



Outline

- Velum Prime Technical Introduction
 - *NC State data and impact to egg hatch
- Small plot data *Meloidogyne enterolobii*
- Tobacco Demo data and pictures
- Questions and Discussion

Forward-Looking Statements



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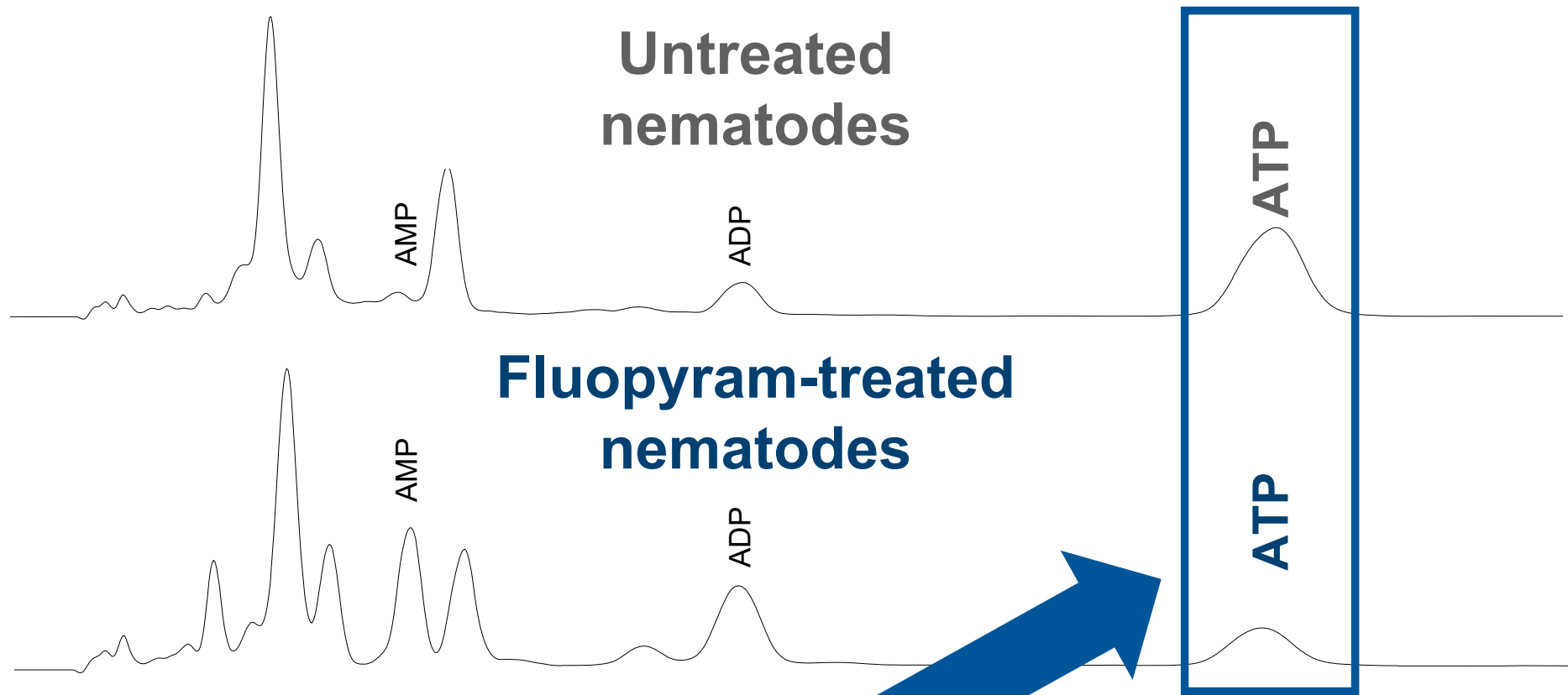


Product Details



- **Active Ingredient:** Fluopyram
- **Chemical class:** Pyridinyl-ethyl-benzamide (SDHI)
- **Mode of action / Target:**
 - Contact activity in nematodes
 - Xylem-mobile (systemic)
 - Reduces nematode egg hatch (Heterodera spp. and Meloidogyne spp.)
 - Selectively inhibits Complex II of the mitochondrial respiratory chain in Nematodes & Fungi

Fluopyram Reduces Energy Production Necessary For Life In Nematodes and Fungi



Nematodes treated with Fluopyram have less ATP (adenosine triphosphate) which is needed to fuel cells.

Video shows impact to energy production

Untreated



Treated with Velum[®]*

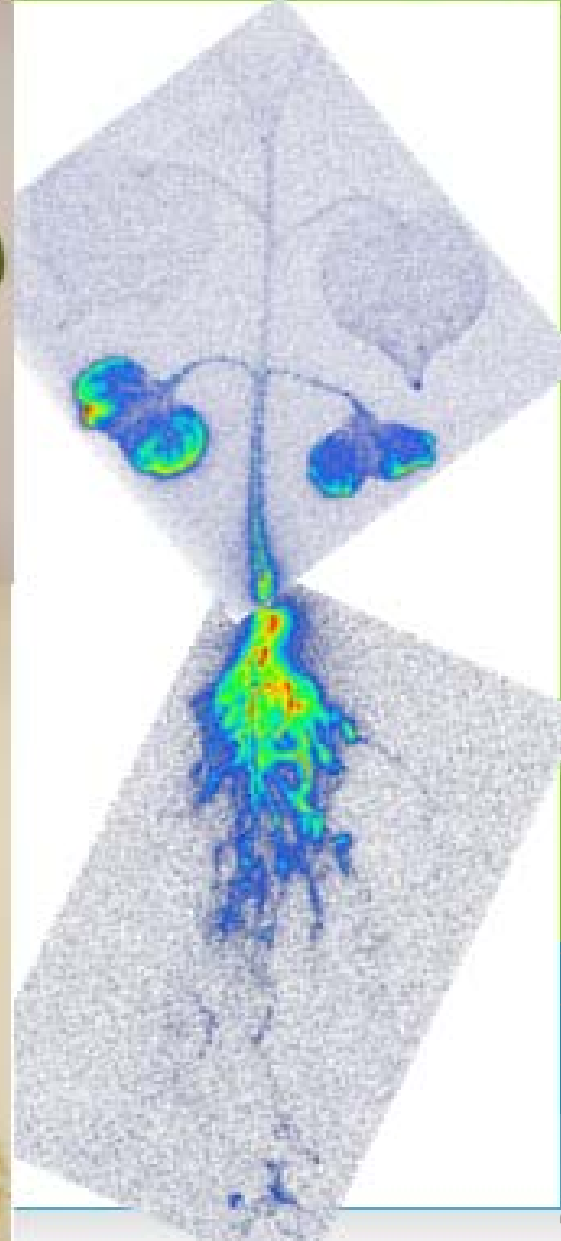
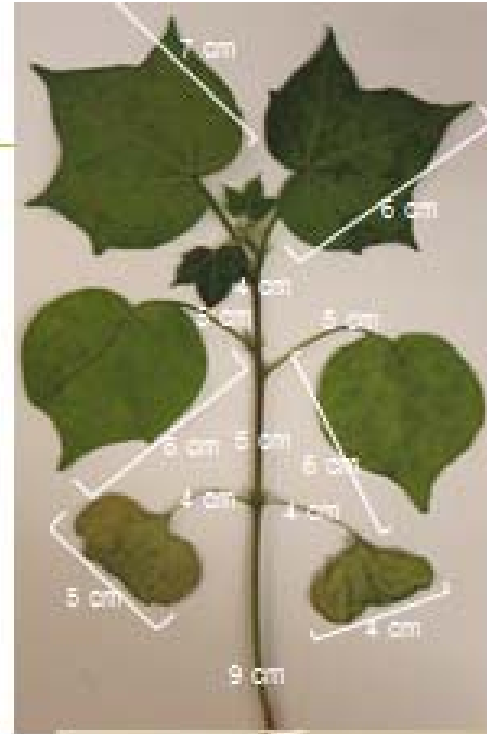


*Nematodes treated with the active ingredient in Velum[®] Prime

▶ Velum[®] Prime works by direct contact and shows systemic activity

The active ingredient in Velum®

**Xylem-mobile
(Systemic upward)**



Systemic Activity in Tomato Roots Reduced Nematode Damage



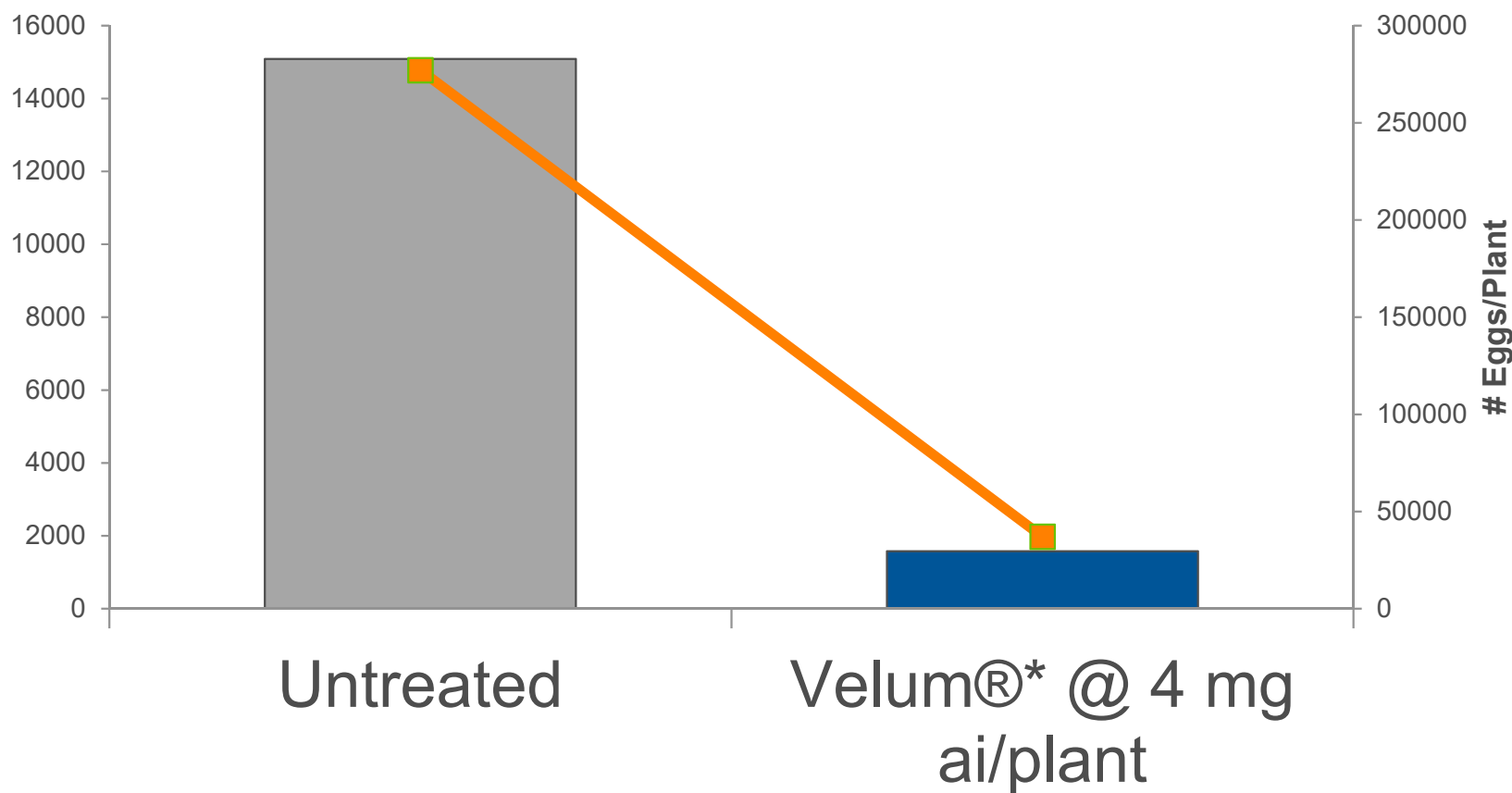
- 1) Root-knot nematodes were allowed to infest tomato plants.
- 2) Plants were transferred to clean soils (nematodes in roots only).
- 3) Plants were treated with Velum®*



Systemic Activity Reduced Nematode Damage and Numbers

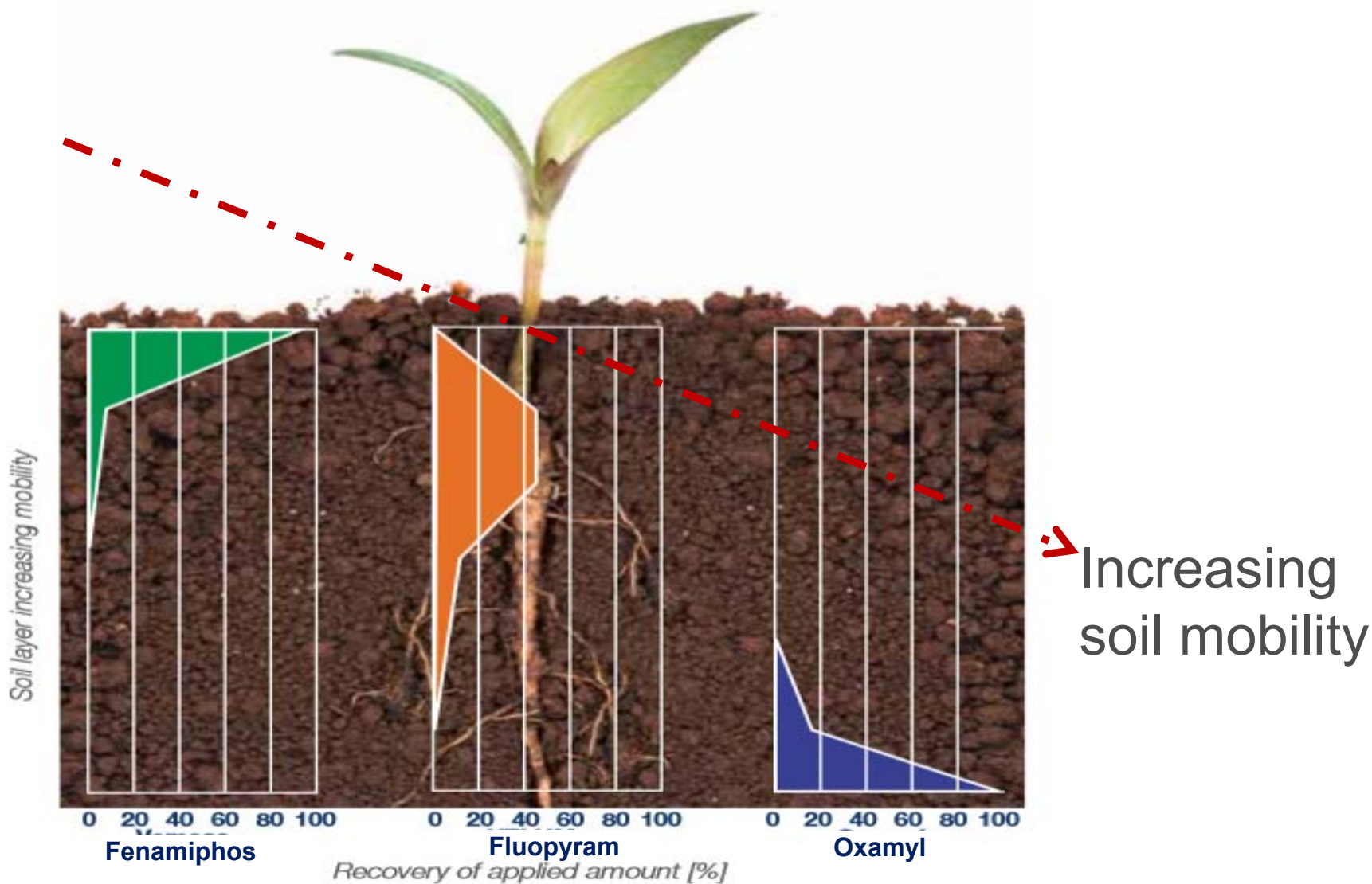


□ # eggs/gram of root ■ # eggs/plant





Velum Prime[®] remains in the root zone for efficient and long-lasting protection against nematodes



➤ Increasing soil mobility



Velum Prime[®] remains in the root zone for efficient and long-lasting protection against nematodes

Tobacco positioning for Velum[®]:

At-transplant drench right in the root zone

- Immediate protection from contact activity in the soil
- Uptake into the roots
- Also explored split applications but these do include an at-transplant drench which is the primary recommendation
- US details: Still developing Velum Prime for tobacco. Federal registration received later in 2017.



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Fluopyram: The new
nematicide and its
effects on *Meloidogyne*
incognita and
Heterodera glycines

Julia Heiken

Department of Entomology and Plant Pathology

11/18/16

Effect on Hatch Rate in *M. incognita* and *H. glycines*

- Baermann funnel technique adapted with bowls for *M. incognita* and *H. glycines*
 - 50 ppm Fluopyram
 - 35 ppm Fluopyram
 - 25 ppm Fluopyram
 - Untreated control
 - Solvent – Acetone triton
- Collected 3 times over a week, at each collection 3 counts made of 500 μ l each

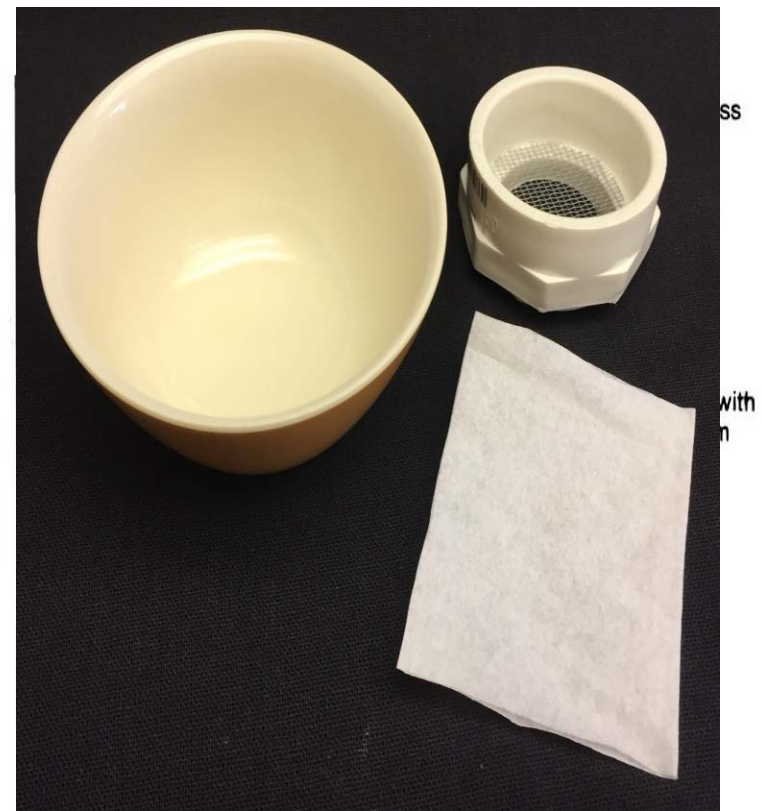
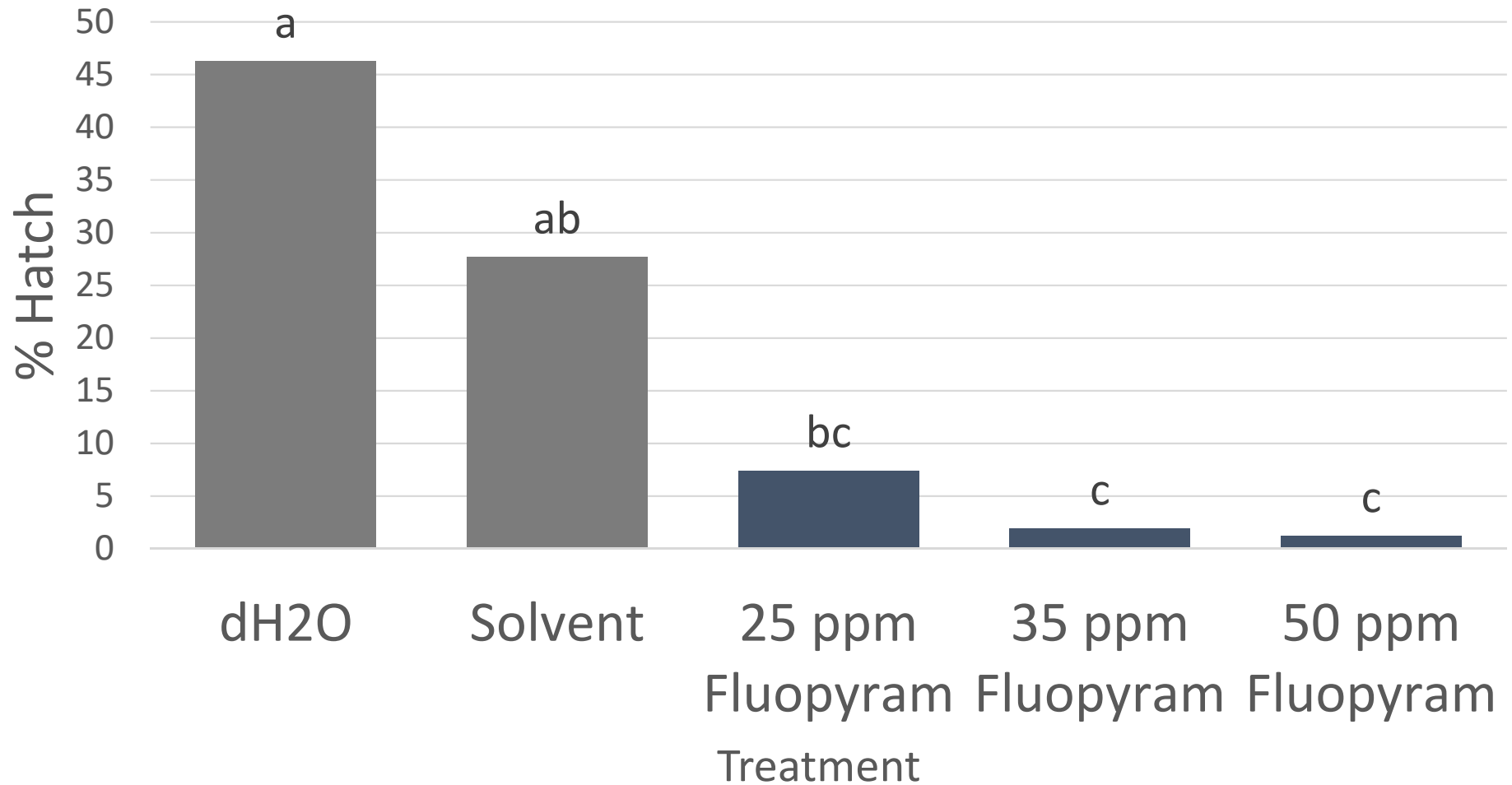


Fig.

Average Hatch Rate for *M. incognita*



Velum® Prime is not yet registered for sale or use on all crops in all states.

Tukey HSD
alpha=0.05



What Makes It Different?



- **Signal word:** Caution, not a restricted use pesticide.
- **Not a fumigant:** Ease of application, in-season application, and can be used to supplement fumigants for additional nematode management.
- **Xylem-mobile:** Systemic for suppression of nematodes. Soil and plant treatment.
- **Brand new MoA against nematodes:** Works quickly to slow and kill a broad spectrum of nematodes.



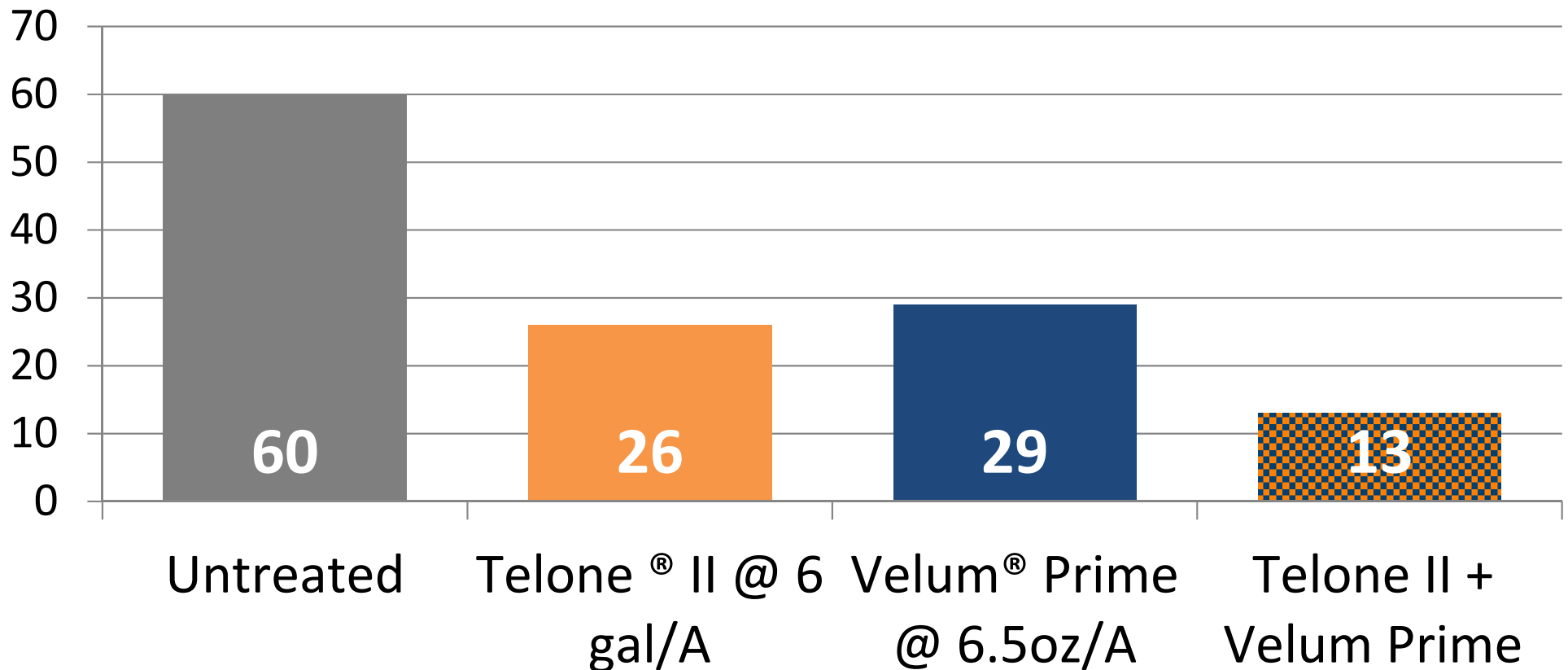
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*Heavy infestation of *M. enterolobii*
NC State University trial (2017)
Thiessen



Nematode damage (% Root galling)

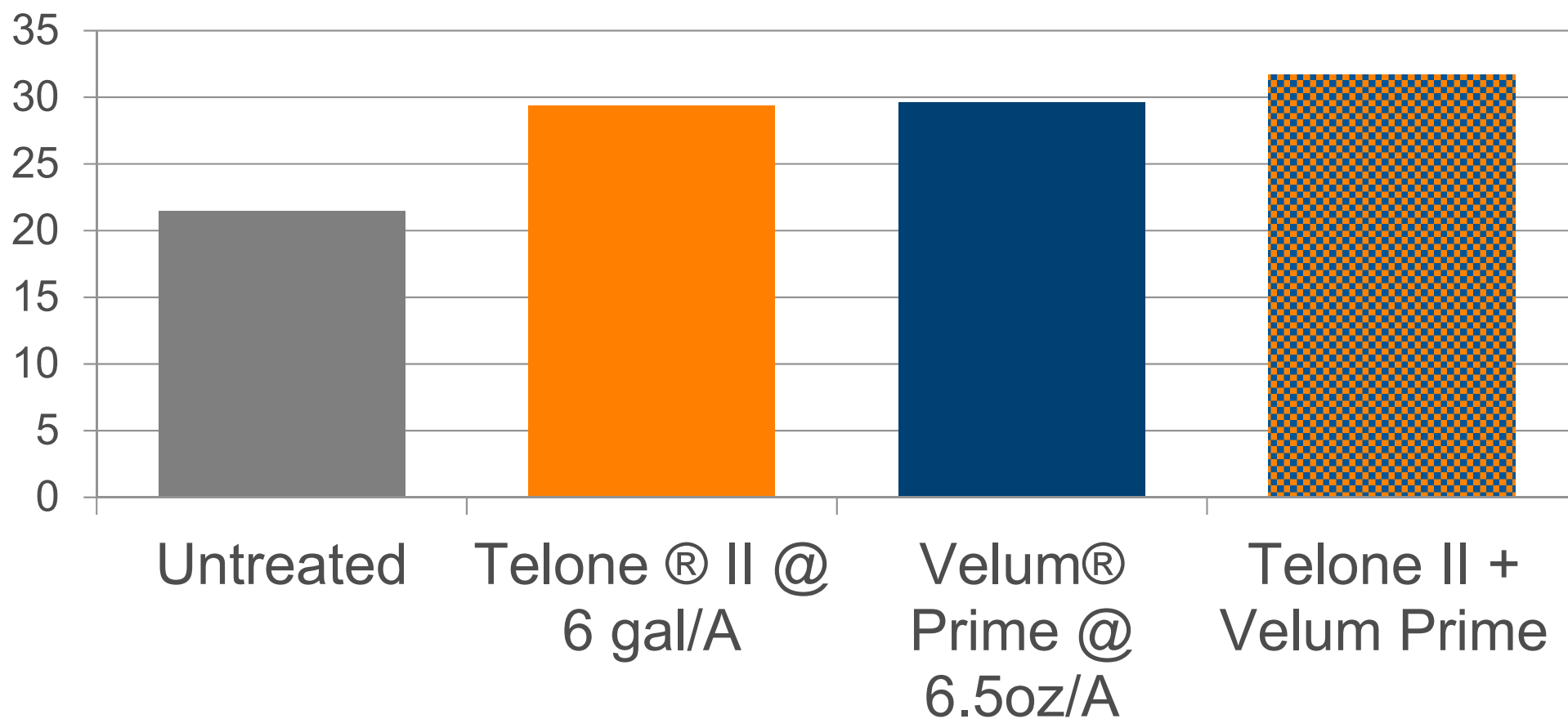


*Velum[®] treatments included a single application of Velum[®] Prime at labeled rates. Velum[®] Prime is recommended for nematode suppression. Telone[®] is a registered trademark of Dow Agrosciences.

Heavy infestation of *M. enterolobii*



Yield (kg/plot)



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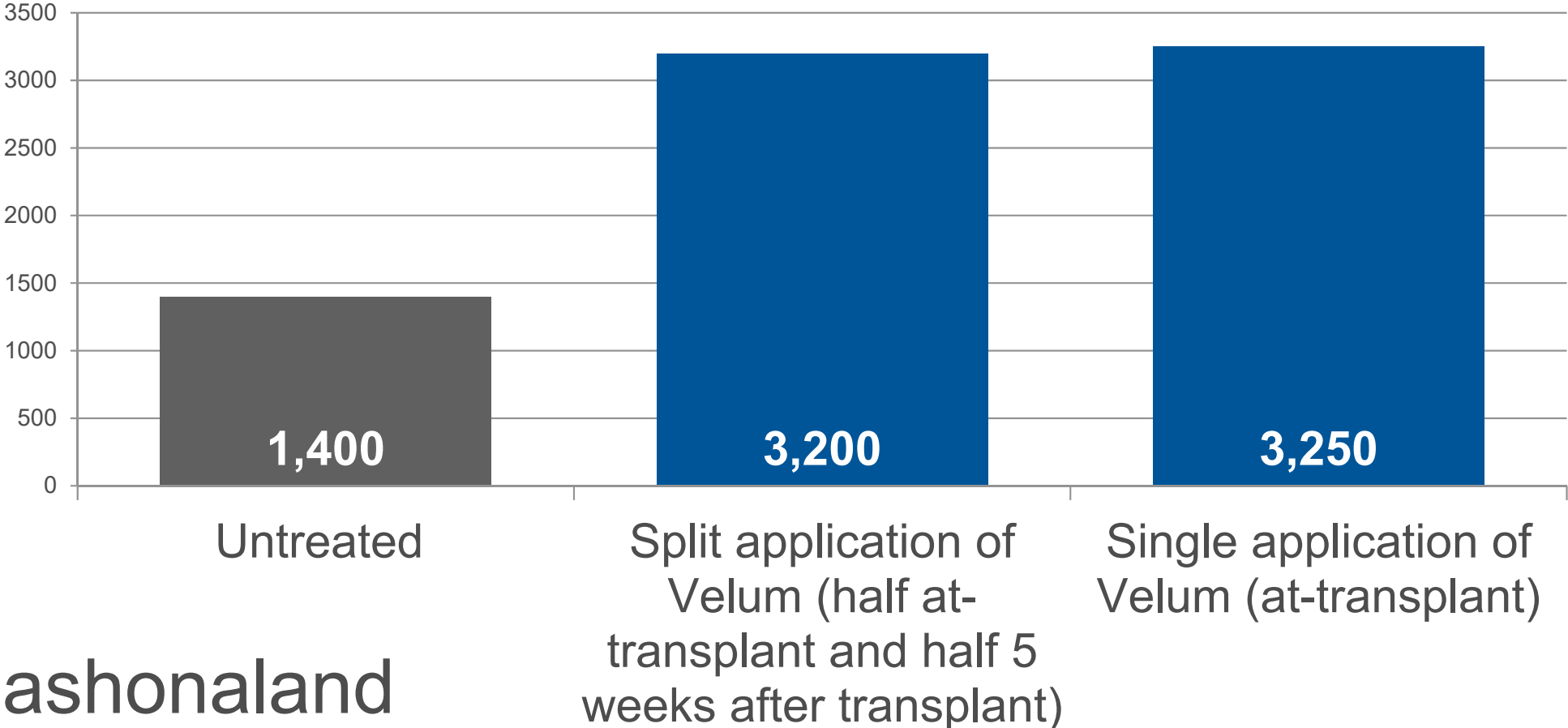
Mashonaland East Province



Untreated nematode damage rating was 2.25 (galling, 0-5 scale). No galling was observed on the Velum-treated plants



Yield estimate (kg/Ha) based on row yields



Mashonaland East Province

Beatrice Area, Mashonaland East Province

Velum treatment (single application at-transplant, 0.9lt/Ha) had no observable galling and the untreated average 1 (0-5 galling scale)

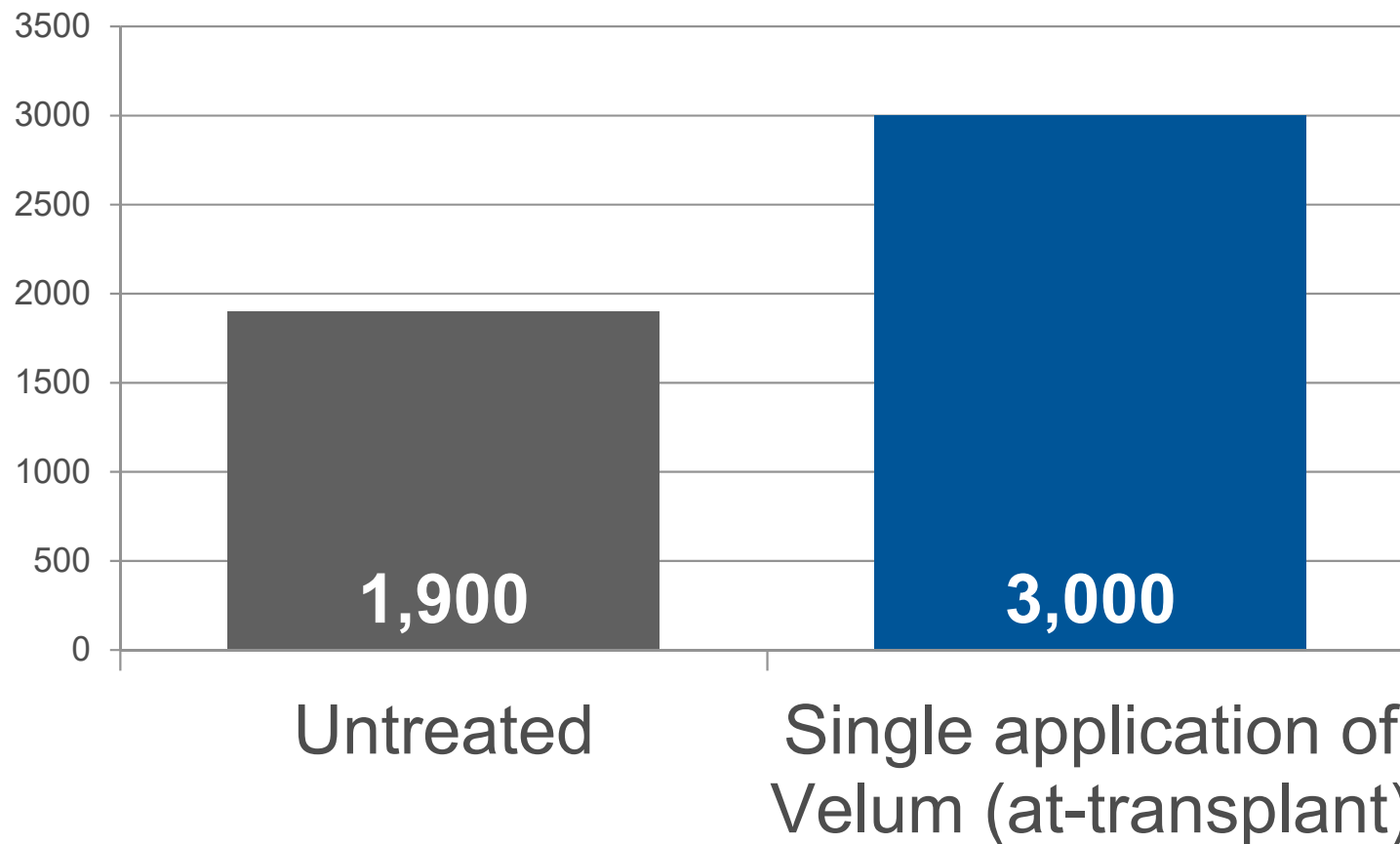


Beatrice Area, Mashonaland East Province



Velum® treatment (single application at-transplant, 0.9lt/Ha) had no observable galling and the untreated average 1 (0-5 galling scale)

Yield estimate (kg/Ha) based on row yields



Average Leaf length (cm)

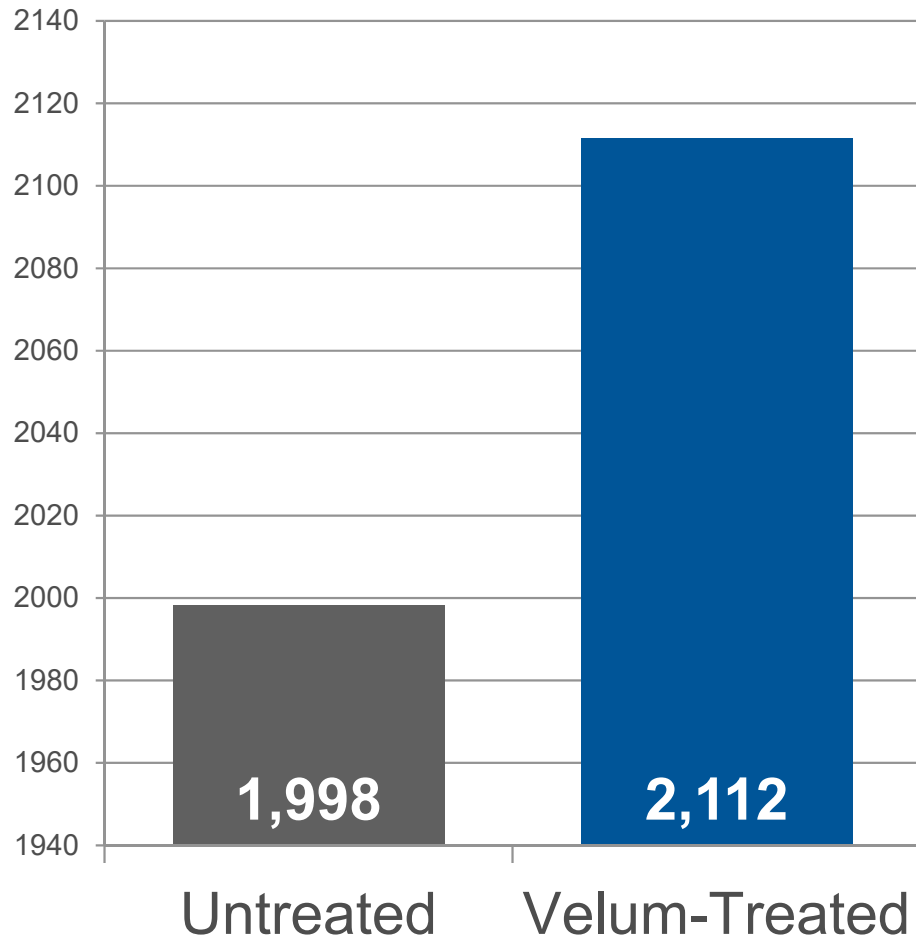
55-60cm

85-90cm

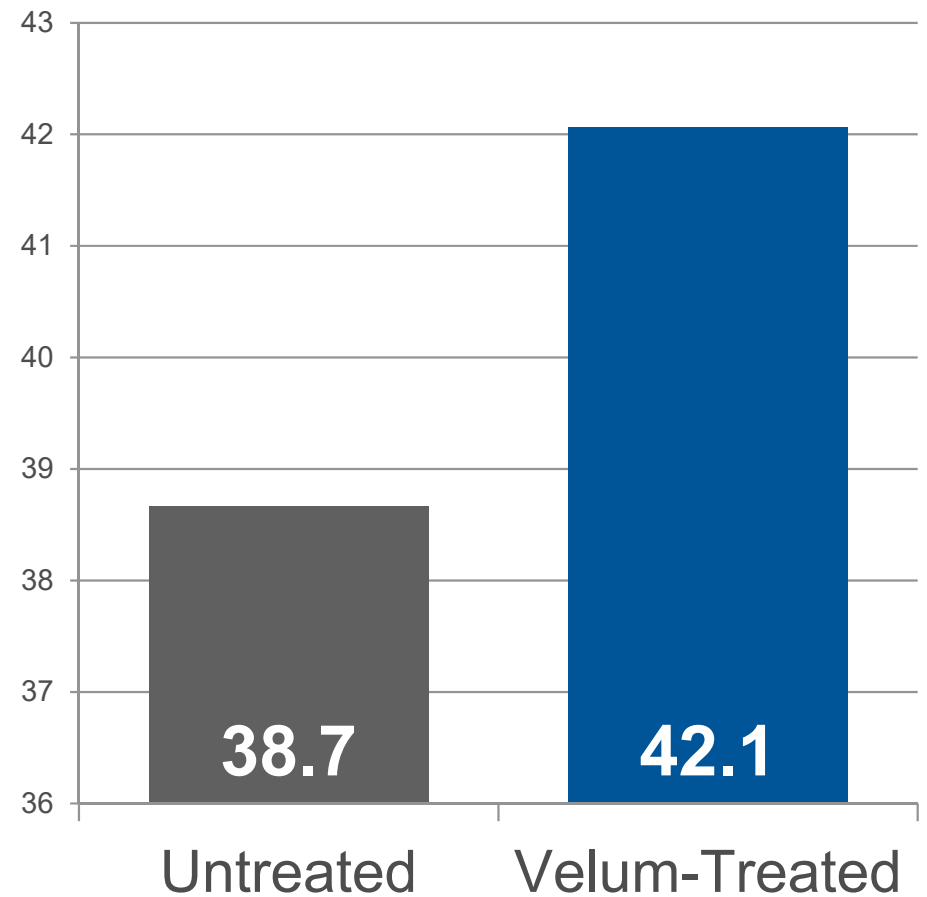
Mashonaland West



Average Yield



Leaf Size (cm)



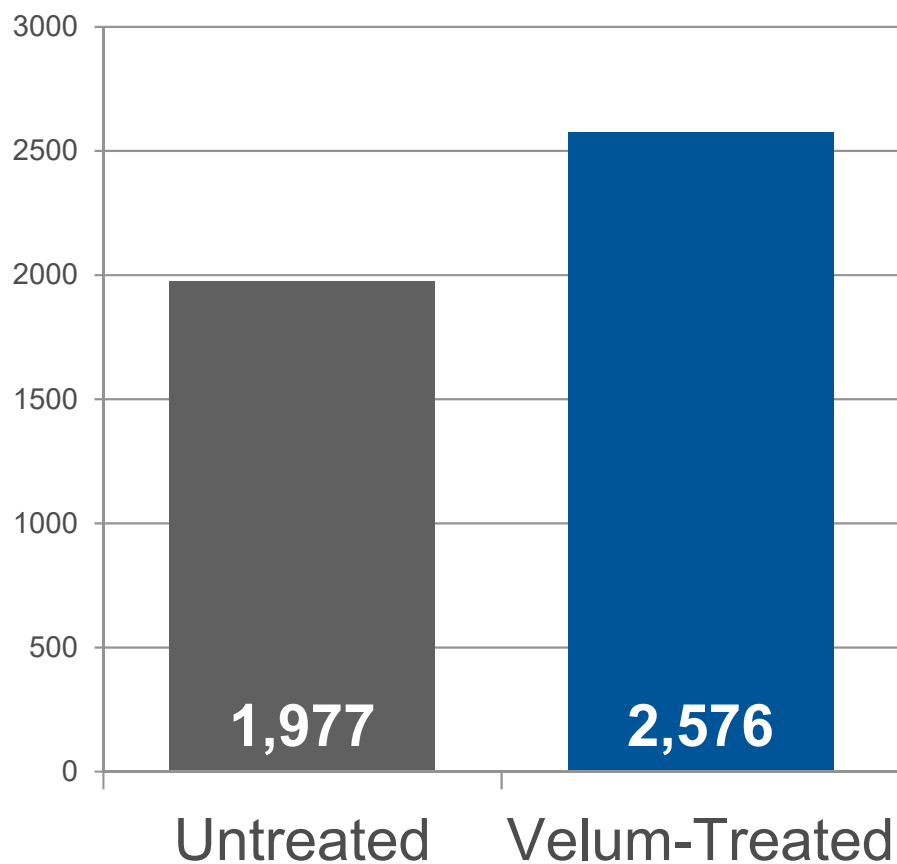
Mashonaland West



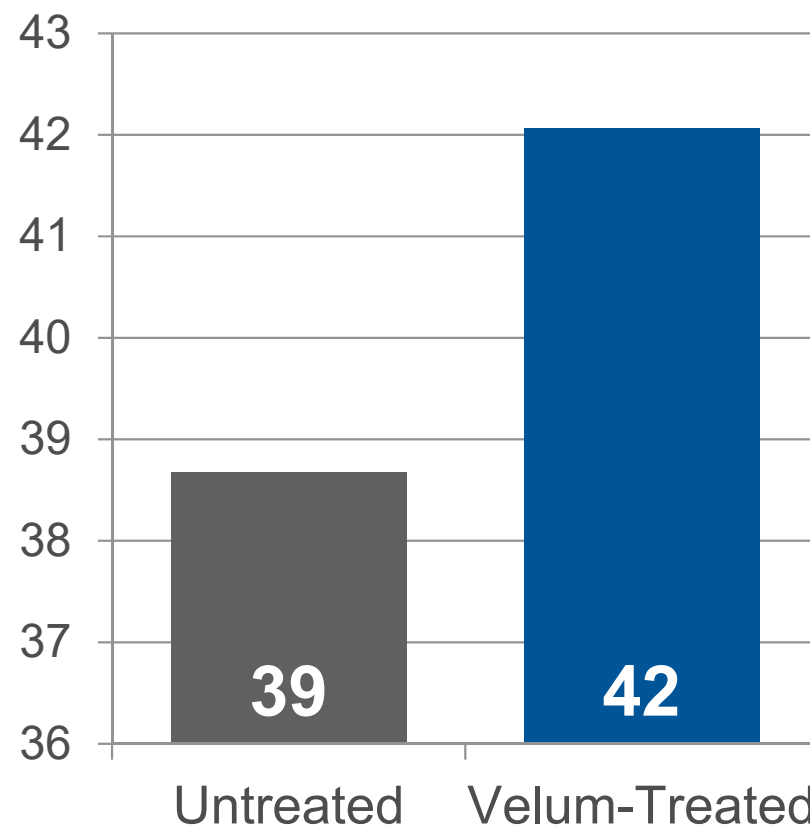
Mashonaland Central



Average Yield



Leaf Size (cm)



Mashonaland Central





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Thank you for your attention!

Questions?



Untreated

