

For Sustainable Farming - 4/2021

Fortify your seeds with Tracegrow fertilizers

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In this month's issue, we will look into the benefits of seed coating and how zinc and manganese from Tracegrow's ZM-Grow can give your crop a strong start in the coming season.

Using Tracegrow fertilisers throughout the growing season

The pandemic afflicting the world has served to highlight the value of clean, traceable food and the demand for continuously improving crop yields with lower costs. Improving farming efficiency with sustainable and low-carbon solutions ensures that today's increased yields are achieved without sacrificing the environment or future growing seasons. To help meet this goal, Tracegrow offers recycled micronutrient products made with minimal impact to the climate.



Since ZM-Grow's release, it has been adopted for application methods where it can counteract nutrient deficiencies in the very beginning of the plants' growth: in seed coating and in fertilizer blends. This has caused a substantial increase in Tracegrow's deliveries for blenders and seed dressers. ZM-Grow and ZMC-Grow are mostly applied through foliar application, the single most efficient and fastest way of correcting micronutrient deficiencies for maturing crops. However, they are now also used in various specialty blends and applied directly onto the soil for early nutrition. Giving the crops an initial nutrient boost makes sure they get the best possible growth and root development early on, well before deficiencies are usually even noticeable.

The topic of this month's issue, seed coating, is a great way fortifying early growth and germination and helping the crop to grow and flourish even in less-than-optimal conditions.

What are the benefits of seed coating?

Seed coating acts as a very cost effective and precise primer for growth for seeds, introducing the nutrients right where you need them at the start of the seed's germination. Applying nutrients early and directly to the seed improves seeding rate and helps growing more substantial and resilient crops. This is great, both for farmers from getting a great return with a relatively small additional investment for their seeds, but also for the environment as nutrients used in seed coating are used precisely and efficiently, reducing the overall amount of fertilizers needed for effective plant nutrition.

Why are zinc and manganese essential for seeds?

Zinc deficiency is one of the most common causes for decreased crop yields around the world. As a key nutrient involved with for many of the essential processes in plants, such as the reproductive processes of seeds, sufficient concentrations of zinc can help produce higher crop yields in zinc deficient soils, increase the crops' tolerances to abiotic stress (extremes of temperature or moisture) and improve the seeds' overall vigour.

Adding manganese helps the plant to grow more robust and helps it to manage water more efficiently,

making it more resistant to drought. A very common symptom of a manganese deficient crop is that it appears wilted compared to sufficiently fertilized crops. As a result of becoming more robust and resistant, fewer seeds are lost due to environmental issues such as winter kill or drought. This in turn improves the overall seeding rate, saving resources by maximizing the potential of each individual seed.

Dressing the seeds with micronutrients is also a great way of minimizing the risks involved with early planting as the seeds are made hardier with the addition of zinc and manganese. By sowing the seeds as early as possible the crop will have more time to mature and produce a more complete crop. However, early sowing is much more likely to succeed specifically with seeds coated with micronutrients, as the seeds are much more likely to survive the colder and more humid environment.

Using ZM-Grow to dress your seeds

ZM-Grow is a recycled zinc-and-manganese rich nutrient solution that has excellent results in germination tests and has good mixing properties with most crop protection products. It is an excellent source of zinc and manganese for most crops like cereals and maize.

96% germination efficiency on spring barley (RTG planet)

High compatibility efficiency with industry standard fungicides, such as Redigo Pro by Bayer

It can easily be used in conjunction with industry standard protective coatings, biostimulants, fungicides (Redigo Pro), and insecticides which are often first mixed together and then applied simultaneously with a continuous seed treater. Because ZM-Grow is a liquid solution, it can also easily be used as a separate treatment in layered coating processes (e.g. with a rotary batch treater), where ZM-Grow is applied onto the seed as a film of nutrient solution.

Because ZM-Grow is a 100% sulphate solution, it is highly soluble and has a very low pH of 3,9. This helps the nutrients to be utilized by the plant more freely. Additionally, ZM-Grow's low salt index means that it does not interfere with germination.

As an additional benefit of being a liquid solution instead of a milled solid or powder, there are no issues with dusting. The solution sticks to the seeds without needing separate adhesive or anti-dusting agents and no nutrients are not wasted via dusting during dressing, handling, or sowing.

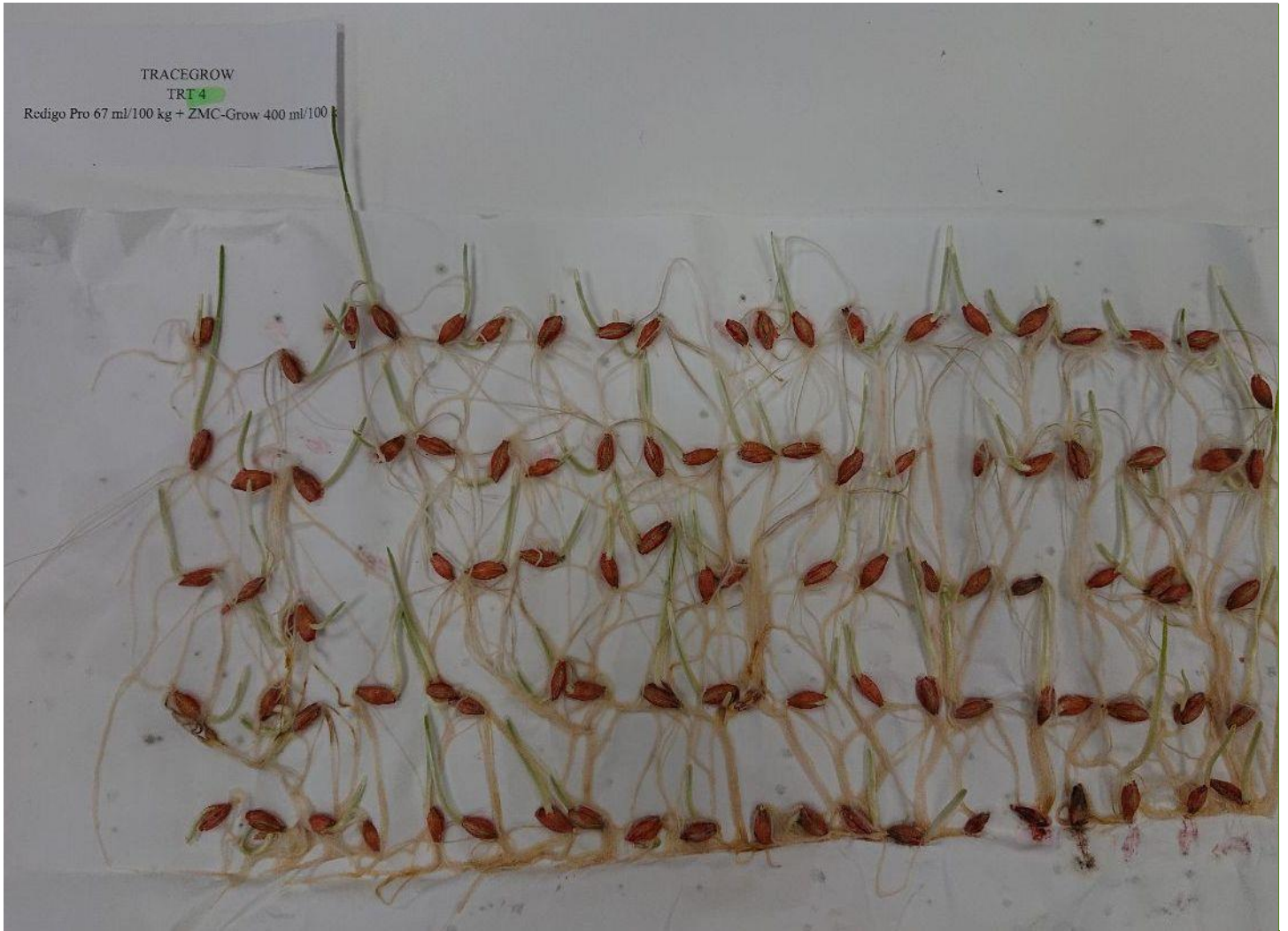
[Introduction on coating seeds with micronutrients](#)

Germination test results for Tracegrow's products

Tracegrow has also carried out germination tests to confirm seed germination and compatibility with an industry standard fungicide, Bayer's Redigo Pro. The seed variety used in the tests was spring barley, RTG Planet.

You can see the seed treatment report by the Västankvarn experimental farm from our [website](#).





ZMC-Grow used with Redigo Pro for a germination efficiency of 97,5%

Seed coating instructions for ZM-Grow:

Firstly, make a small-scale test (jar test) to confirm compatibility of all products to be used in the coating. A typical dose of ZM-Grow is approximately 2-4 L per 1000 kg of seed, and the combined amount of coating chemicals is typically somewhere between 3-5 L. It is advisable to avoid exceeding 5L per 1000 kg of seed to prevent early germination from applying too much moisture onto the seeds.

For further advice on using ZM-Grow, [get in touch with us](#).

[ZM-Grow product page](#)

A balanced nutrition strategy for increased yields



A well balanced and proactive crop nutrition program from sowing to harvest ensures a robust, full crop.

Seed dressing is a great step in making sure your crops get the best possible start for their growth. However, further micronutrient fertilization later in the season is essential to ensure the crop receives a balanced supply of nutrients during its growth. Especially with severely zinc deficient soil, a recommended fertilization strategy would be to combine the initial application of micronutrients, first as a seed coating with an added foliar application later in the season. Overall, the best grain yields have been shown to be reached with the combined application of zinc with the combine use of all three application methods: seed coating, through the soil, followed by foliar spray.

If you wish to learn of any of the abovementioned application methods, get in touch with us through our website at: tracegrow.com/contact-us.

Sources:

[White paper: Short introduction about coating seeds with micronutrients](#)

<https://www.researchgate.net/publication/226577796> Enrichment of cereal grains with zinc Agronomic or genetic biofortification