

Cucurbit Research Update

Josh Freeman

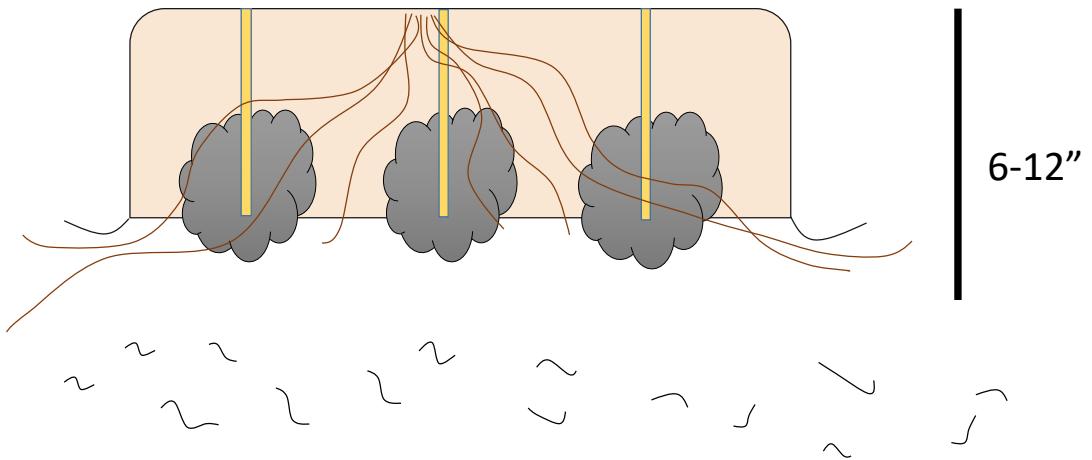
UF IFAS North Florida Research and Education Center
Quincy, FL

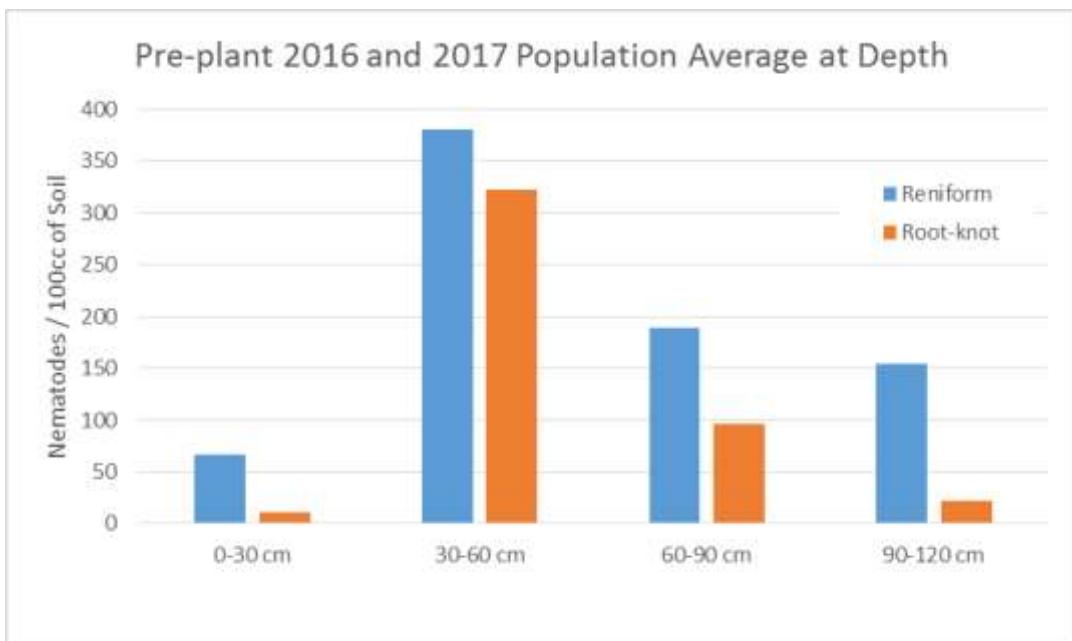
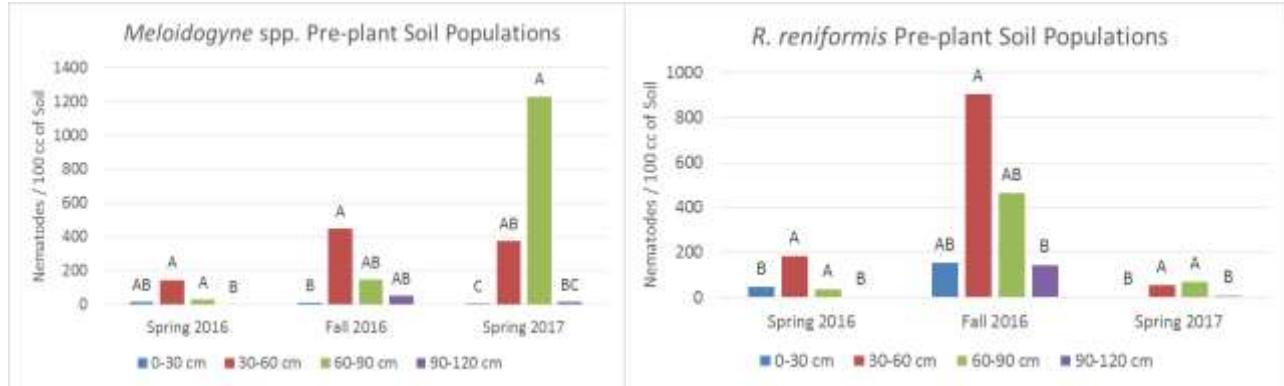


2018?

- We have had significant cold weather so far
- I don't expect virus issues during spring production
- I still believe that fall 2018 cucurbit and tomato production is risky
 - TYLCV Resistant varieties are available





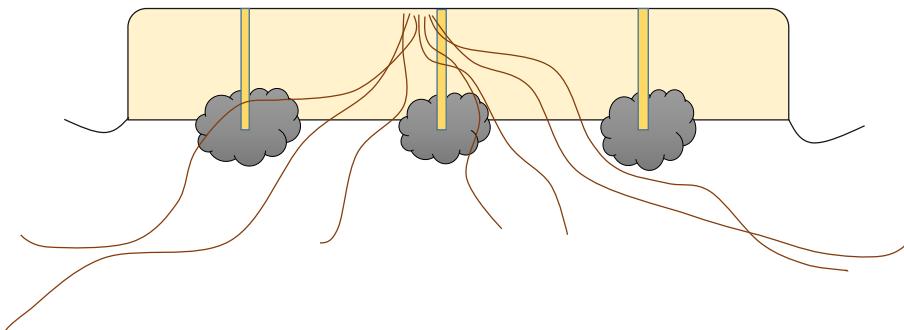


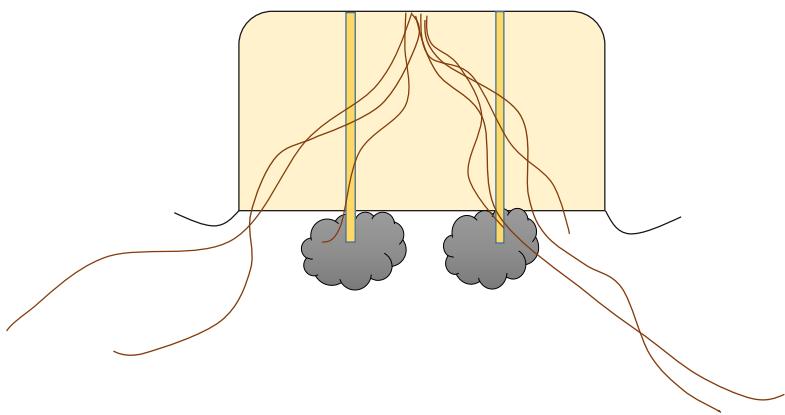
Treatment	60 Day RGI	90 Day RGI	RKN/g root
Non-treated control	6.1 a	7.5 a	9.5 ab
Nimitz	3.3 b	6.8 ab	5.0 bc
Velum	3.1 b	5.8 b	10.5 a
Velum fb Vydate	2.1 c	3.8 c	4.0 c
Vydate	1.6 c	4.4 c	2.1 c
Salibro	1.6 c	3.4 c	3.2 c



Management of FON

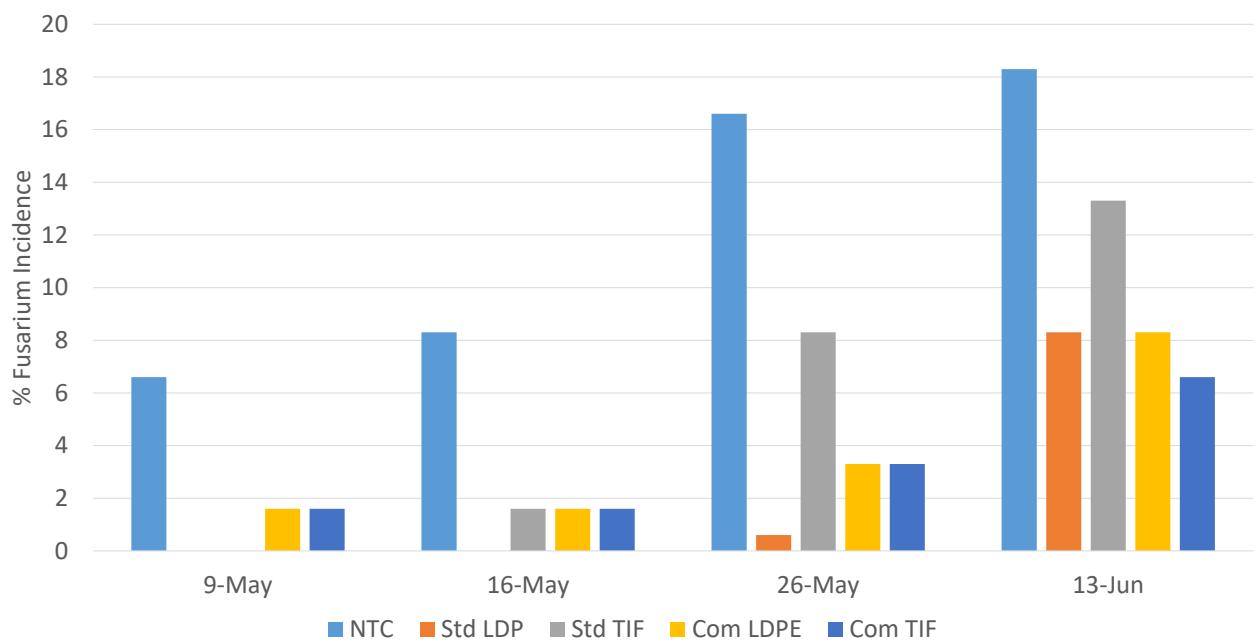
- Resistant watermelon cultivars (**Race 1 resistant seedless cultivars**)
- Crop rotation (**5** years between watermelon; may not work)
- Disease-free transplants
- Grafted seedlings
- Soil application with Proline (5.7 fl oz/A)







Fusarium Wilt Incidence - Cordele GA 2017



Financial Implications

- Pic-Clor 60 200 lb/ac 30" bed, 8' row spacing (\$4.05/lb) = \$252/acre
- Pic-Clor 60 200 lb/ac 15" bed, 8' row spacing = \$126/acre

Materials and methods



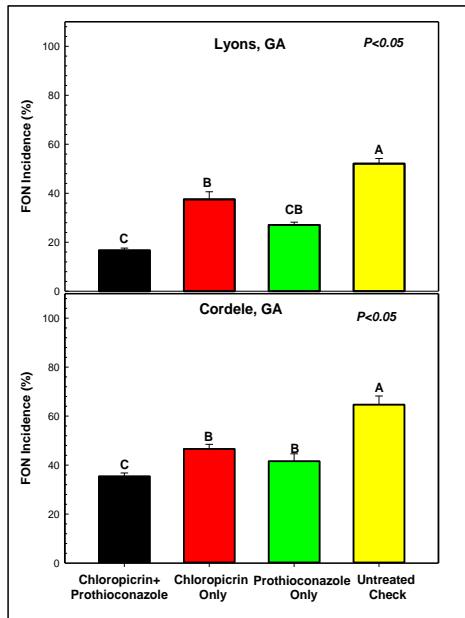
- Mid-March: Fumigation at 200 lb/a of Chloropicrin applied and covered with plastic mulch
- 2nd week of April: plots transplanted
 - Tri-X 313 (seedless)
 - Tri-X 313 scion w/ squash root stock RZT148
 - SP6 pollinizer

Materials and methods

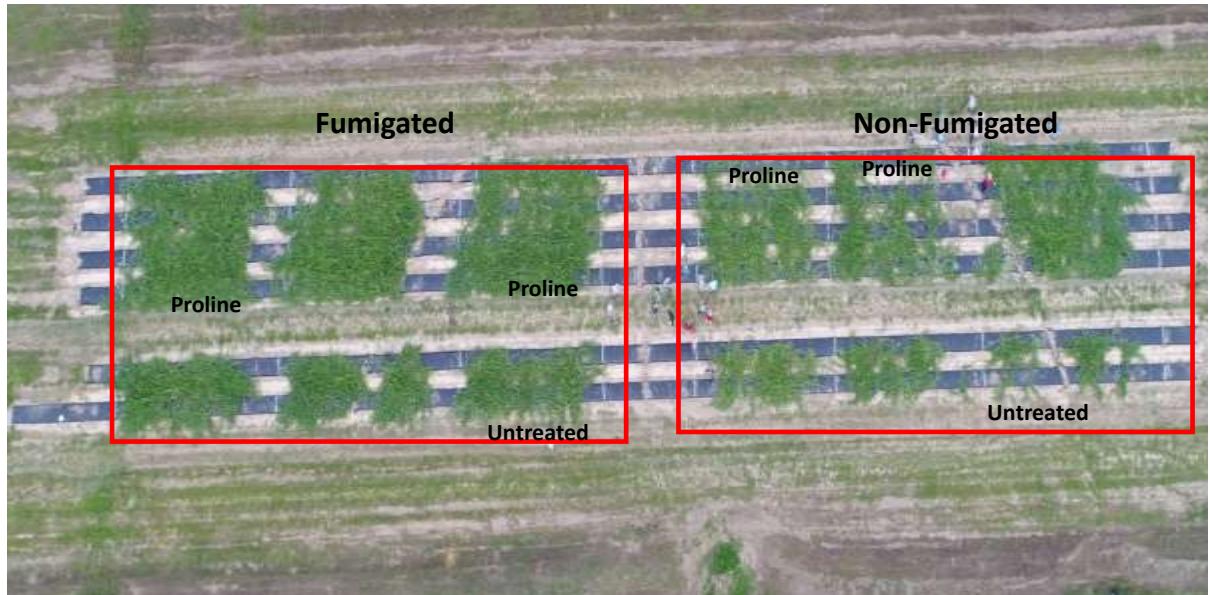
- Three applications of Proline
 - Rate: 5.8 fl oz/ac
 - CO₂ drip tape injection
- Additional pest control conducted according to UGA recommendations
- Disease Ratings (grafted plants monitored separately)
- Late June: melon harvest
 - Marketable yield
 - Marketable ≥ 12.5 lb or more



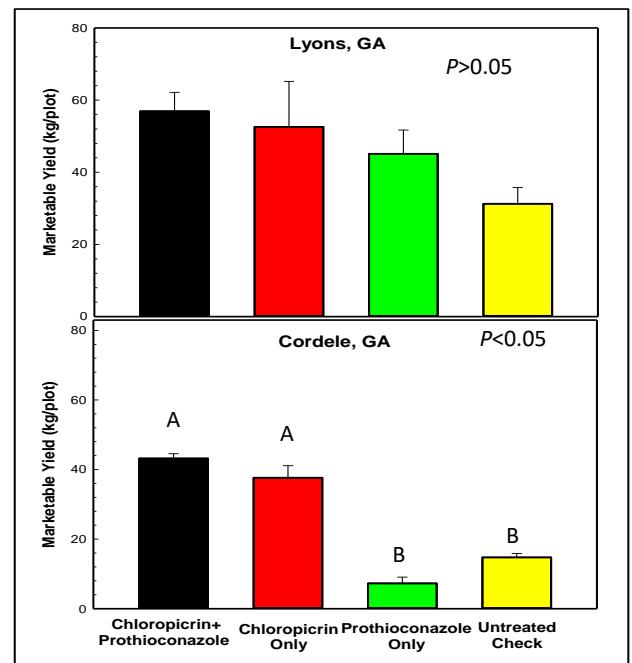
Effect of fumigation and fungicide on Fusarium wilt incidence



Aerial view of plots at Cordele, GA



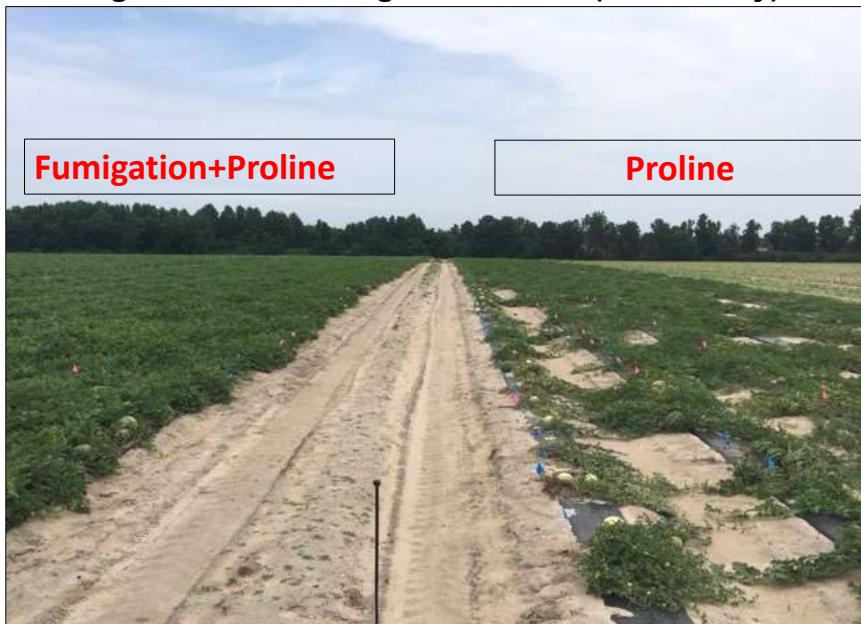
Effect of fumigation and fungicide on marketable yield



Summary and future directions

- Pre-plant application of chloropicrin and post-plant application of prothioconazole significantly decreased FON incidence.
- Future Studies:
 - Bed architecture
 - Fumigant placement
 - Frequency of prothioconazole application in FON management
 - Plus economics

Fumigation trial at the grower's field (Tift County)





Paladin Vapam



Treatments

- Non-treated control
- 34 GPA 100% DMDS
- 40 GPA 79:21 DMDS:Pic (w:w)
- 40 GPA MNa
- 50 GPA MNa
- 34 GPA DMDS + 40 GPA MNa
- 34 GPA DMDS + 50 GPA MNa

Fumigant Application

- DMDS and DMDS:Pic deployed 8 inches below bed surface
- MNa deployed 4 inches below bed surface
- DMDS + MNa applied simultaneously
 - DMDS deployed 8 inches
 - MNa deployed 4 inches

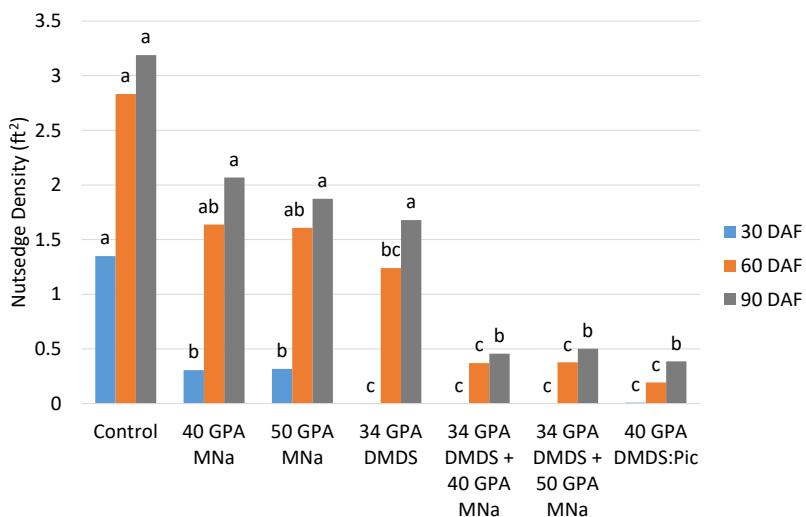




Methods

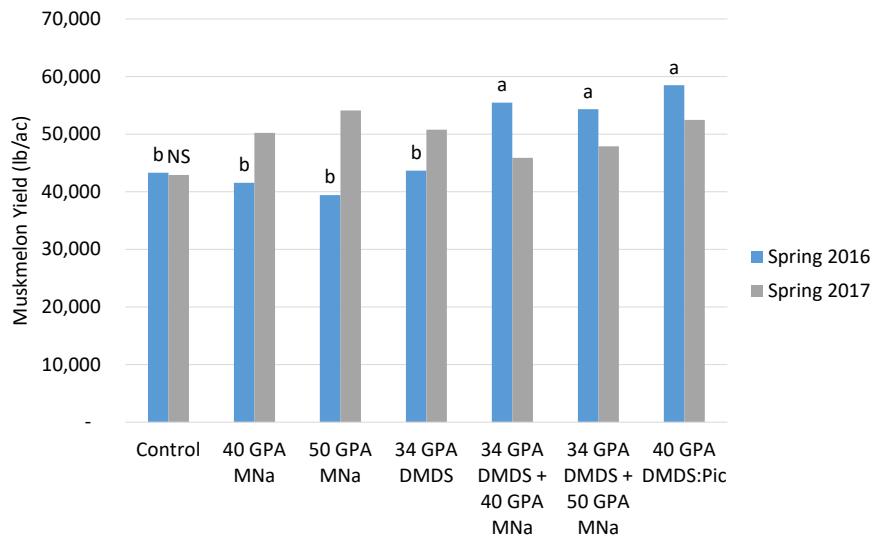
- Two years – spring 2016 and spring 2017
- Four replications
- Bed width: 2.5' Bed height: 8"
- Three dual port back-swept shanks
- 1.25mil white-on-black Berry TIF
- Muskmelon transplanted
- Nutsedge population data collected 30, 60, and 90 DAF

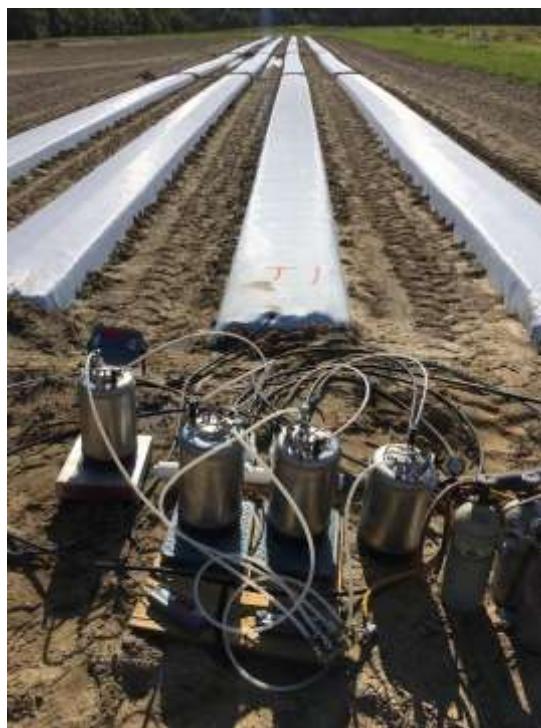
Nutsedge Populations 2016-2017



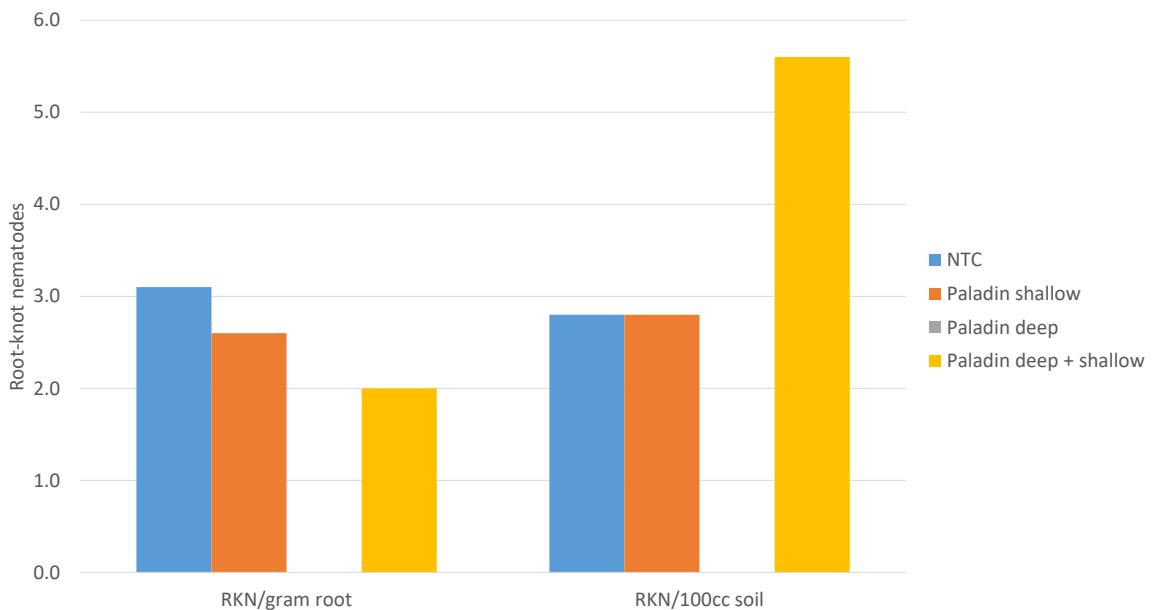
*Means compared within DAF

Muskmelon Yield





Paladin Deep Drip - Fall 2017



	Nutsedge Yield / sqft (lb/acre)	RKN root	REN root	RKN soil	REN soil	RGI (0-10)
NTC	1.2 ns	27307 b	3.1 ns	0.8 ns	2.8	93.5 ns
Paladin shallow	0.4	37661 a	2.6	0.0	2.8	5.7
Paladin deep	0.0	41365 a	0.0	0.0	0.0	90.7
Paladin deep + shallow	0.0	38438 a	2.0	0.0	5.6	0.0 b



Funding



United States Department of Agriculture
National Institute of Food and Agriculture





Questions?