Groundwork BioAg

Rootella® Mycorrhizal Inoculants alleviate plant stress

Rootella® contains beneficial mycorrhizal fungi that interact with plants and effectively extend their root systems, forming an underground web. Plants utilize this web to access nutrients more efficiently. The enhanced nutrient uptake provides a wide scope of benefits to the plant, including stress tolerance. Rootella® mycorrhizal inoculants significantly improve crop yields, especially under stressed growing conditions:

Soybean trial in Indiana, USA. Rootella®-treated plants (R. and L.) survived extreme flooding, while untreated plants (center, extreme R. and extreme L.) died. Photo taken after flooded field dried.

Water Stress

Rootella®-treated plants better cope with conditions of drought or flooding.

- A semi-commercial grain corn trial at Gibbs Farm, Ohio, USA, suffered from drought, and Rootella® increased yield from 107 bu/ac to 139 bu/ac (30% improvement, essentially saving the crop).
- In a semi-commercial trial in Indiana, USA, even after exposure to an extreme flood event, Rootella®-treated grain corn thrived, increasing yields by 13.6%.
- In an irrigated grain corn research trial in Gadash Farm, Israel, Rootella®-treated corn yielded the same at 80% irrigation rates as did untreated corn at 100% (standard) irrigation.

Acidic or Alkaline Soil

Acidic conditions limit crop production in 40% of the world's soils, mostly because many plants do not absorb nutrients (especially phosphorus) well in acidic (pH<5.0) or in alkaline (pH>7.5) soils. Mycorrhizal fungi are resilient to these conditions, and can assist with nutrient uptake where plant roots fall short.

- Grown in the acidic soils (pH: 4.4-5.6) of Campo do Parecis, Brazil, Rootella®-treated grain corn boasted increases of 18.8% in height and 28.6% in root width in comparison to non-treated controls. Yield increase was estimated at 15%.

> "Drought. 2016 was one of those years when I knew that my corn wasn't going to yield. Rootella® provided a safety net, added 32 bu/ac (over a large plot), and saved my investment!"
>
> - Christopher Gibbs, Ohio, USA

- At a 40-acre commercial trial in Montana, USA, Rootella®-treated lentils yielded 33% better than untreated lentils in 2016 when both grown in alkaline soil (pH: 7.5-8.0), and 25% better in 2017.

Low Soil Fertility

Numerous studies show that corn, soybean, and many other plants benefit from mycorrhizal fungi, which converts unavailable forms of phosphorus and nitrogen to available forms.

■ In a contract research corn trial in Iowa, USA, two seed varieties showed that the investment in Rootella® was even better than one in phosphorus (P). Rootella®-treated Monsanto corn that received only 50% P yielded 2.7 bu/ac (1.24%) higher yield than the untreated, 100% P applied treatment. Similarly, Rootella®-treated Pioneer corn at 50% P gave 1.9 bu/ac (0.93%) higher yield than the untreated 100% P treatment.

■ Our partners at Sino-Agri in Tai'an, China, successfully increased corn yields more than 40% in soils containing low levels of organic matter (< 2%) and very low available nitrogen (< 13 mg/kg).

■ In field trials done in Matto Grasso, Brazil, Rootella®-treated corn averaged 18.8% higher and 23.6-28.6% wider at the root in comparison to non-treated controls when grown in soils with extremely low soil phosphorus (1.1-18.9 mg/kg).

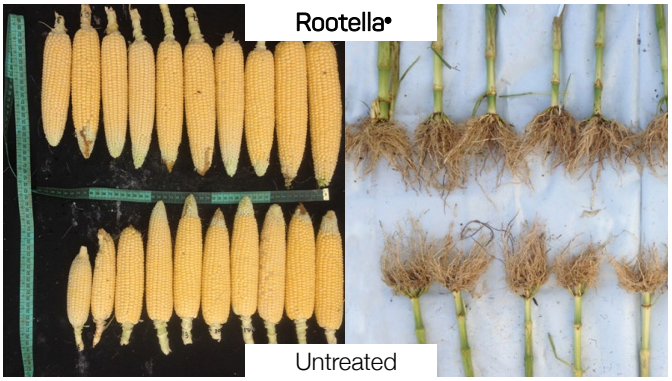
Temperature and Season

Rootella® can help plants cope with bad weather, off-season conditions, or irregular precipitation.

■ Double-cropping scenarios typically entail sub-optimal planting times. Rootella® can be effective in these conditions, as was the case in a double-crop soybean trial in Poseyville, IN, USA, which improved yield from 57 bu/ac to 68 bu/ac (19%).

■ In 2015, John Buck Farms in Ohio, USA, experienced irregular precipitation, and their untreated soybeans produced only half their normal yield: 19.8 bu/ac However, their Rootella®-treated soybeans yielded 39.5 bu/ac, i.e. 99.5% higher than the control.

■ At our partners at Argaman, Israel, yields from optimally-timed plantings of Rootella®-treated sweet corn were improved by 12%, whereas yields from near-off-season plantings were improved by 41%.



Near off-season commercial sweet corn trial in Argaman, Israel, shows thicker roots, wider and greener stalks, and larger ears.

Plant stress? Rootella®'s got you covered!

Groundwork BioAg Ltd. produces cost-effective mycorrhizal inoculants for commercial agriculture. Natural mycorrhizal fungi improve soil nutrient uptake in 90% of all plant species. When applied to agriculture, mycorrhizal inoculants significantly increase crop yields, especially under stress conditions. Growers can also reduce fertilizer application rates, most notably phosphorus. Groundwork Bio Ag's uniquely vigorous and highly concentrated Rootella® products have demonstrated impressive field trial results in several major crops, such as corn, soybean, tomato and onion.

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REGISTERED cdfa ORGANIC INPUT MATERIAL

OMRI LISTED® For Organic Use

Based on 30 years of research