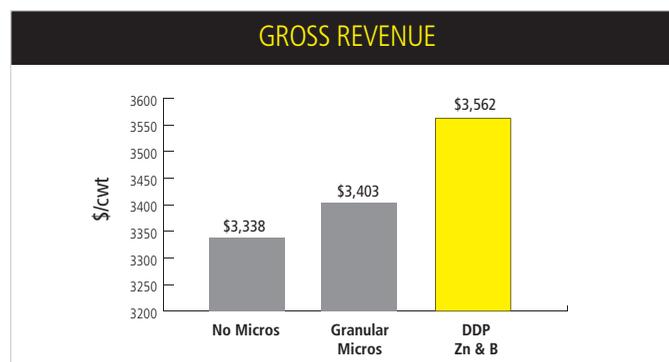


Figure 3. Gross return per acre, based on \$8.50 per cwt potato price

SUMMARY



The results of this study indicate that micronutrients can have a big impact on potato yield and quality, and therefore should not be overlooked. While it is important to identify the key micronutrients for the crop (in this case, zinc and boron), it is also important to select the right micronutrient source. Wolf Trax DDP's can improve grower returns per acre and allow for several operational efficiencies by reducing the volume of fertilizer needed to be stored, blended and applied to the field. This combination of agronomic and operational benefits makes Wolf Trax DDP's a good fit for both the grower and the dealer.

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