

Nurizma[®] Retailer Corn Insecticide Conversation Guide

Corn rootworm robbed the U.S. corn crop of 600 million bushels in 2021, more than three times the impact of any other invertebrate pest.¹

Controlling corn rootworm and maintaining crop standability is complicated by resistance, creating the need for new tools for growers working to effectively manage these yield-robbing pests whether they use *Bacillus thuringiensis* (Bt) traits or not. Nurizma[®] insecticide is that new tool. It's a novel solution to help corn stand tall.

Novel mode of action against corn rootworm larvae

Nurizma insecticide is an in-furrow product with a unique mode of action that protects against common underground pests, including corn rootworm larvae, wireworms, white grubs and seed corn maggots.

The active ingredient in Nurizma insecticide, broflanilide, is the first Insecticide Resistance Action Committee (IRAC) Group 30 active ingredient registered and sold as an in-furrow insecticide for corn. It binds to a distinct site compared to Group 2 insecticides and shows no known cross-resistance with existing modes of action. This makes Nurizma insecticide an effective supplemental resistance-management tool and helps growers control rootworm populations that may become resistant to Bt traits and other in-furrow insecticides.

Nurizma insecticide benefits

Feature	Benefit	Value
Novel mode of action (IRAC Group 30)	Consistent rootworm larvae control	Reduces lost profit due to harvest inefficiencies and plant stress
	No known cross-resistance to existing modes of action	
	Strong, healthy root systems	Effective resistance-management tool
Low use rate	Less packaging to store, handle and dispose	Greater operating efficiency
Not a restricted use pesticide	No required recordkeeping	Greater operating efficiency

¹ Crop Protection Network. Corn Invertebrate Loss Estimates from the United States and Ontario, Canada-2021. Published July 2022. <https://cropprotectionnetwork.org/publications/corn-invertebrate-loss-estimates-from-the-united-states-and-ontario-canada-2021>

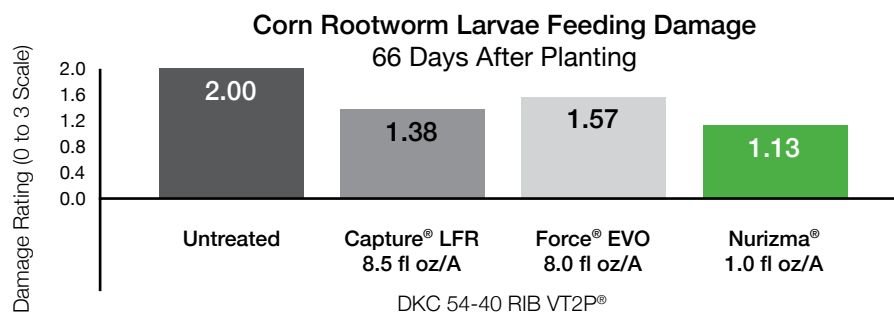
Nurizma[®] insecticide's competitive advantage

BASF field trials indicate that Nurizma[®] insecticide is well-positioned to compete against several top-performing commercial soil-applied insecticides. Here are some competitive analysis insights that can help you positively differentiate Nurizma insecticide from its top competitors.

Topic	Nurizma [®] (BASF)	Aztec [®] 4.67G (AMVAC)	Capture [®] LFR (FMC)	Force [®] EVO (Syngenta)	INDEX [®] (AMVAC)
IRAC Group	30	1B and 3A	3A	3A	1B and 3A
Active Ingredient(s)	Broflanilide	Tebupirimphos & Cyfluthrin	Bifenthrin	Tefluthrin	Chlorethoxyfos & Bifenthrin
Corn Rootworm Use Rate Per Acre (30-inch rows)	1.0 fl oz/A	3.27 lbs./A	8.5–17.0 fl oz/A	8–10 fl oz/A	11.3–12.5 fl oz/A
Application	In-Furrow	Band, T-Band, In-Furrow	In-Furrow, Band, Chemigation, Broadcast	Band, In-Furrow	In-Furrow
Closed Handling System	No	Yes	No	Yes	No
Restricted Use Pesticide	No	Yes	Yes	Yes	Yes
Hazard Signal	⚠ Caution	⚠ Warning	⚠ Warning	⚠ Danger	⚠ Danger
Product Needed for 1,000 Acres	4 cases (4 x 64 fl oz)	65 bags (50 lbs. each)	26 cases (2 x 2.5 gal.)	16 cases (2 x 2.5 gal.)	6.54 kegs (151 lb keg)

Field trial data

Nurizma insecticide has been tested on corn acres across targeted geographies to assess performance and efficacy compared to competitive commercial products. Use this trial data with customers to demonstrate that Nurizma insecticide offers exceptional corn rootworm larvae control and reduces feeding damage early in the season.



Nurizma Insecticide Effectively Controls Corn Rootworm Larvae Damage

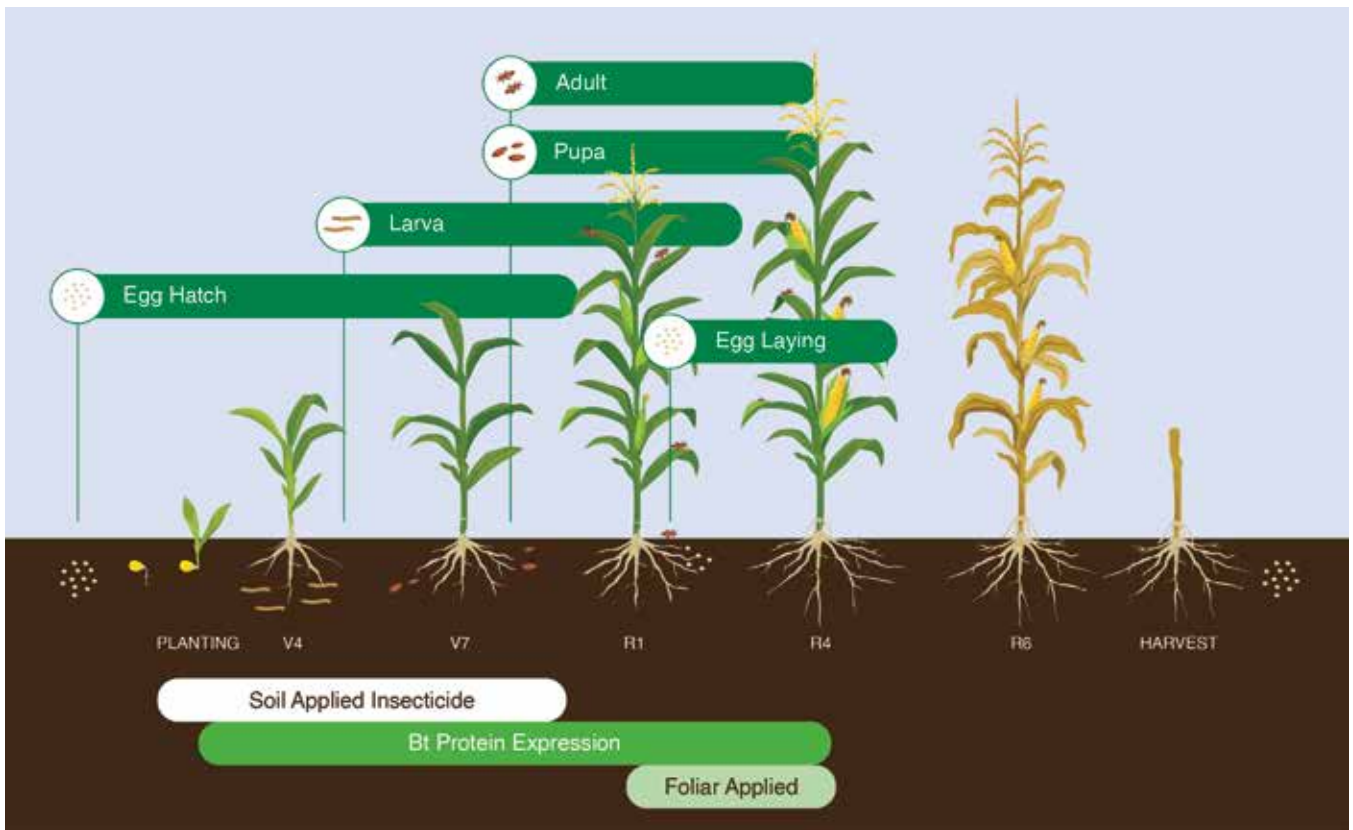
2022 BASF Sponsored Trial. ISU Trial planted May 16th, 2022 near Nashua, IA. 30" rowspacing.

Corn rootworm larvae yield loss

Every node of root pruned equates to an average of 15 percent yield loss.² With a 250-bushel/acre corn yield target, a single clipped node would result in a 37.5-bushel/acre loss. The infographic below depicts a healthy vs. damaged root system.



Sales planning guide



² University of Illinois. Western Corn Rootworms: Bt traits, in-furrow or seed treatment insecticides and resistance management. Published March 2016. <https://extension.illinois.edu/blogs/hill-and-furrow/2016-03-02-western-corn-rootworms-bt-traits-furrow-or-seed-treatment>

Mode of action

Broflanilide, the active ingredient in Nurizma® insecticide, binds to an inter-subunit allosteric site on the GABA receptor, resulting in a block of inhibitory neurotransmission, convulsions and death of target insects. It is classified by the Insecticide Resistance Action Committee (IRAC) as a Group 30 insecticide (GABA-gated chloride channel allosteric modulators).

Corn application requirements

For in-furrow use only:

- Minimum spray volume per acre: Dilute Nurizma insecticide in a minimum of 5 gallons of water per acre.
- Nurizma insecticide must be kept and applied separately from liquid fertilizer but can be directly injected into the suction or pressure line(s) of an in-furrow liquid fertilizer application system if the mixture is introduced towards the end of the line towards the exit orifice.
- Do not apply more than 2.3 fl oz/A of Nurizma insecticide [0.0445 lb. broflanilide (ai) per acre] per application and/or per year total.
 - This includes broflanilide that may be applied to wheat as Teraxxa™ seed treatment.
- Nurizma insecticide must be covered by soil immediately after application into the furrow.
- Maintain a 15-foot-wide vegetative buffer for conservation.

Nurizma® Insecticide Required Per Acre for Various Row Spacings in Corn

Rate per 1,000 Row Feet (fl oz product)	Rate per Acre (fl oz product)					
	15" rows	20" rows	30" rows	34" rows	36" rows	Twin rows
Row Feet/Acre	34,848	26,136	17,424	15,374	14,520	34,848
0.05	1.7	1.3	0.9	0.8	0.7	1.7
0.07	2.3	1.7	1.1	1.0	1.0	2.3

Nurizma® Application Guide

Insecticide

A Dosatron® unit is a simple and user-friendly tool for applying Nurizma® insecticide. The Dosatron works by simply and accurately injecting Nurizma insecticide solution into the flow of the liquid starter fertilizer or water prior to distribution to each row unit.

Bold, fast and easy, the unit works by pumping Nurizma insecticide from a planter-mounted 15-gallon tank through the Dosatron injection system. A Dosatron fill with one part Nurizma insecticide and one part water provides 960 acres of protection on 30-inch rows. The system helps you maintain your efficiency in the field by minimizing frequent refills. It ultimately helps ensure your corn stands tall all season long.



Planter WITH existing in-furrow application system	Planter WITHOUT existing in-furrow application system
<ul style="list-style-type: none"> • Install the Dosatron 500 DOSINJ215 per manual instructions onto planter • Adjust injection rate • Add Nurizma insecticide + water • Plant corn! 	<ul style="list-style-type: none"> • Install in-furrow liquid system on planter • Install the Dosatron 500 DOSINJ215 per manual instructions onto planter • Adjust injection rate • Add Nurizma insecticide + water • Plant corn!
<p>If liquid fertilizer is NOT being used, Nurizma insecticide can be tankmixed with water as carrier in an in-furrow liquid system with agitation</p>	

Additional support



Scan here to learn more about Nurizma Insecticide.

For more information on BASF and the entire Plant Health portfolio in corn, go to agproducts.basf.us

For more information on Dosatron direct injection systems, see your local BASF representative or authorized dealer.

For information on ordering or maintaining your Dosatron system, contact C&R Supply, Inc. by phone at **800-232-2637** or at crsupply.com

Visit Dosatron.com or contact their customer service line at **1-800-523-8499**

Dosatron® 500 DOSINJ215

You're just a few steps away from applying Nurizma® insecticide so your corn stands tall all season long. Your new Dosatron® 500 DOSINJ215 In-furrow Direct Injection Kit is a simple, user-friendly tool to apply Nurizma insecticide. Its 12-volt electric agitation pump accurately disperses Nurizma insecticide and water at a rate of two ounces per acre. Adding it to your planter is a matter of three easy steps:

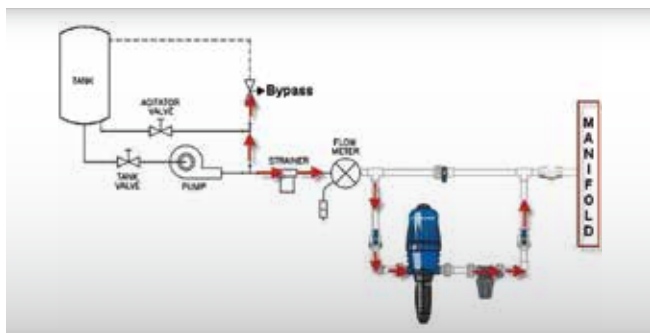
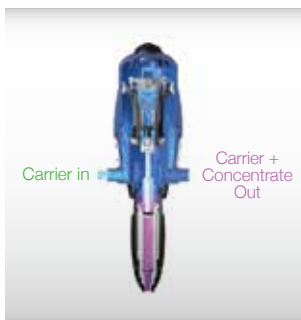
- Bolt it on — It's best to find a central location before the manifold
- Plumb in the Dosatron outlet hose to the main liquid supply line ahead of the row unit metering system

Pre-season checklist

- Adjust injection rate by hand
- Ensure screens and check valve are clean and free of debris

Best Practices + Maintenance

- When in use, continuously run the electric agitation pump to ensure suspension of product
- If stopped for any period of time, run agitation pump before resuming application
- Always follow Nurizma insecticide label
- Flush planter's in-furrow system before annual storage
- Rinse Dosatron unit with water and let dry completely before annual storage
- Store Dosatron unit indoors if possible
- Always follow directions in operator's manual



Nurizma® Insecticide FAQ

Can Nurizma Insecticide be applied with / tank mixed with liquid fertilizer?

Nurizma insecticide can be applied in conjunction with liquid starter fertilizers or a mixture of liquid starter fertilizer and water at planting but should not be tankmixed with liquid starter fertilizer. Nurizma insecticide requires a Dosatron, which is a direct in-line injection system that is calibrated to accurately deliver the target application rate of Nurizma insecticide per acre in-line with a liquid carrier such as water or liquid fertilizer. In-furrow plumbing and injection hardware systems vary by planter and row unit configuration. Before applying Nurizma insecticide, please read the complete label and follow all label directions. Due to the many brands of fertilizers and micronutrients, Nurizma insecticide has not been evaluated for compatibility with all possible combinations.

What is the minimum spray volume per acre for Nurizma insecticide?

BASF recommends Nurizma insecticide be diluted in 5 gallons per acre of carrier at the 1 oz./A use rate. Applications at 5 GPA help ensure improved compatibility and performance of Nurizma insecticide alongside the carrier of liquid fertilizer or water and support improved and uniform distribution of in-furrow product. Additionally, Nurizma insecticide should be diluted with a 1 to 1 ratio with water mixed within the Dosatron tank to ensure proper metering and application.

Can Nurizma insecticide be mixed with Headline® SC fungicide or other SC formulations?

The Nurizma insecticide label does not allow tank mixes with Headline SC fungicide or other SC formulated products.

Dosatron Settings for Nurizma® Insecticide Application		
Liquid Fertilizer Gallon per Acre	Ounces of Liquid Fertilizer	2 oz (1 oz Nurizma + 1 oz Water)
3	384	0.52%
4	512	0.39%
5	640	0.31%
6	768	0.26%
7	896	0.22%

Customer need and value experience

The following segmentation information can help you understand where Nurizma® insecticide fits in the marketplace and how to identify ideal customers.

- 1 Ideal market for Nurizma insecticide**

The target market for Nurizma insecticide is high-management continuous corn systems in which corn rootworm larvae feeding is a recurring problem.
- 2 Target corn customer**

Nurizma insecticide is an ideal solution for high-management corn growers who have high yield expectations and wish to continue planting corn.
- 3 Experience customers want**

Farmers want to keep their corn standing tall at harvest this year and the freedom to plant corn next year.
- 4 Core benefits Nurizma insecticide delivers**

Nurizma insecticide protects harvest efficiency and limits unseen yield loss from corn rootworm damage. It also delivers consistent corn rootworm larvae control at a time when existing technologies are becoming inconsistent.

Nurizma® insecticide core messages

Leading Message	Nurizma insecticide is a novel in-furrow product that protects standability and yield potential where corn rootworm larvae poses an economic threat to on-farm productivity.
Agronomic Benefit Message	Nurizma insecticide is an in-furrow product that offers exceptional root protection from corn rootworm larval feeding to support more vigorous early-season plant growth and season-long crop benefits from healthier roots, including increased nutrient and water uptake, improved stress tolerance and greater crop standability until harvest.
Mode of Action Message	Nurizma insecticide has a novel site and mode of action and is the first Group 30 soil-applied insecticide registered for use in corn.
Ease of Use Message	Nurizma insecticide has a low use rate of 1 fl oz/A in corn. This means less product to store, handle and dispose.
Secondary Control Message	Nurizma insecticide offers control of secondary in-furrow pests like wireworms, white grubs and seed corn maggots.

Common objections

As with any new product introduction, your customers may have questions, apprehensions and objections you must be prepared to address. Here are some common objections to Nurizma[®] insecticide you may encounter, along with responses to address those customer concerns.

Objection	Response
<p>Customers may question how Nurizma[®] insecticide fits into an integrated pest management plan.</p>	<p>Nurizma insecticide is a in-furrow insecticide well-suited for growers who have high yield expectations and manage continuous corn rotations.</p> <p>Nurizma insecticide is beneficial on Bt-traited acres where a soil insecticide is desired for supplemental underground pest control. It is also an ideal solution for growers looking for a cost-effective way to protect their non-Bt-traited acres from underground pest damage.</p> <p>Nurizma insecticide offers a novel mode and site of action against underground pests, making it an ideal rotational solution when used in conjunction with other integrated pest management strategies such as GMO traits.</p>
<p>As a new product, customers may question the consistency and performance of Nurizma insecticide. Customers may also question how and why Nurizma insecticide is different than others on the market.</p>	<p>Nurizma insecticide is backed by the latest research and field testing. It features a novel mode of action to provide growers with an efficacious, cost-effective solution for in-furrow insect management.</p> <p>Nurizma insecticide has been shown to reduce larval corn rootworm at a level consistent with leading competitive products.</p> <p>Refer to regional trial results and root photos.*</p>
<p>Customers may question whether any additional equipment is needed to apply Nurizma insecticide.</p>	<p>An in-furrow liquid application system is necessary for Nurizma insecticide. Nurizma insecticide does not mix with liquid fertilizer. If liquid fertilizer is also being applied in-furrow, Nurizma insecticide must be applied using a separate unit like a Dosatron[®].</p>

*Refer to trial results and root photos on pages 2 and 3