



Knowledge grows

toppotato
by Yara



Micro Time!

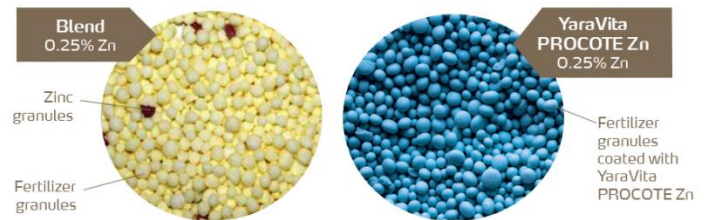
Micronutrients are an essential part of a successful potato crop nutrition program. Micronutrients are associated not only with normal plant growth development and yield, but they also play vital roles in plant health and crop quality. For example, zinc (Zn) is associated with root and shoot elongation, vascular system development and greater leaf size. Manganese (Mn) and copper (Cu) are necessary for photosynthesis, and boron (B) aids in calcium translocation and helps maintain a balance between sugars and starch and also plays a role in cell wall strength very similar to Ca. In addition to these physiological roles, Zn, Mn, and Cu are key to the potato crop's phytoalexin (auto immune) system for promoting disease tolerance.

Many soils are low in micronutrients and it is common to add Zn, Mn, Cu, and B into dry fertilizer blends applied pre-plant or at planting. Common options for micronutrients involve applying them as dry sulfates such as ZnSO₄ or MnSO₄. The rate that the micronutrients are applied in the blends is a small percentage compared with the volume of the entire blend. Due to the relatively small amount of micronutrients, varied granule size and density, segregation often occurs resulting in uneven distribution of the micronutrients in the blend and across the field which translates to inefficient feeding by the crop.

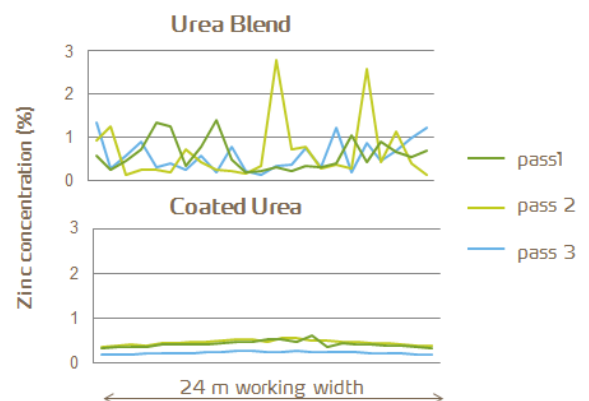


Poor quality blends segregate during handling

Even in the case of perfect applications, micronutrient granules are spaced too far apart to be readily taken up by the potato roots. Potatoes have a fibrous root system that is mainly concentrated in the top twelve inches of the soil, compared with cereals where the root system can go four feet down. As a result of this somewhat limited root system, potatoes often are unable to extract nutrients from the soil - especially nutrients that are unevenly distributed. For example, it's common to add 11 pounds of 36% zinc sulfate to potato fertilizer blends. Each pound of zinc sulfate contains about 25,000 granules. That means that even if a broadcast application is perfect, there are only about 275,000 granules of zinc sulfate spread across an acre (43,560 square feet) resulting in about 6 granules per square foot. Root interception and diffusion account for 70% of Zn uptake and six feeding sites per square foot simply may not be enough to satisfy the crop's needs.



But what if we could increase the feeding sites? What if each granule in a blend was a feeding site for a micronutrient? Using the above example, a 500 pound per acre broadcast fertilizer application on potatoes would deliver 12,500,000 granules of fertilizer per acre resulting in 287 feeding sites per square foot, and for the zinc example, providing almost 50 X more feeding sites. Efficiency would obviously increase resulting in a healthier crop. This is where YaraVita[®] PROCOTE[®] excels. PROCOTE is Yara's brand of oil based suspension micronutrients specifically formulated to be sprayed onto dry fertilizer blends. Fertilizer coated with YaraVita PROCOTE can help ensure a more even application of nutrients across a field. In addition, the fertilizer reactions in the soil increase the availability of the micronutrients for added benefit.



In addition to the obvious agronomic benefits, PROCOTE treated fertilizer helps with fertilizer handling, too. PROCOTE helps with human exposure issues to fertilizer by controlling dust, a major concern, especially when filling planters and spreaders. PROCOTE fertilizer blends also have improved flowability through application equipment compared with standard dry blends.