



How useful is zinc solubility testing for soil-applied micronutrients?

The benefits of Wolf Trax DDP Micronutrients as a fertilizer coating:

- Innovative, patent protected technology
- Superior application because it's distributed throughout 100% of the fertilizer blend
- Improved uptake with the unique Dual Action™ formulation
- High-analysis powders means less to handle and store
- High-quality, low heavy metal content makes it safer to workers and the environment
- Guaranteed by the Growing Forward® Guarantee

Some micronutrient suppliers use solubility tests as proof of performance and quality for soil-applied micronutrients. In other words, they use water solubility of micronutrients as a proxy for plant availability. Unfortunately, it's not that simple. Following is a discussion with Mark Goodwin, Wolf Trax® Director of Research and Development:

Q. What is the water solubility of Wolf Trax 62% Zinc?

A. Wolf Trax 62% Zinc is over 80% water soluble (50.64% of the 62% of the zinc is in a water soluble form). It is generally accepted by both University and industry that a minimum of 40-50% water solubility is required for the micronutrient to be a readily available nutrient source.

Q. So what does this mean?

A. All Wolf Trax DDP® (Dry Dispersible Powder) micronutrients have a unique Dual Action™ formulation, which combines both immediate and extended availability, guaranteeing that the micronutrient is available at critical growth stages. This is why you see the above results where some of the micronutrient is in a water soluble format, while the rest will be absorbed at a slower rate, thus giving that extended availability.

Q. What test did you use to get your result?

A. Since Wolf Trax DDP Micronutrients are formulated products, the traditional water solubility test (AOAC Method 965.09) does not give accurate results. Florida State Department of Agriculture has recognized this limitation and has put together testing protocols which address this, as well as other concerns. Our results use this testing protocol (FM833), which can be found at <http://www.flaes.org/pdf/FM-833.pdf>. A complete overview of recommended testing methods can be found on the Wolf Trax website at http://www.wolftrax.com/_uploads/PageContent/documents/water_solubility_ddp_testing.pdf.

Q. Why is Wolf Trax Zinc DDP better?

A. Water solubility is not the only factor affecting plant availability. Water solubility tests conducted by labs do not take into consideration other important factors in plant availability in a farmer's fields, such as how evenly it is spread across the field, or proximity to plant roots.

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Micronutrient distribution in the field has to be managed. Many micronutrients, like zinc sulphate, are denser than the N, P and K in the blend. High bulk density means they start to fall to the bottom of the load once it gets on the truck to go to the farmer's fields. In a recent trial, two fertilizer blends of urea and MAP and granular zinc and boron were sampled from the top, middle and bottom of the load after travelling twelve miles on both gravel and pavement. Blend analysis showed boron levels to vary by 36% while zinc sulphate varied by 50%. This test showed the blend that the blender operator works so hard to achieve may not be the same blend that hits the farmer's field.

Another issue that affects plant availability is proximity to plant roots. Typically, granular micronutrients make up less than five percent of the final fertilizer blend. When you combine this small amount of granules of micronutrient in the blend with the above issue of the heavier micronutrient settling out as the blend travels to the field, the chances that each and every plants roots will have access to this micronutrient is greatly diminished.

Wolf Trax Zinc DDP coated onto fertilizer removes both of these concerns. Testing has shown that fertilizer coated with Zinc DDP moving from the blender to the truck and then to the applicator showed variability of less than 3%. In addition, since a small amount is applied to every macronutrient granule which is then evenly distributed throughout the root zone, Zinc DDP provides up to 50 times the interception points for roots to access micronutrients compared to traditional granular micronutrients like zinc sulphate.

Q. Will Wolf Trax Zinc DDP raise my soil test levels?

A. Wolf Trax Zinc DDP is designed to feed your current crop, not the soil. The application strategy of Wolf Trax DDP Micronutrients is to evenly apply the needed amount of micronutrient for that crop in a usable form. Further, the Wolf Trax DDP formulation is specifically designed to protect against tie up in the soil. In other words, Wolf Trax as a fertilizer coating delivers the right amount of micronutrient directly to the plant's roots in an available form, at the right time. And the best indicator of plant availability is plant uptake as measured by tissue tests. Wolf Trax has extensive tissue test results to prove this, which can be accessed at www.wolftrax.com/ddp_research.

You and Wolf Trax....Growing Forward® together.

For more information on the Wolf Trax DDP family of Innovative Micronutrients, please call 204-237-9653, or visit us at www.wolftrax.com.