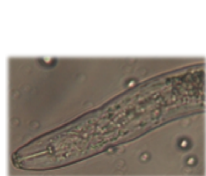




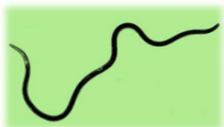
BIOST® Nematicide 100 is an innovative broad spectrum seed treatment nematicide with activity on early season nematodes and soil dwelling insects in corn



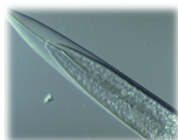
Lesion



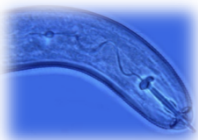
Stubby root



Sting



Dagger



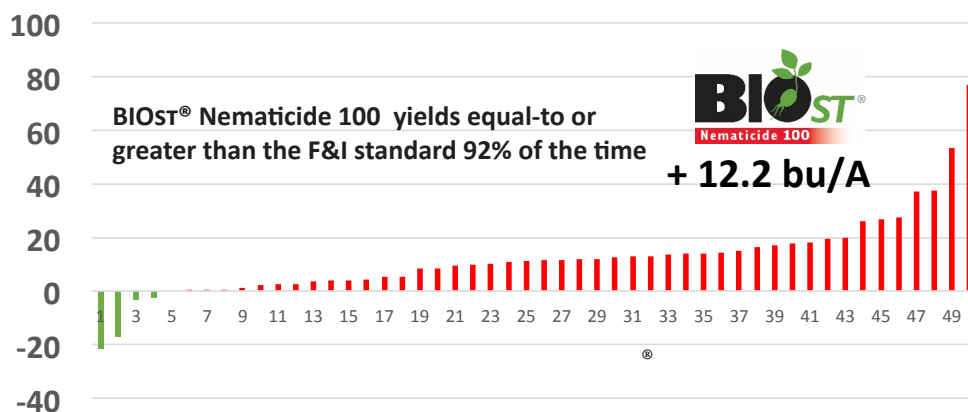
Root-knot

## What is BIOST® Nematicide 100?

- It is a seed treatment nematicide that kills nematodes within 24 to 48 hours
- It has activity on eggs and juveniles of the most important nematodes in corn – lesion, stubby root, sting, needle, stunt, dagger and root-knot nematode
- **BIOST® Nematicide 100** is a Bio-Nematicide derived from heat-killed *Burkholderia rinojensis* and its spent fermentation media – non-living
- It is a nematicide with multiple modes of action via enzymes and toxins
- It is a concentrated liquid formulation with 3 year shelf-life stability
- Compatible with most fungicide/insecticide combinations
- **Use rate on corn – 6 to 8 fl.oz./cwt**
- It also provides additional protection on soil dwelling insects (wireworms/seed corn maggot)

## Proven Field Performance (Yield Data)

Two Year Yield Comparison to F&I Check (bu/A)



- Field Sites were identified as having a history of corn nematodes or soil samples with above thresholds levels of pathogenic nematodes
- University, IPSA and contract research field trials - 50 trials in 8 corn growing states in 2016-2017
- Compatible with most seed treatments with 3 year stability

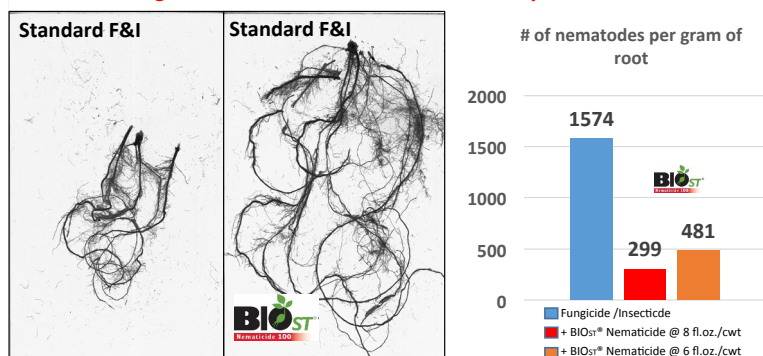
BIOST® Nematicide 100 is a broad spectrum nematicide



# Proven Technology Supported by Science

## Ph.D. Graduate Student Research - Mississippi State University

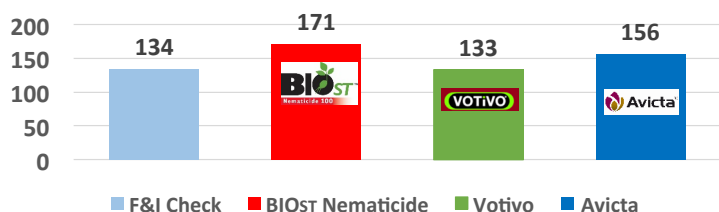
### Roots challenged with Root-knot Nematode for 60 Days



- BIOST® Nematicide improves root health by significantly increasing root volume, surface area and the number of root-tips over roots protected only a standard fungicide/insecticide
- BIOST® Nematicide significantly reduces the number of root-knot nematodes per gram of root at the 6 and 8 fl.oz./cwt rate over the standard fungicide/insecticide treatment

## Auburn University - Dr. Kathy Lawrence

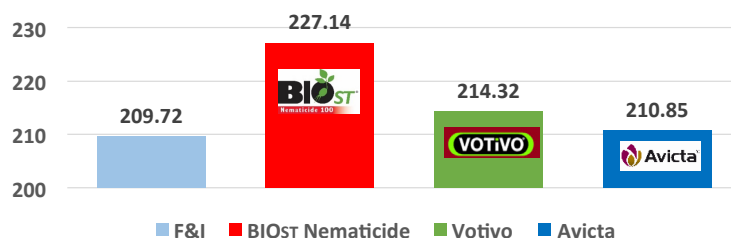
### Yield (bu/A) – Root-knot Nematode



- BIOST® Nematicide increased yields over the fungicide/insecticide standard and seed treated with Avicta and Votivo in a Root-knot infested field in 2017

## 2016/2017 University of Nebraska - Dr. Tamra Jackson-Ziems

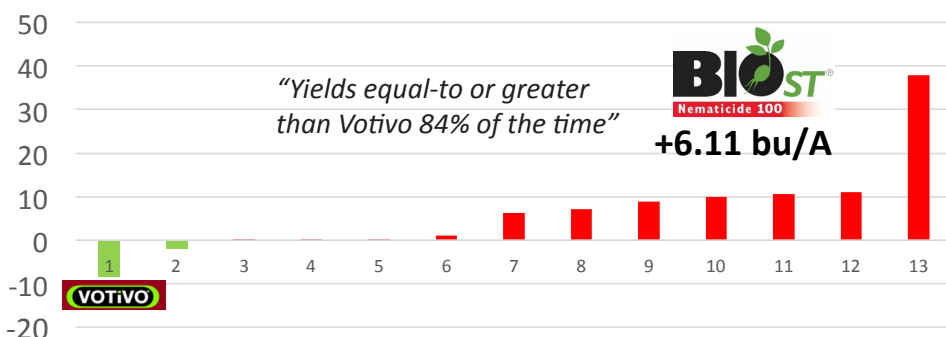
### Yield (bu/A) – Lesion Nematode



- BIOST® Nematicide increased yields over the fungicide/insecticide standard and seed treated with Avicta and Votivo in 2016 and 2017
- The two year average yield increase with BIOST® Nematicide over Votivo was 12.82 bu/A

## Proven Field Performance (Yield Data)

### Two Year Yield Summary: Votivo vs BIOST® Nematicide (bu/A)



- Field Sites were identified as having a history of corn nematodes
- University and contract research field trials - 13 trials in 8 corn growing states in 2016-2017

## 2017 Field Trials



- Field trial in Aurora, NE
- Nematodes: Lesion



- Field trial in Crawfordsville, IN - 2017
- Nematodes: Dagger, Needle and Stunt)

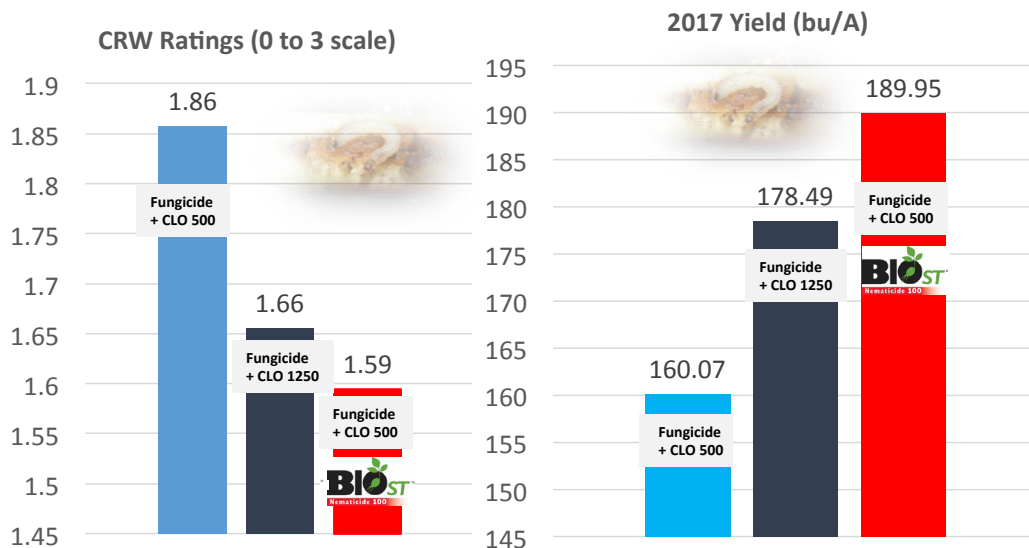


- Field trial in Remington, IN
- Corn on Corn rotation
- Pest Complex: Lesion nematode and Corn Root Worm



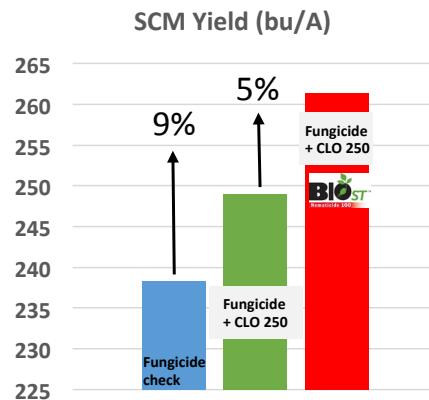
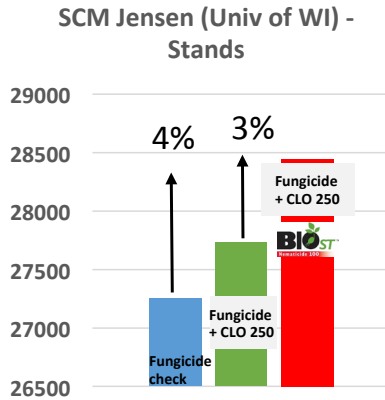
BIOST® Nematicide 100 also provides early season protection against soil dwelling insects in corn

## Early Season Soil Dwelling Insect Protection Corn Root Worm Trials - 2017

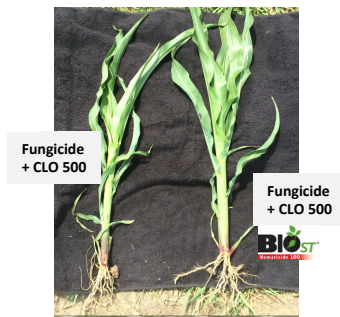


- 2017 Corn Root Worm (CRW) Trial Summary - 3 locations
- Sites have history of CRW with Corn on Corn rotations
- CRW damage ratings = 0 to 3 scale (ISU)
- BIOST® Nematicide 100 reduced CRW damage and increased yields by 15% over F&I standard (similar CRW reduction and yield to Clothianidin (CLO) 1250 rate

## Seed Corn Maggot Trial - 2017

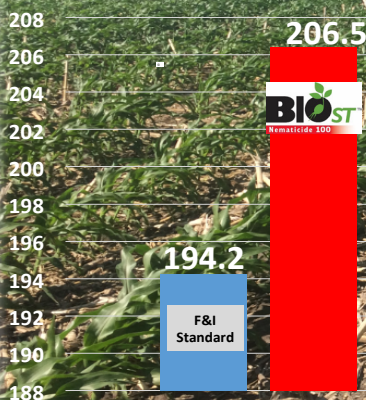


- Seed Corn Maggot trial – Dr. Jensen (Univ. of Wisconsin)
- BIOST® Nematicide 100 increased stands in a Seed Corn Maggot field by 4 and 3% over the Fungicide check and the F&I standard (CLO 250)
- BIOST® Nematicide 100 increased yields in a Seed Corn Maggot field by 9 and 5% over the Fungicide check and the F&I standard (CLO 250)



## Early Season Nematode Protection that enhances soil dwelling Insect Protection in CORN

### 2016/2017 Nematode Protection



Lesion, Stunt, Dagger, Stubby Root fields – 20 locations in Midwest

### 2016/2017 Insect Protection

When added with Clothianidin...



10% stand improvement in wireworm/ seed corn maggot fields



20% additional reduction in Corn Root Worm damage (similar to 1250 rate)

7 bu/A yield increase in CRW fields – similar to that of Clothianidin 1250 rate