

🚺 Clariva[®] pn

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Technical overview

Clariva[®] pn is a revolutionary nematicide designed to protect against soybean cyst nematode (SCN). With a novel active ingredient, *Pasteuria nishizawae (P. nishizawae)*, Clariva pn is the only nematicide to offer season-long SCN protection.

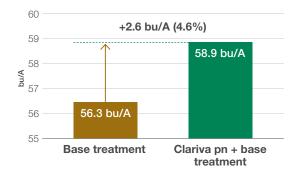
Clariva pn key benefits:

- Increases yield potential with effective, seasonlong protection from SCN, a pest responsible for approximately \$1.5 billion in annual soybean yield losses – more than the next five most damaging soybean pathogens combined¹.
- Offers more sustainable SCN management, enhancing the performance of SCN-resistant varieties by reducing SCN reproduction and selection pressure.
- Reduces damage from SCN-related diseases such as sudden death syndrome (SDS).



Crop rotation and SCN-resistant varieties are important tools in the battle against SCN but do not completely eliminate feeding and reproduction, and are not enough to offset SCN's impact on soybean yield. SCN populations across all major soybean-producing areas in the U.S. have shown increased reproduction on varieties using PI88788, the most common source of genetic resistance.

Yield increase from Clariva pn



All trials with at least low SCN pressure (>1 SCN egg/100cc of soil) Source: Syngenta; 50 on-farm trials, 2013-2014 To enhance the performance of SCN-resistant varieties, it is recommended that growers use additional management tools, including nematicide seed treatments like Clariva pn.

Soybeans treated with Clariva pn applied to an insecticide/fungicide base treatment saw a 2.6 bu/A yield advantage compared to the base treatment alone. Clariva pn works to reduce SCN reproduction and selection pressure to help soybeans reach their full yield potential. By reducing SCN populations, Clariva pn helps to minimize the potential for SCN-related diseases, like SDS, to infect soybeans.



P. nishizawae spores infecting the nematode

How it works

P. nishizawae is an endospore-forming bacterium and natural obligate parasite of SCN that delivers a lethal mode of action to reduce SCN feeding and reproduction. The active ingredient does not rely on soil type, moisture content, pH or temperature to be activated, providing soybeans with protection from the day they are planted.

DISPERSION STAGE

The treated seed is covered with millions of spores; during seed imbibition and germination these spores are moved off the germinating seed by soil moisture and initiate the revolutionary season-long protection against SCN.

GERMINATION STAGE

P. nishizawae produces a germ tube that penetrates the SCN and infects the nematode's interior body. The infection results in reduced SCN reproduction and feeding. One germinated *P. nishizawae* spore is enough to eventually kill SCN; however, additional spores may attach and increase the rate of immobilization and death.







ATTACHMENT STAGE

P. nishizawae spores attach to the outer layer of SCN as the nematode passes through the soil.

CELL GROWTH STAGE

Sporulation and the development of actual immature spores begins inside the nematode's body. Depending on whether the *P. nishizawae*-infected SCN is mature, the number of developing *P. nishizawae* spores within the SCN body can range from a few thousand to hundreds of thousands.

SPORE RELEASE STAGE

At death, the nematode decomposes and *P. nishizawae* spores are released back into the soil to protect the root zone against new generations of SCN. This process provides season-long, effective protection that repeatedly recharges the root zone with more *P. nishizawae* spores throughout the growing season.



Contact your local Syngenta representative or call 866-796-4368 for more information. Join the conversation online – connect with us at social.SyngentaUS.com



¹Source: Koenning, S. R., and Wrather, J. A. 2010; United Soybean Board, 2011

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