

New Tech SI In-furrow inoculant in soybeans

Background:

A phenomenon in soybeans called co-inoculation is being studied in scientific literature. Rhizobia are stimulated to increase nodule number and size by the presence of another nitrogen fixing bacteria called azospirillum. A product manufactured in the United States by TerraMax “New Tech SI In-furrow” contains azospirillum and a unique formulation and strain of rhizobia inoculant. This product was applied in-furrow to soybeans in replicated strip trials in 2018.

Protocol:

Growers planted alternating strips of soybeans with and without New Tech SI In-furrow. Strips needed to be at least two times the width of their harvesting header. All other inputs were required to remain constant across the trial area.

Visual observations of the trials occurred throughout the season. After harvest, yield monitor data was cleaned according to industry standards to remove outliers. Data was statistically analyzed according to generally accepted mixed model procedures.

Outcome:

Field observations indicated greater crop vigor and increased nodulation at locations 101 and 102.

The yield response to co-inoculation ranged from 1.6 to 4.1 bu/acre with an average response of 2 bu/acre (Table 1). At a product cost of \$4.00/acre, New Tech SI In-furrow represents opportunity for a positive return on investment, but more testing is necessary. The complication with New Tech SI In-furrow is that it must be applied in-furrow and in contact with the seed, though seed treatment formulations are available.

Table 1. Soybean response to co-inoculation using the azospirillum and rhizobia-containing New Tech SI In-furrow.

Location	New Tech SI In-furrow	Untreated Check	Difference	Pr>t ¹
	-----yield (Bu/A)-----			
101	69.1	65.0	4.1	0.03
102	70.3	67.9	2.4	0.06
113	65.2	63.7	1.6	0.16
Average	67.6	65.6	1.9	0.02

¹Pr>t is an estimate of the statistical significance of the yield difference. Values greater than 0.15 indicate observed yield differences are likely due to chance alone.