

WHITEPAPER

Improved plant resilience and dry matter content

Potato field trial with Intra Eco Shield

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The potato is an immensely popular product and therefore the top of most important food crops in the world. Over 4.000 varieties of potatoes exist, and a major part of the commercial varieties are used to produce French fries and crisps. Potatoes are cultivated outside in the open field and hence the plants must be fierce and strong. Potato plants must deal with wind, insects, heat, and sunlight thereby must perform like top athletes in the meantime.

Using Intra Eco Shield, the plants will have extra support and will be more resistant to these stressful conditions. In the Zhetysu region of Kazakhstan lies a 10-ha potato field where trials are performed using Intra Eco Shield with impressive results.

Intra Eco Shield creates a vital defence

Intra Eco Shield improves plants' strength by creating a natural shield in the outer cell walls of the plants. It is a product based on having a unique liquid mixture based on plant-available silicon; it supports plants' tissues for a better-balanced uptake of nutrients. Intra Eco Shield ensures the formation of strong and healthy crops with lower production losses and higher yields.

Trial set-up

The variety of potatoes used in this trial is specifically meant for the production of crisps. The trial in Kazakhstan started at the end of April and was harvested at the beginning of September. In these regions and at this time of year, temperatures can reach above 44 degrees Celsius. A total of five foliar applications of 250ml/ha Intra Eco Shield were applied, and the foliar applications were combined with other standard fertilizers, fungicides, and herbicides.

Results before potato harvest

Due to the very sunny weather and attacks of the Colorado beetle, the plants got damaged by the sunlight and heat. Plants had developed lesser and damaged leaves, and no big vibrant bushes (**figure 1**). Plentiful challenges were present for the grower in this season. The field was treated only four times with Intra Eco Shield when the photos were taken.



Figure 1. Pictures of the potato plant above ground parts after 4 applications; right Intra Eco Shield and left the control.

With the application of Intra Eco Shield, the potato plants were visually wider, lush, and greener, and seem to have experienced lesser suffering due to the stress conditions. Overall, the plants looked above-ground healthier with lesser damage on the leaves and better development than the control potatoes.

Results after potato harvest

As the potatoes will be used for potato chip production, the dry-matter content of the potato is important, it determines the crispiness of the future chips. Samples were sent to a local laboratory of the Fruit and Vegetable Research Institute in Kazakhstan. Their results showed that there was an improvement in dry matter content of 8% when using Intra Eco Shield compared with the control group (figures 2 and 3).

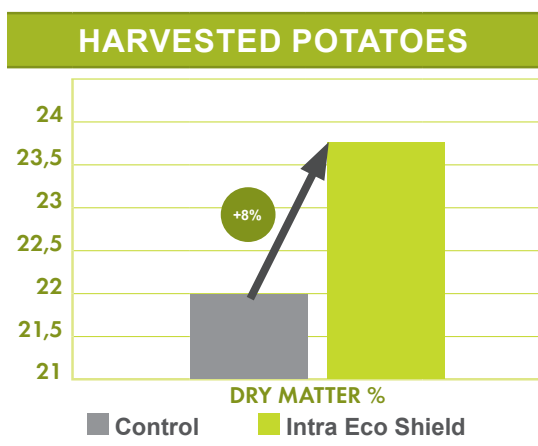


Figure 2. Dry matter content (%) of harvested potatoes



Figure 3. Small harvest batch of potatoes; control and Intra Eco Shield

The overall outcome of this trial

After applying just 4 to 5 dosages of Intra Eco Shield, potato plants showed already above as below-ground improvement in growth development. After application with Intra Eco Shield, there was lesser damage found on the leaves even with the different stresses. In addition, potatoes themselves seem to have had a higher dry matter content. Intra Eco Shield supports the entire plant and secures a well-balanced uptake of nutrients giving a high-quality yield at the end of the harvest.