



Fumigation trial update

Ryan Nadel



Rayonier: Elberta, Alabama

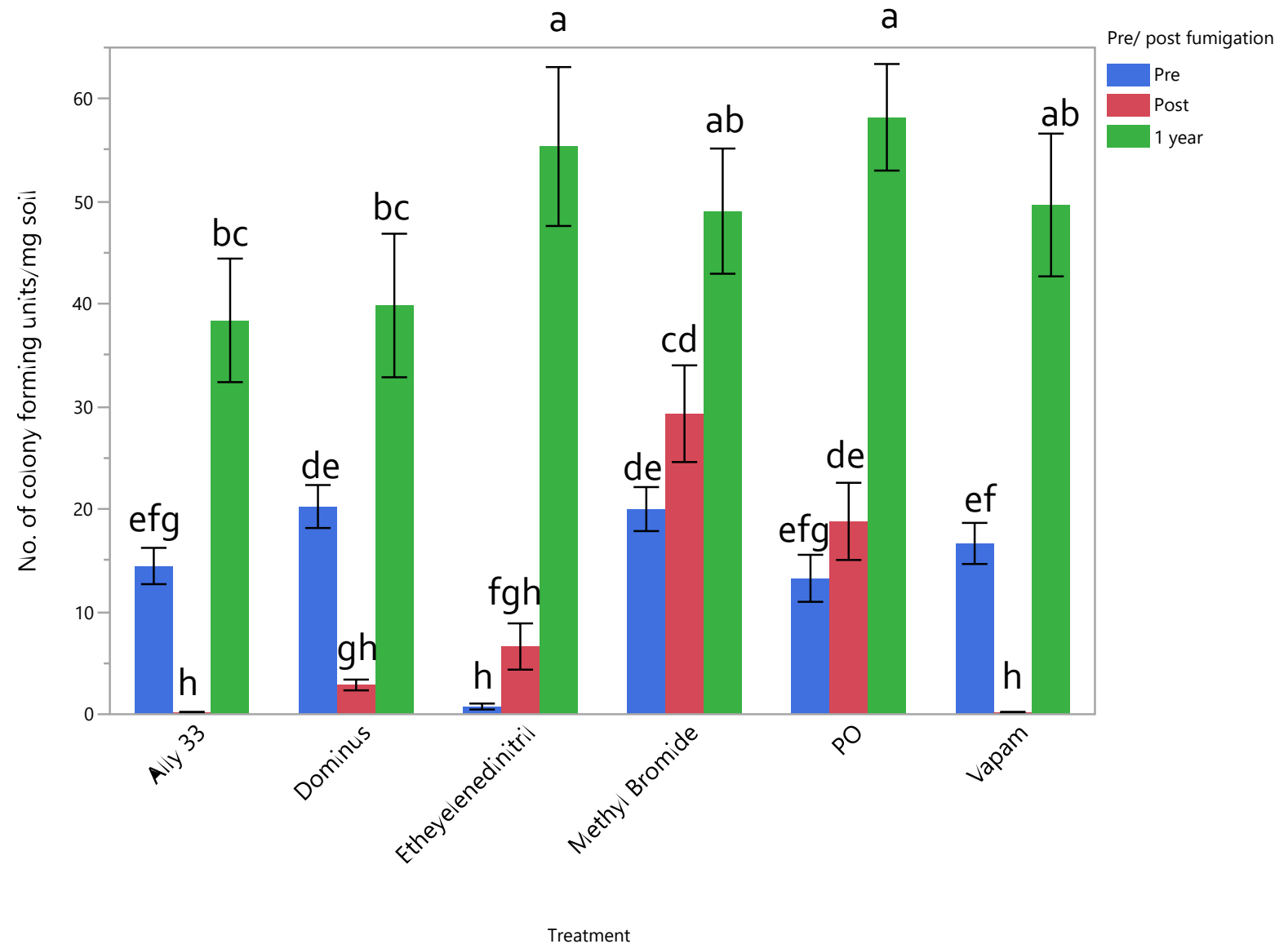
November 2016



Fumigation trial

Treatment	Rate
Methyl Bromide (80/20)	350 lbs./ac
Ethylene dinitril (EDN)	500 lbs./ac
Ally 33 (67% Dominus + 33% Pic)	500 lbs./ac
Propylene Oxide	600 lbs./ac
Dominus (AITC)	500 gal./ac
Vapam (SMDC)	75 gal./ac

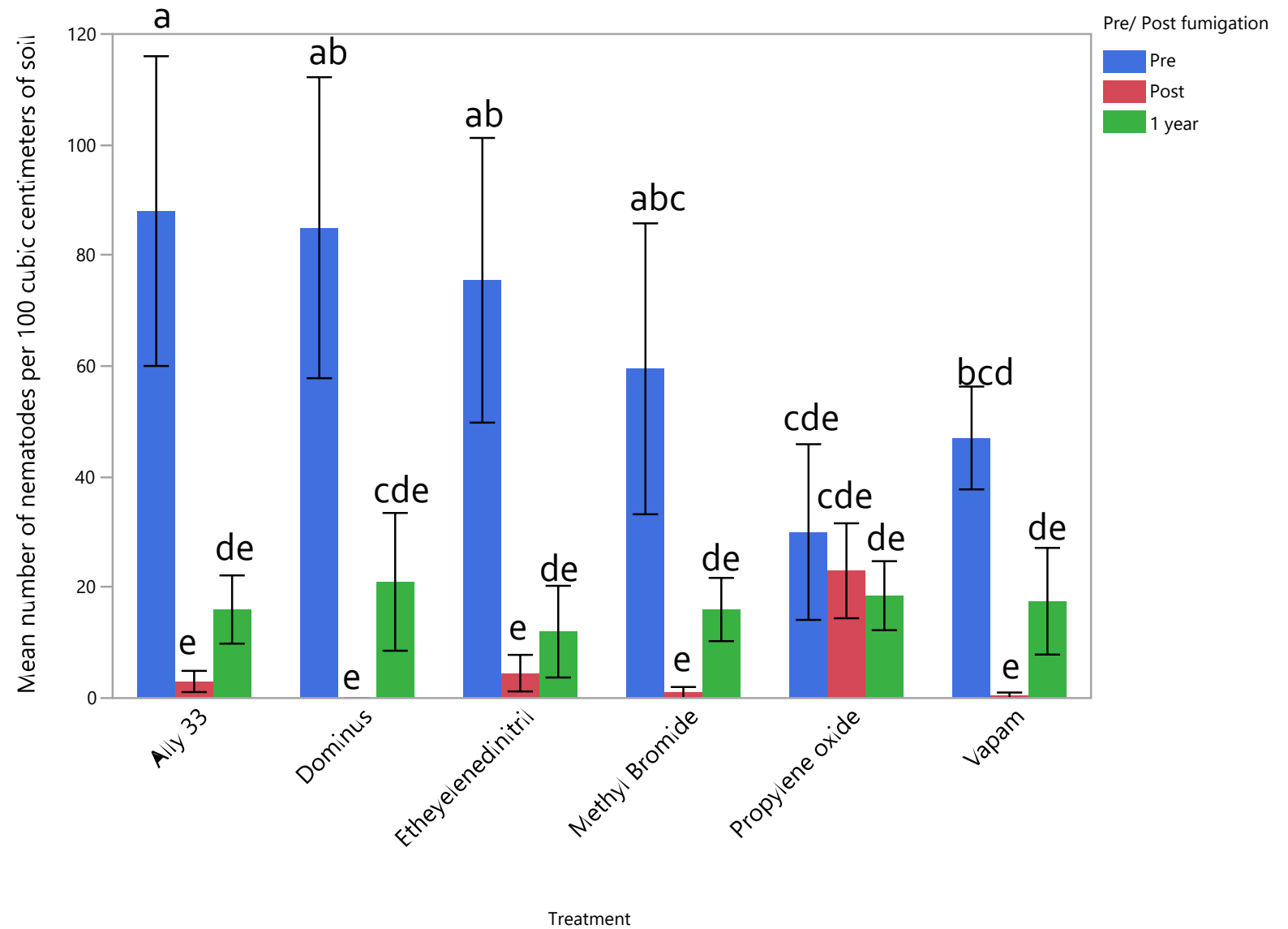
Trichoderma



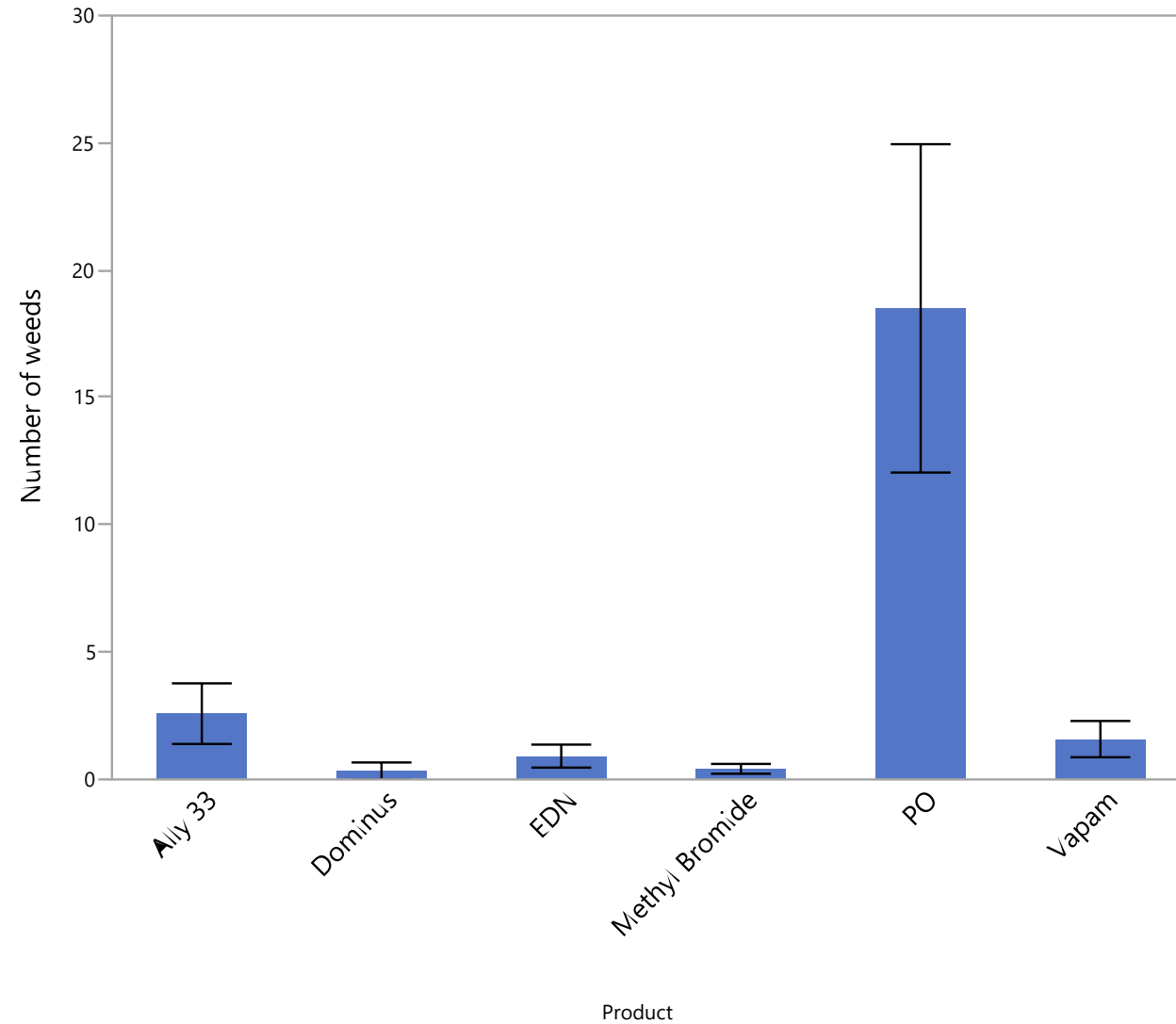
Nematodes



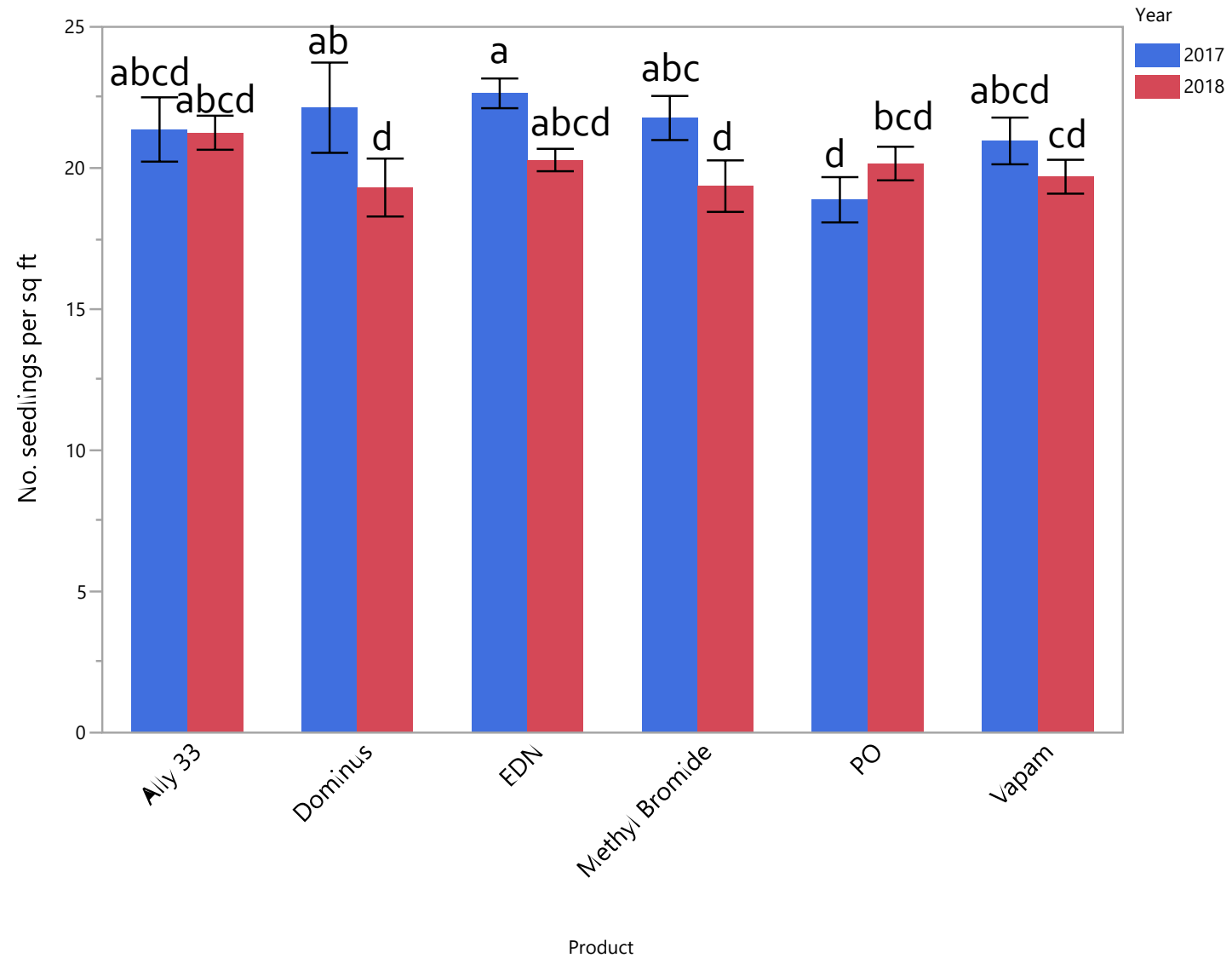
<http://extension.uga.edu/publications/detail.html?number=C834&title=Guide%20for%20Interpreting%20Nematode%20Assay%20Results>



Loblolly weed counts



Loblolly seedling densities



Root weight ratio

Treatment	Rate	Root Weight Ratio (%)	
		2017	2018
Methyl Bromide (80/20)	350 lbs./ac	15.83 ^a	13.72 ^{bcd}
Ethylene dinitril (EDN)	500 lbs./ac	15.63 ^{ab}	13.43 ^{cd}
Ally 33 (67% Dominus + 33% Pic)	500 lbs./ac	15.05 ^{abc}	12.57 ^d
Propylene Oxide	600 lbs./ac	13.73 ^{abcd}	13.71 ^{bcd}
Dominus (AITC)	500 gal./ac	15.13 ^{abc}	13.80 ^{abcd}
Vapam (SMDC)	75 gal./ac	13.65 ^{bcd*}	13.45 ^{cd}

RCD

Treatment	Rate	RCD (mm)	
		2017	2018
Methyl Bromide (80/20)	350 lbs./ac	3.97 ^{cde}	4.42 ^a
Ethylene dinitril (EDN)	500 lbs./ac	3.86 ^e	4.06 ^{bc*}
Ally 33 (67% Dominus + 33% Pic)	500 lbs./ac	3.66 ^{f*}	4.08 ^{bc*}
Propylene Oxide	600 lbs./ac	3.90 ^{de}	4.00 ^{cd*}
Dominus (AITC)	500 gal./ac	3.88 ^{de}	3.99 ^{cde*}
Vapam (SMDC)	75 gal./ac	4.06 ^{bc}	4.15 ^{b*}

Soil fumigation

- Objective is to identify possible alternatives to Methyl Bromide
- Consistently control insects, nematodes and fungi.
- Propylene oxide did not eradicate trichoderma nor nematode populations in the soil
- Weeds were a problem in Propylene Oxide treatments
- 2 seasons following fumigation Methyl Bromide produced seedling with the highest RCD



Weyerhaeuser: Magnolia, Arkansas

March 2019

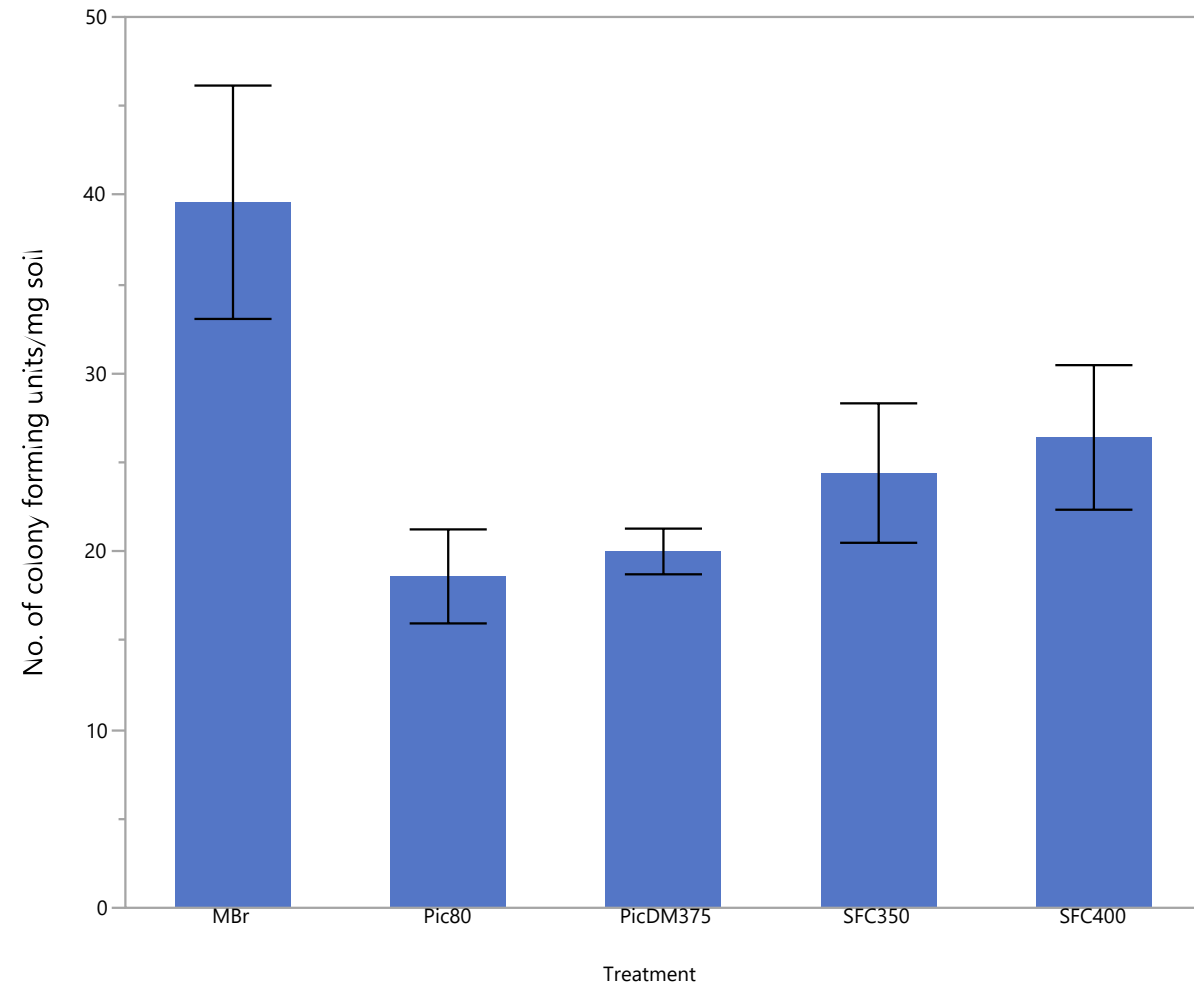
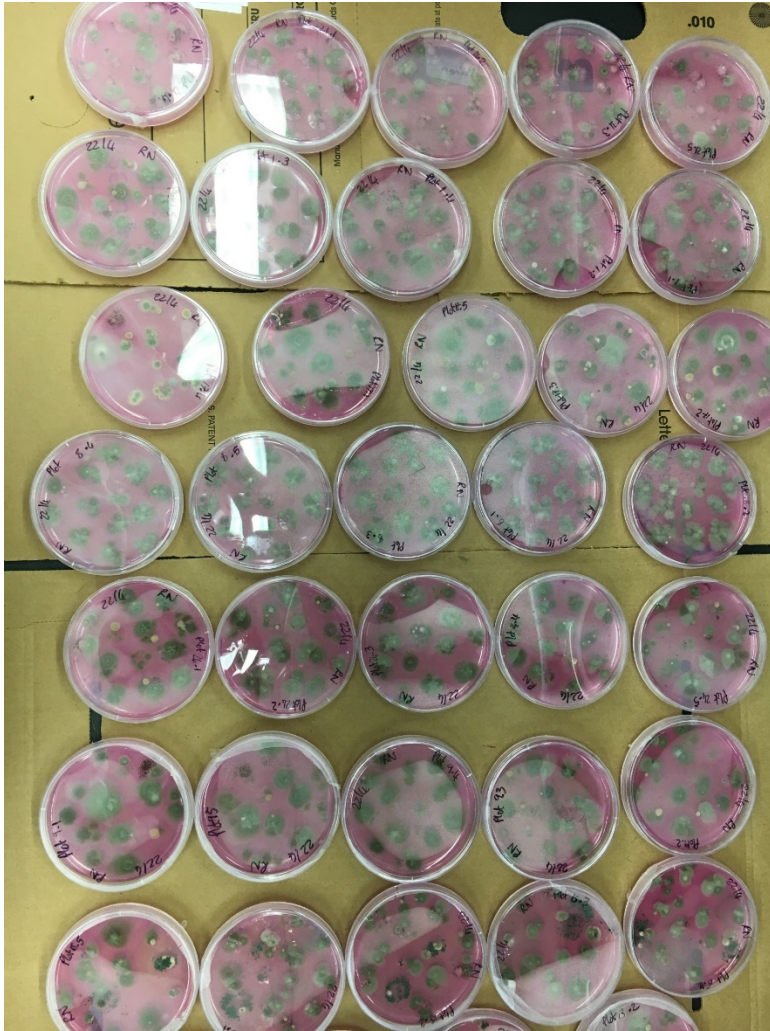


Photo: Bobby Catrett

Fumigation trial

Treatment	Rate
Methyl Bromide (80/20)	300 lbs./ac
Sulfuryl Fluoride + Chloropicrin	350 + 100 lbs./ac
Sulfuryl Fluoride + Chloropicrin	400 +100 lbs./ac
Dimethyl disulfide (DMDS) 60:40	375 lbs./ac
DMDS 60:40	425 lbs./ac
Chloropicrin (Pic) 80	350 lbs./ac

Trichoderma – Pre Fumigation



Nematodes



<http://extension.uga.edu/publications/detail.html?number=C834&title=Guide%20for%20Interpreting%20Nematode%20Assay%20Results>

