

### Environmental Stress Benefits

<b>ACC</b> BL	Support abiotic stress tolerance by degrading ACC, a precursor to ethylene formation
<b>Acetoin</b> BA	Secretes acetoin which triggers induced systemic resistance (ISR), mediating stress
<b>Auxin</b> BL	Critical for cell division, plant growth and enhances plant's tolerance to abiotic stress
<b>Catalase</b> BL	An antioxidant enzyme that protects plant cells from abiotic stress damage
<b>Cytokinin</b> AB	Secretes cytokinin, a biochemical messenger supporting plants under stress
<b>Exopolysaccharides</b> BL	Secretes EPS which forms a biofilm layer on roots mitigating damage from abiotic stress
<b>Gibberellic Acid</b> AB	Secretes GA which plays a central role in the plant's response to abiotic stress
<b>IAA</b> PP AB	Secretes IAA, a common auxin that enables cell division and movement of photosynthates
<b>PAL</b> BA	Secretes PAL, a key enzyme that supports systemic resistance against abiotic stress

Microbial Species	Abbreviation	Microbial Species	Abbreviation
Azospirillum brasilense	AB	Bacillus licheniformis	BL
Bacillus amyloliquefaciens	BA	Pseudomonas patida	PP



### Plant Nutrition Benefits

<b>Phosphorus</b> BA, AB	Able to solubilize and make plant available insoluble forms of phosphate
<b>Nitrogen</b> AB,	Capable of fixing atmospheric nitrogen (N <sub>2</sub> ) into biologically useable and available ammonia
<b>Potassium</b> PP	Able to solubilize insoluble forms of potassium
<b>Iron</b> BS, AB	Able to convert insoluble forms of iron into iron-chelating siderophore compounds

### Biodegradation Benefits

<b>Amylase</b> BA, BL	Secretes amylase, an enzyme that hydrolyzes starch and breaks it down into smaller sugars
<b>Cellulase</b> BA	Secretes cellulase, an enzyme that breaks down cellulose into its monosaccharide units
<b>Chitinase</b> BA	Secretes chitinase, an enzyme that biodegrades the cell walls of fungi that is rich in chitin
<b>Glucanase</b> BA	Secretes glucanase, an enzyme that breaks down large polysaccharides like glucans
<b>Laccase</b> BA	An enzyme that biodegrades lignin and can oxidize and degrade aromatic pollutants
<b>Protease</b> BA, BL	Secretes protease, an enzymes that break down proteins down into amino acids
<b>Urease</b> BA	Secretes urease, enzyme capable of breaking down urea into ammonia and CO <sub>2</sub>
<b>Xylanase</b> BA	Secretes xylanase, an enzyme that breaks down hemicellulose in plant cell walls

## CanGrow ReStore® - Biological Seed Treatment

### A Strong Start for Strong Plants

CanGrow ReStore® offers many benefits to help provide a quick germination process and quality stand rate. As the seedlings grow, CanGrow ReStore® continues to embrace the fundamental relationship between the plants and soil. The microbes feed off of the sugars that are given off by the young seedlings which helps promote a healthy and vigorous plant.

The addition of CanGrow ReStore® can result in up to a 30% reduction of commercial P needed. Several strains can also reduce surface tension to free up more organic and inorganic nutrients to make them available to the entire microbial population.



These microbes support:

- Nitrogen fixing
- Phosphorus solubilization
- Potassium, Iron and other nutrient increased availability
- Production of environmental stress reducing factors such as catalase, EPS, and PAL
- Production of biodegradable enzymes

### Application Rate

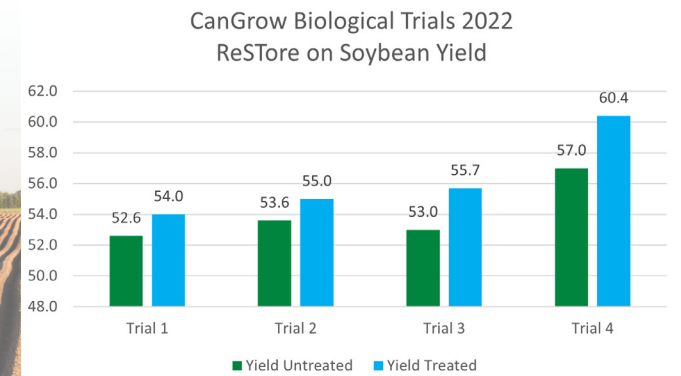
**Seed Treatment:** 44 - 60 mL (1.5 - 2 oz) per 50 lbs of seed

### 2022 Ontario Field Trials

Soybean seeds treated with CanGrow ReStore® showed an average increase of yield by 2.2 bushels/acre, resulting in an average return of investment (ROI) of \$35.05/acre.

The treated plants also showed:

- Bigger root systems
- Earlier nodulation
- More prolific nodulation



#BetterBiology