

SCN infestations and damage reduced with N-Hibit™

N-Hibit™ Seed Treatment reduces Soybean Cyst Nematode (SCN) eggs and cysts while improving plant growth and development, field research in 2005 has shown. SCN is a microscopic worm estimated to cost U.S. soybean growers about \$1.5 billion in yield losses each year.

Announcement of the N-Hibit results was made by Eden Bioscience Corporation, Bothell, WA during the 2006 Commodity Classic. Eden Bioscience develops, manufactures and markets innovative, natural protein-based products for improving plant health and vigor. The company also announced that another of its products, ProAct™ Plant Health Regulator, increases soybean yields significantly.



SCN on roots of healthy-looking soybeans. Many growers do not realize their yields are sharply reduced by SCN.
(Photo courtesy of Iowa State University.)

"In initial evaluations of N-Hibit seed treatments, SCN eggs per root weight were reduced," Dr. Ned French, Eden Bioscience Director of Field Biology and Development, told the Commodity Classic audience. "For example, numbers of eggs and cysts were reduced by more than half in research at Southern Illinois University. But the rates of N-Hibit used were not as economically attractive for growers in these initial studies as in the most recent trials with lower rates."

The subsequent replicated research by independent agricultural scientists in Illinois and Georgia investigated lower use rates with N-Hibit CST (Commercial Seed Treatment) and N-Hibit HB (Hopper Box) formulations.

"These cooperators demonstrated that N-Hibit at 0.3 oz/cwt of seed reduced

soybean cysts per root weight by an average of approximately 40%," said Dr. French. "N-Hibit treated soybean plants had improved growth and development in their average number of nodes, leaves, root length and volume, and in plant weight (roots, shoots, and leaves) compared with the untreated control.

"These favorable differences in plant growth may be a consequence of lessened nematode presence and damage. On average, root volume and root length increased more than 30%. Plant height, nodes per plant, and leaf count each increased by 14% to 21%. And total dry plant weight rose 22%," said Dr. French. "Such growth effects can have a positive impact on nutrient uptake and distribution, plant health, ability to withstand stress, and ultimately yield.

"The soybean cyst nematode reductions are consistent with what we have seen in cotton for several years, where N-Hibit reduced the juveniles and eggs of root knot nematodes and reniform nematodes by about 50%, while enhancing plant growth," Dr. French noted.

SCN Causes Major Yield Loss

Iowa State University agronomists note that SCN is the single most damaging pest affecting soybean in the U.S. Many farms suffer declining yield for several years before SCN is discovered, and ISU says losses have been estimated at about \$1.5 billion in the U.S. alone. The soil-borne microscopic worm is widely present in many states (75% of Iowa fields) and can reduce soybean yield by 50% or more. The University of Missouri estimated the 2004 U.S. soybean yield losses due to SCN totaled 136.7 million bushels.

University nematologists note that once present in the soil, SCN can never be eliminated, but populations of them can be managed.

"N-Hibit is an important and very economical new tool for growers to use in the management of SCN," said Mike Cloutier, Eden Bioscience Director of Sales and Marketing. "The harpin



Female SCN on soybean root. SCN is the single most damaging pest impacting U.S. soybeans.
(Photo courtesy of Iowa State University.)

protein in N-Hibit activates the plant's own self-defense and growth systems to defend itself from within against nematodes in the surrounding soil. This is a unique mode of action, and one that involves virtually no environmental or health issues, and because of its high degree of safety, N-Hibit can be applied on-farm at planting as well as applied by commercial seed treaters.

"We recommend applying N-Hibit to the seed either at the dealer or in the hopper box at 0.3-ounce per 100 pounds of soybean seed. The cost of this treatment is exceptionally low, and we believe the increased plant health and growth that result will provide a benefit that growers will appreciate.

N-Hibit Safety Profile a Plus

N-Hibit is a dry powder that is not a restricted use product. It is easy to apply by the seed dealer or in the hopper box, has an excellent safety profile, and leaves no residuals in the water, soil or on plants.

In 2006, Dr. French plans to initiate field trials to investigate the performance of new, experimental seed treatments Eden Bioscience is developing for soybeans. This testing will include on-farm evaluations with crop advisers and growers.

Growers may phone the Eden Bioscience customer service desk at (888) 552-5976 for more information about ProAct and other Harp-N-Tek™ products, or go online to www.edenbio.com.