

# Evaluation of Alternative Nematicides for the Control of Root-Knot Nematodes in Processing Tomatoes

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# Symptoms

- Roots deformed due to galls
- Plants stunted and less vigorous
- Roots unable to sustain the water and nutrients needs of plants
- Reduced yield and poor fruit quality



# Why???

- Resistant cultivars

Instances of breakdown of MI gene resistance

- Pre-plant fumigation

Expensive, environmental safety concerns

New fumigant regulations by DPR

# Objectives

Conduct small plot field trials to evaluate the efficacy of Nimitz, Salibro, Velum, Calcium Cyanamide and a developmental product

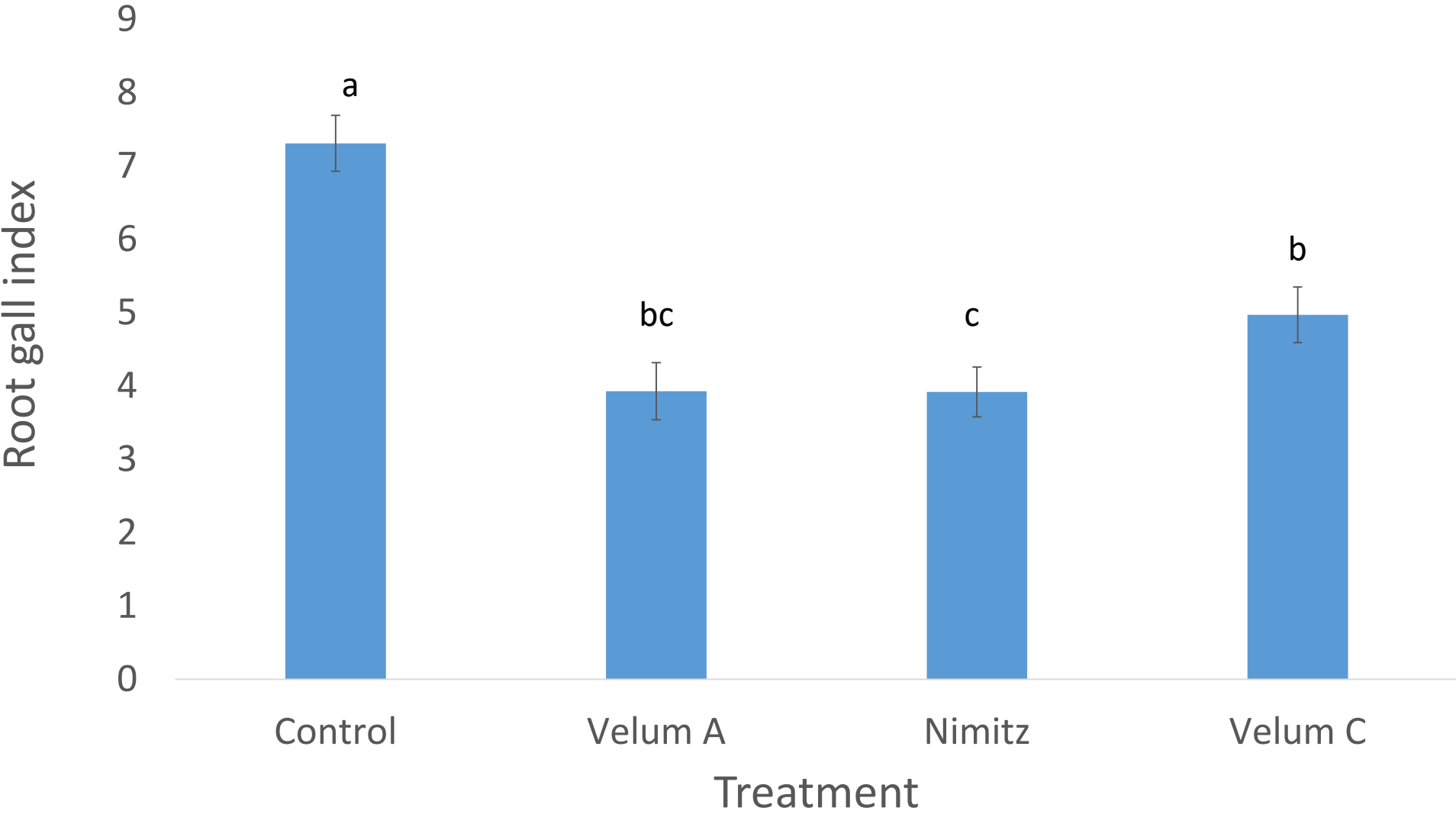
Most of these newer nematicides are relatively safe with only 'Caution' on the label

Trials in 2019 and 2020

# 2019 trial

- Trial planted on: June 26
- Four treatments:
  1. Untreated control
  2. Velum 0-1 week after planting (Velum A); applied July 1
  3. Nimitz: Applied June 26
  4. Velum 1-4 week after planting (Velum C); applied July 10
- 20 feet plots (60' beds) with a 2 feet buffer between plots
- Root galling index: 0-10 (0= no visible galls 10 extensive galling)

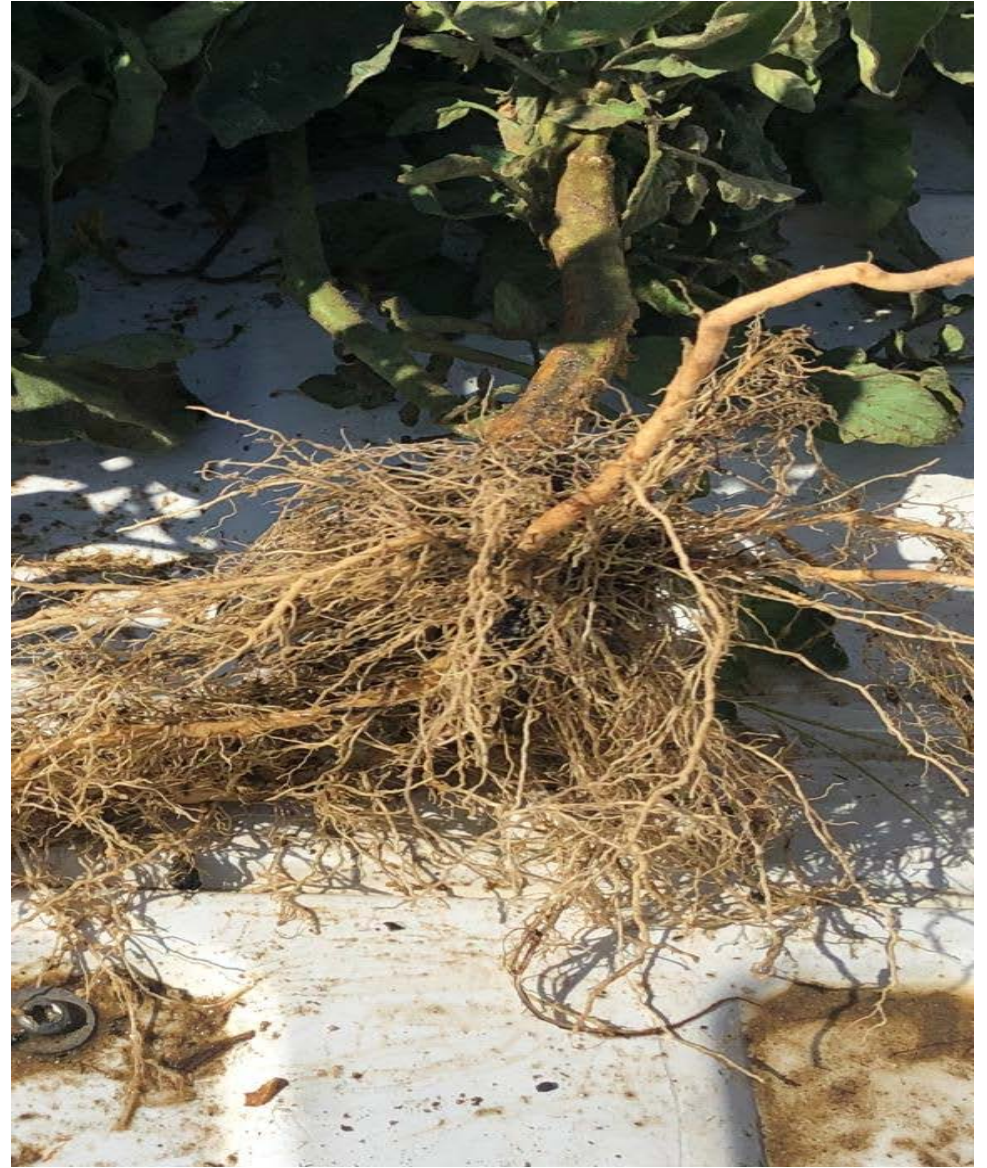
# Galling on tomato roots caused by root knot nematode



P<0.0001



Control



Nimitz



Nimitz



Velum C



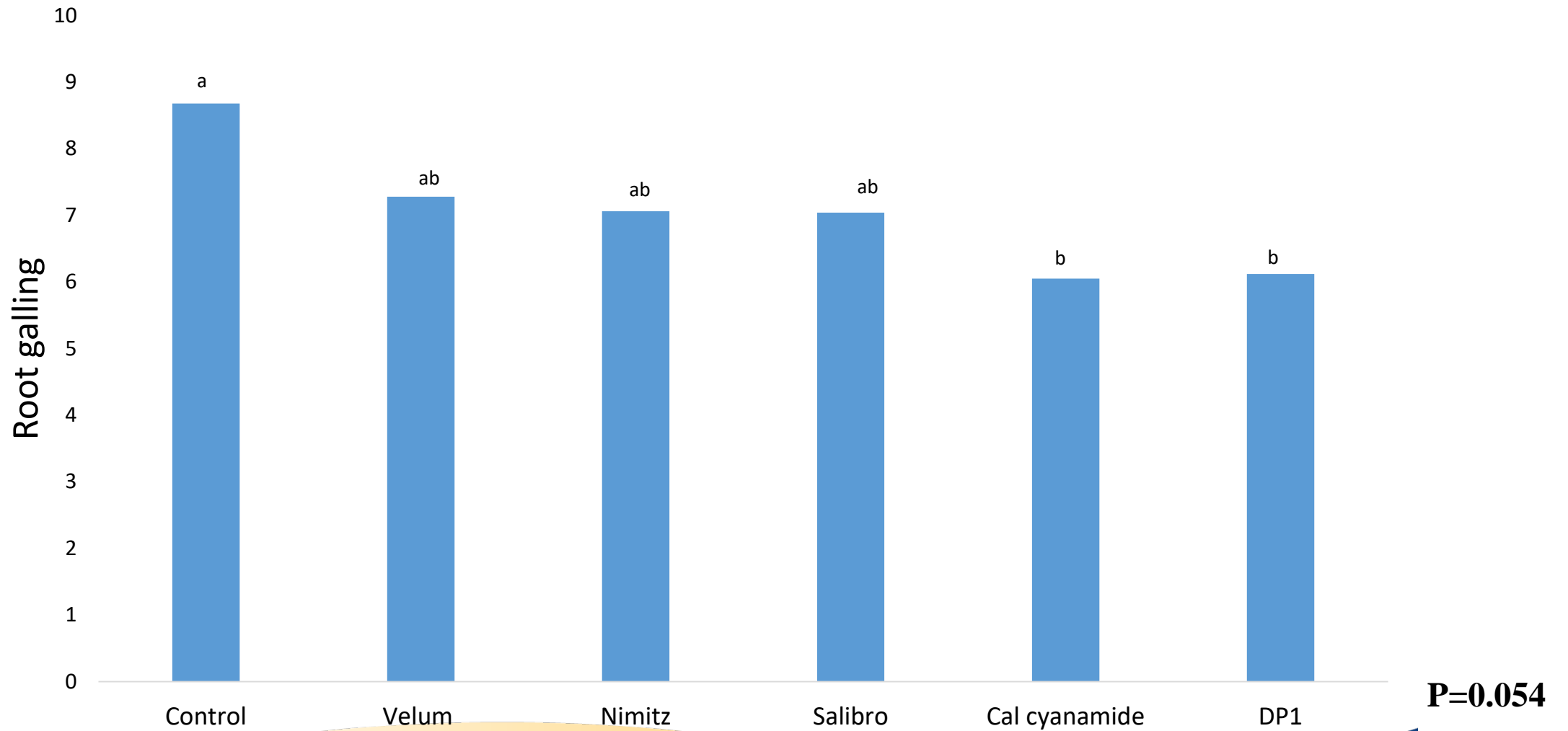
# 2020 trial

- Nematode nursery at the farm
- Replicated block design with 5 replications
- Tomato variety 'Halley' was hand transplanted on July 1
- Treatments applied either as a pre-plant or post-plant
- At harvest, tomato roots from each plot were evaluated for root galling (scale of 0-10)
- Data analyzed in SAS

# Treatments

<b>Trt</b>	<b>Application time</b>	<b>Rate /Acre</b>	<b>Date applied</b>
<b>Control</b>			
<b>Velum</b>	At planting	6.5 Oz/ A	07/01/2020
<b>Nimitz</b>	At planting	5 pt/ A	07/01/2020
<b>Salibro</b>	At planting, 28 d after planting	30.7 fl oz/A	07/01/2020 July 28, 2020
<b>Calcium cyanamide</b>	At planting Soil incorporated	200lbs/ A	07/01/2020
<b>DP1</b>	At planting	11.4 fl oz/ A	07/01/2020

# Galling on tomato roots caused by nematodes





1. Non-treated control



2. Velum



3. Nimitz



4. Salibro



5. Calcium Cyanamide



6. DP1



Comparison of different treatments

# Moving forward

Continue evaluation and validation more on these products or any other new products in the field

Mid season evaluations

More evaluations on motility of some of these products

# Acknowledgements



# Thank you