

Launcher PRO™ Outperforms Competition

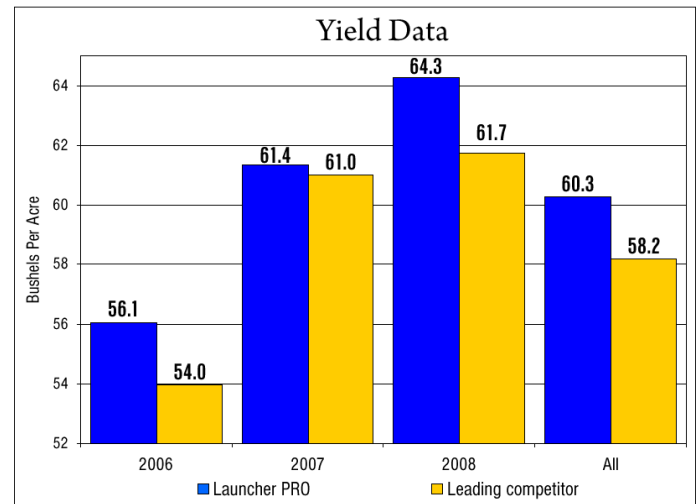


Results. Expect it.™

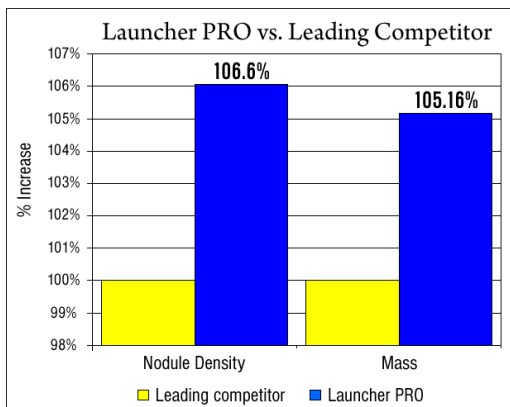
Are there differences in today's new inoculant offerings? Absolutely! While it's easier to demonstrate the value of inoculants over native bacteria strains, once you've made the decision to inoculate it's important to look closely at the products to sort out the performers from the pretenders.

WHAT TO LOOK FOR

1. **Bacteria:** Part of it is a numbers game. The more you start with and the more that are alive when root hairs are available for infection, the more nodules, nodule mass and nitrogen fixation you'll get as a result.
2. **Survival:** Are more days on seed better? Not always. While it may look good to claim a long time on seed, how many bacteria are actually alive to do their job at the right time? Use of an approved extender ensures bacteria is alive and well at the time it needs to be, whether there was a delay in planting or in seed germination.
3. **Performance:** Once we have a high concentration of bacteria, and they are alive in the presence of emerging root hairs, bacteria need to be good at two activities:
 - a. **Infection.** Are they aggressive in the presence of native bacteria and nitrogen in the soil to infect roots hairs, enabling the formation of nodules?
 - b. **Nitrogen fixation.** After nodules are formed, as a result of the infection, do the bacteria go to work efficiently producing nitrogen?



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THREE KEY PERFORMANCE FACTORS:

1. **Formation of nodules at the crown of the tap root.** This is the area most highly concentrated with commercially applied.
2. **Nodule mass creation.** Nitrogen fixation is much more efficient in larger nodules. Commercial strains should be creating nodules with significant mass, creating efficient nitrogen fixation factories.
3. **Yield.** During the growing season, an increase of nodules on the tap root along with increased nodule mass improves the likelihood of more nitrogen fixation. Increased grain yield is an increase in protein production. The main requirement of protein production is nitrogen.

TALE OF THE TAPE

	Launcher PRO	Leading Competitor	Advantage
Bacteria guarantee	4 billion	No guarantee	Launcher PRO
Nodule development	21.00	19.80	Launcher PRO +6%
Nodule mass	132.40	125.90	Launcher PRO +5%
Yield	60.30	58.20	Launcher PRO +3%
Value @ \$8.00 soybeans	\$482.40	\$465.60	Launcher PRO +\$16.80

“Pods per plant were similar in number for the plants receiving various treatments. But when it got down to seed size, the Launcher PRO had the larger seed. Old literature suggests seven to 14 nodules typically produce optimum yields. Launcher PRO had 13 nodules.”

-Brewer Blessitt, Mississippi Delta soybean pathology/agronomy researcher



Specialized Chemistry for Seed Enhancement