

2X

Enhanced Nitrogen Availability With Twice the Nodulation

Nitrogen is an essential nutrient for your soybeans, and getting enough relies on the development and function of root nodules. Here's how it works and what you can do to increase nodulation by two times.



What Are Nodules and How Do They Form?

Nodules are small, round masses that form on the roots of plants. They act as host sites for symbiotic nitrogen-fixing bacteria, like *Bradyrhizobium japonicum*, that convert atmospheric nitrogen into a form the plant can use.

The nodules form as a result of a beneficial infection. When the plant needs additional nitrogen, it sends out signals to rhizobia bacteria in the soil. The bacteria respond with a signal that stimulates root hair curling, which enables rhizobial infection and nodule formation.



Improved Nodulation Through LCO

LCO molecules can amplify the communication between rhizobia bacteria and the soybean plant. Based on a 2016 growth chamber study, Optimize[®] XC Inoculant and TagTeam[®] LCO XC Inoculant – which combine LCO with rhizobia – **can double the rate of early nodulation** compared to rhizobia alone.

Optimize[®] XC Inoculant is a dual-action soybean inoculant that provides enhanced nutrient capabilities with the industry's lowest application rate.^[1]

TagTeam[®] LCO XC Inoculant is a triple-action soybean inoculant that delivers the same benefits as Optimize[®] XC Inoculant, but also includes *Penicillium bilaiae*, which makes phosphate more available.

Keep an Eye on Your Nodules

- The only verifiable way to see if your soybeans have healthy nodulation is to do a root dig.
- Nodules appear shortly after emergence and continue to form until just after R5.
- Prior to flowering, healthy soybean roots should show between eight to 20 nodules per plant.
- Inspect the nodules for a red or pink color, which means they're actively fixing nitrogen.



[1] 0.75 fl oz per unit of seed with minimum of 1.5 fl oz total volume with water when applied alone. Performance may vary from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields. Always read and follow pesticide label directions.