

Better plant growth is rooted in *Bacillus amyloliquefaciens*.

Most soybean inoculants contain *Bradyrhizobium japonicum*, a rhizobium essential for successful soybean inoculation. What sets our Biostacked® inoculants apart is the use of a second bioactive, *Bacillus amyloliquefaciens*. This is a natural, non-toxic bacterial strain that works in conjunction with rhizobial strains to enhance plant health, all season long. At BASF, we work with this specific bacillus strain because of its proven, beneficial effects on plant growth. Canadian growers can access the benefits of *B. amyloliquefaciens* in Integral® biofungicide and Nodulator® PRO Biostacked inoculant for soybeans. The result is stronger, more robust root systems, and ultimately, higher yield potential.

It begins at the root.

When *B. amyloliquefaciens* is introduced, it colonizes the root zone of the host plant and forms a 'protective sheath' that covers the root system. The bacteria grows with the plant's root system, enhancing plant growth and vigour, reducing time to canopy closure and accelerating nodule formation. The result is a stronger root system that leads to healthier plants, improved water and nutrient uptake and stronger suppression of certain seed- and soil-borne diseases.

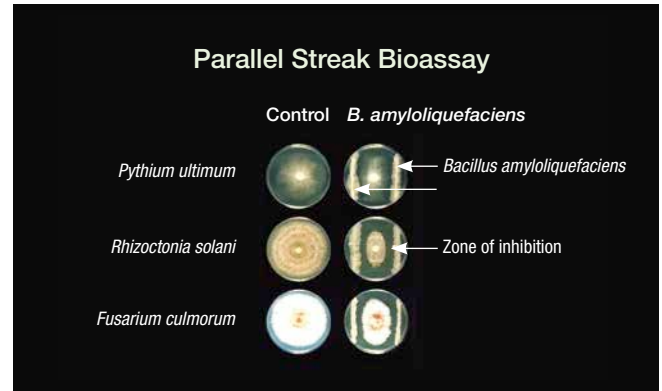


The benefits of *B. amyloliquefaciens* illustrated on pepper roots.
Untreated (left), *Fusarium solani* (middle), *B. amyloliquefaciens* + *Fusarium solani* (right)
Source: Auburn University



Built-in disease suppression.

B. amyloliquefaciens, found in Integral biofungicide, forms a physical barrier of beneficial bacteria on the root surface to prevent harmful organisms from penetrating plant roots. It's a phenomenon often referred to as "pathogen displacement." It can also help prevent seedling diseases caused by *Rhizoctonia* spp. and *Fusarium* spp. Because of *B. amyloliquefacien's* ability to suppress these pathogens, this active ingredient in Integral biofungicide is a PMRA-registered label claim in Canada.

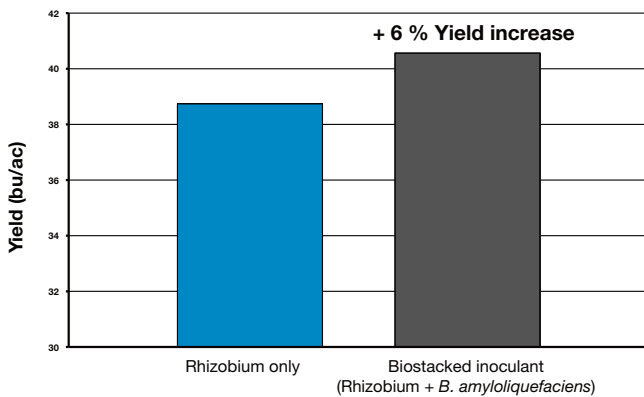


B. amyloliquefaciens produces metabolites to inhibit pathogens.

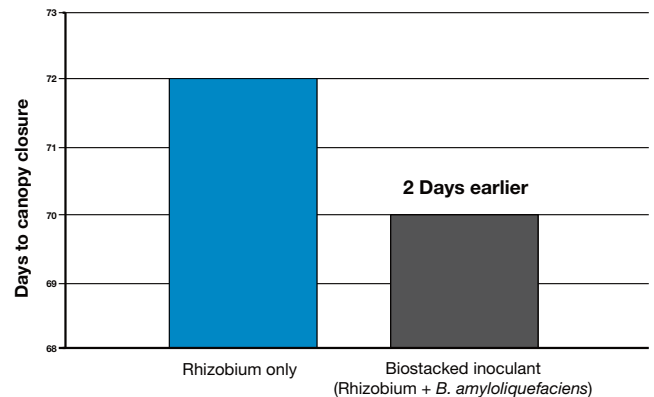
Improved plant vigour. Higher yields.

Plants with stronger roots and better disease suppression benefit from healthier nodule development and faster growth. Research demonstrates improved plant vigour, increased nodule weights and reduced days to row canopy closure when Biostacked inoculants containing *B. amyloliquefaciens* are used. Research also demonstrates an increase of 1.5 to 1.8 bu/ac (4% to 6%) when compared to an inoculant with the same rhizobial strain but without the addition of *B. amyloliquefaciens*.

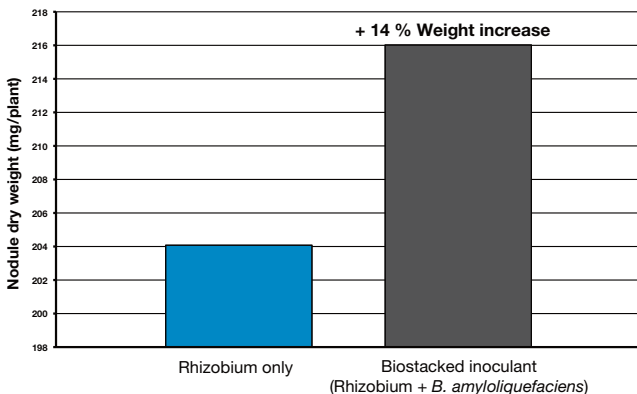
Soybean yields when inoculated with rhizobium only vs. Biostacked inoculant (Rhizobium + *B. amyloliquefaciens*)
76 Station years
(Station years = # of sites X # of years)



Days to canopy closure with rhizobium only vs. Biostacked inoculant
4 Station years
(Station years = # of sites X # of years)



Soybean nodule weights with rhizobium only vs. Biostacked inoculant
56 Station years
(Station years = # of sites X # of years)



Research shows *B. amyloliquefaciens* improves days to canopy closure, nodule weights and yields in soybeans.

Where can you get the *B. amyloliquefaciens* advantage?

- **Biostacked inoculants like Nodulator PRO** offer multiple beneficial biologicals that work together with the soybean root system to deliver enhanced performance. The first component is the nitrogen-fixing rhizobium, *B. japonicum*. The second component is found in Integral biofungicide. The active ingredient and beneficial biological is the unique bacterial strain *B. amyloliquefaciens*. It delivers:
 - Greater nodule biomass, faster canopy closure and ultimately higher yields
 - Suppression of the seedling diseases caused by *Rhizoctonia* spp. and *Fusarium* spp. in soybeans



Biostacked inoculant (left), rhizobium-only inoculant (right)
Source: BASF

For more information about inoculants, call **AgSolutions**[®] Customer Care at 1-877-371-BASF (2273) or visit **agsolutions.ca**.

Nodulator[®] PRO

The professional Biostacked[®] Inoculant system

Always read and follow label directions.

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