

The Bottom Line on Wireworms in Wheat

Does Teraxxa™ Seed Treatment kill wireworms?

Teraxxa Seed Treatment does induce wireworm mortality and eliminates wireworms.¹

Bottom line: Yes.

What affect does Teraxxa Seed Treatment have on a population of wireworms in the field?

Wireworm movement in the soil is affected by soil temperature and moisture.² Not all wireworms in the field (the resident population) may feed in a given season. In other words, there will be resident populations that will not be exposed to the lethal effects of Teraxxa seed treatment during a given season and remain in the field for growers to contend with.

Bottom line: No one flips a switch and all the wireworms come up from their overwintering locations, therefore Teraxxa Seed Treatment eliminates those wireworms that pose the most immediate threat to the seed zone.

Do neonicotinoids or diamides have an impact on a population of wireworms in the field?

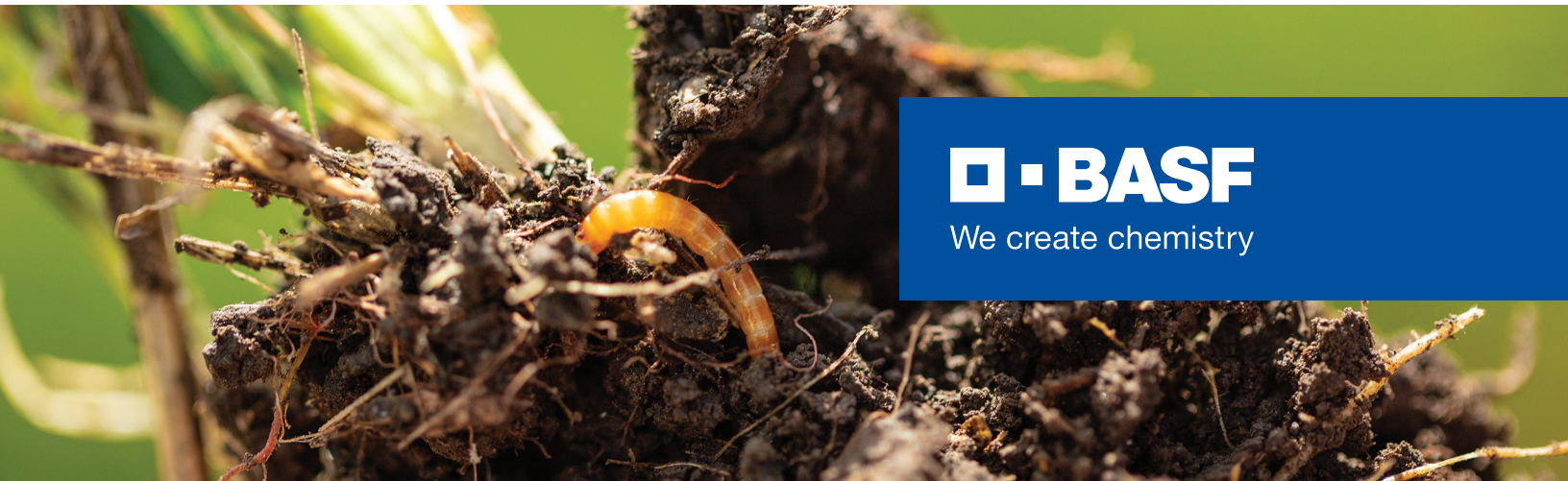
Wireworms are the larval stage of an adult click beetle. Adult click beetles do not directly damage crops. The larval stage lasts 5-7 years in the field. When a wireworm encounters a neonic³ or diamide⁴ they enter a state of temporary intoxication. The use of these seed treatments can extend their larval stages and delay adulthood. This delay causes an extension of the time when wireworms are damaging crops, by allowing them to stay in their larval stage an extra growing season.⁵

Bottom line: Other insecticides kick the can down the road, allowing populations to build.

If Teraxxa Seed Treatment eliminates wireworms, do I need to continue to use it each season?[†]

There will continue to be adult click beetles coming from grassy headways, ditches, and acres with uncontrolled populations.¹⁻⁴ Eggs deposited by these click beetles will hatch and growers will need to control this next generation of wireworms annually.⁶

Bottom line: Mother nature bats last.

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How do I know if the wireworm infestation in my field will cause economic damage?

Wireworms often hit our most productive acres. Gaining control on those acres, will be an important battle to win. Even moderate levels of infestation on the rest of our acres is stopping you from achieving the max yield potential on the rest of your acres.

Best Use Recommendations⁷

Average Number of Wireworms per Trap	Risk of Economic Damage	Wireworm Treatment Recommendation*
0	Low	No Treatment
0-1	Moderate	Possible Treatment
1-2	Probable	Treat with Recommended Rates
2-4	High	Treat with Recommended Rates
> 4	Extreme	Extreme Methods**

* Knowing field history also helps with developing treatment recommendations.

** Extreme methods of control include highest rates allowable of neonicotinoid insecticides, higher seeding rates, and delayed seeding.

1 Vernon, R. S., W. G. van Herk, M. Clodius, and C. Harding. 2009. Wireworm management I: stand protection versus wireworm mortality with wheat seed treatments. J. Econ. Entomol. 102: 2126–2136. erson et al. 2009.

Vernon, R. S., W. G. van Herk, M. Clodius, and C. Harding. 2013. Crop protection and mortality of Agriotes obscurus wireworms with blended insecticidal wheat seed treatments. J. Pest Sci. 86: 137–150.

2 Knodel, Janet & Shrestha, Govinda. (2018). Pulse Crops: Pest Management of Wireworms and Cutworms in the Northern Great Plains of United States and Canada. Annals of the Entomological Society of America. 111. 195-204. 10.1093/aesa/say018.

3 Vernon, R. S., W. G. van Herk, M. Clodius, and C. Harding. 2009. Wireworm management I: stand protection versus wireworm mortality with wheat seed treatments. J. Econ. Entomol. 102: 2126–2136. erson et al. 2009.

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Morales-Rodriguez, A., and K. W. Wanner. 2015. Efficacy of thiamethoxam and fipronil, applied alone and in combination, to control Limonius californicus and Hypnoidus bicolor (Coleoptera: Elateridae). Pest Manag. Sci. 71: 584–591.

Vernon, R. S., W. G. van Herk, M. Clodius, and C. Harding. 2009. Wireworm management I: stand protection versus wireworm mortality with wheat seed treatments. J. Econ. Entomol. 102: 2126–2136.

Milosavljevic, I., A. D. Esser, K. M. Murphy, and D. W. Crowder. 2019. Effects of imidacloprid seed treatments on crop yields and economic returns of cereal crops. Crop Prot. 119: 166–171.

4 van Herk, W. G., T. J. Labun, and R. S. Vernon. 2018. Efficacy of diamide, neonicotinoid, pyrethroid, and phenyl pyrazole insecticide seed treatments for controlling the sugar beet wireworm, Limonius californicus (Coleoptera: Elateridae), in spring wheat. J. Entomol. Soc. Brit. Columbia. 115: 86–100.

5 Herk, et al., 2020, Broflanilide, a Meta-Diamide Insecticide Seed Treatment for Protection of Wheat and Mortality of Wireworms (Agriotes obscurus) in the Field, Journal of Economic Entomology

6 Glogoza, Phillip. 2001. Wireworm Management for North Dakota Field Crops. NDSU Extension.

7 Chart Source: Wheat and Small Grains CAHRS & Washington State University Extension (<http://smallgrains.wsu.edu/insect-resources/pest-insects/wireworms/>)



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*Always read and follow label directions.

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