Fumigation trial update

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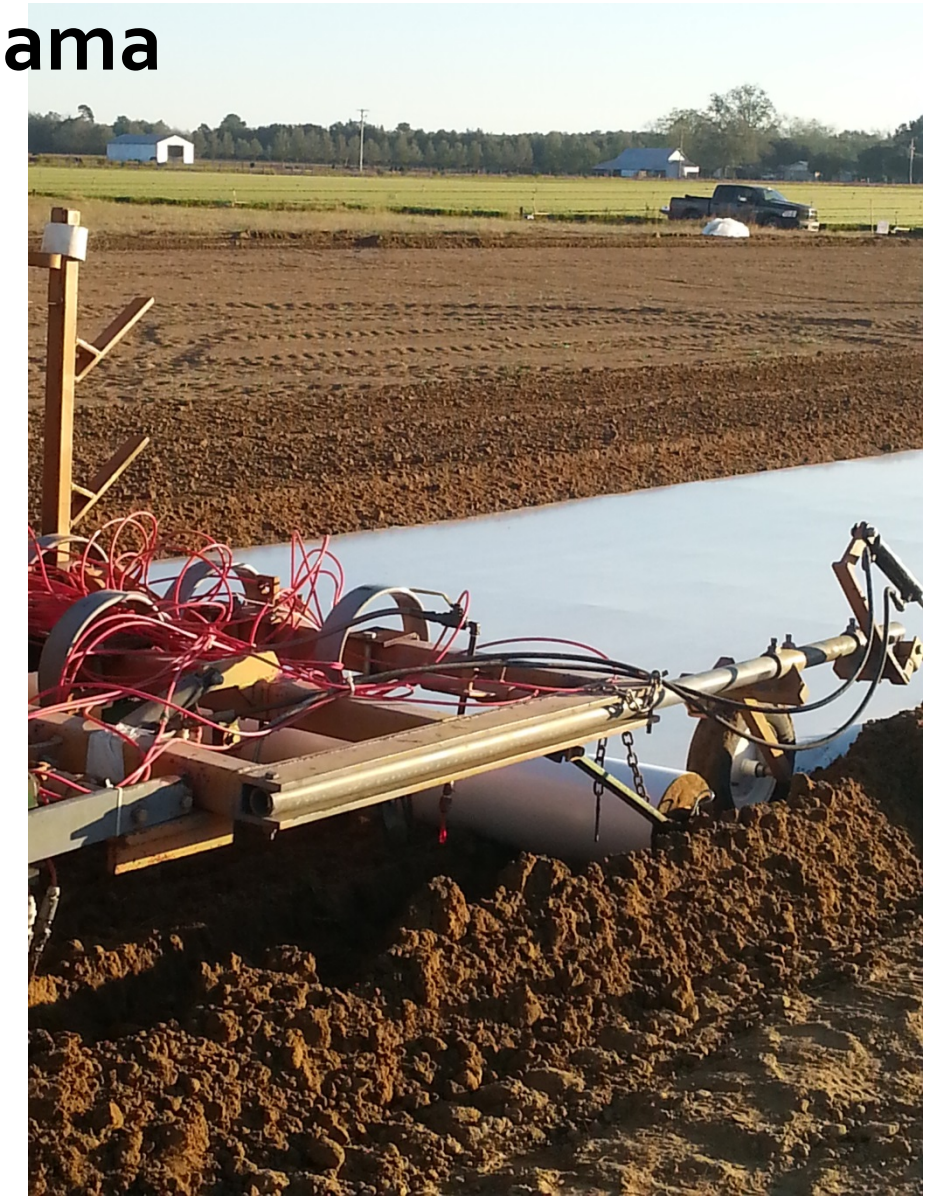
Southern Forest Nursery Management Cooperative

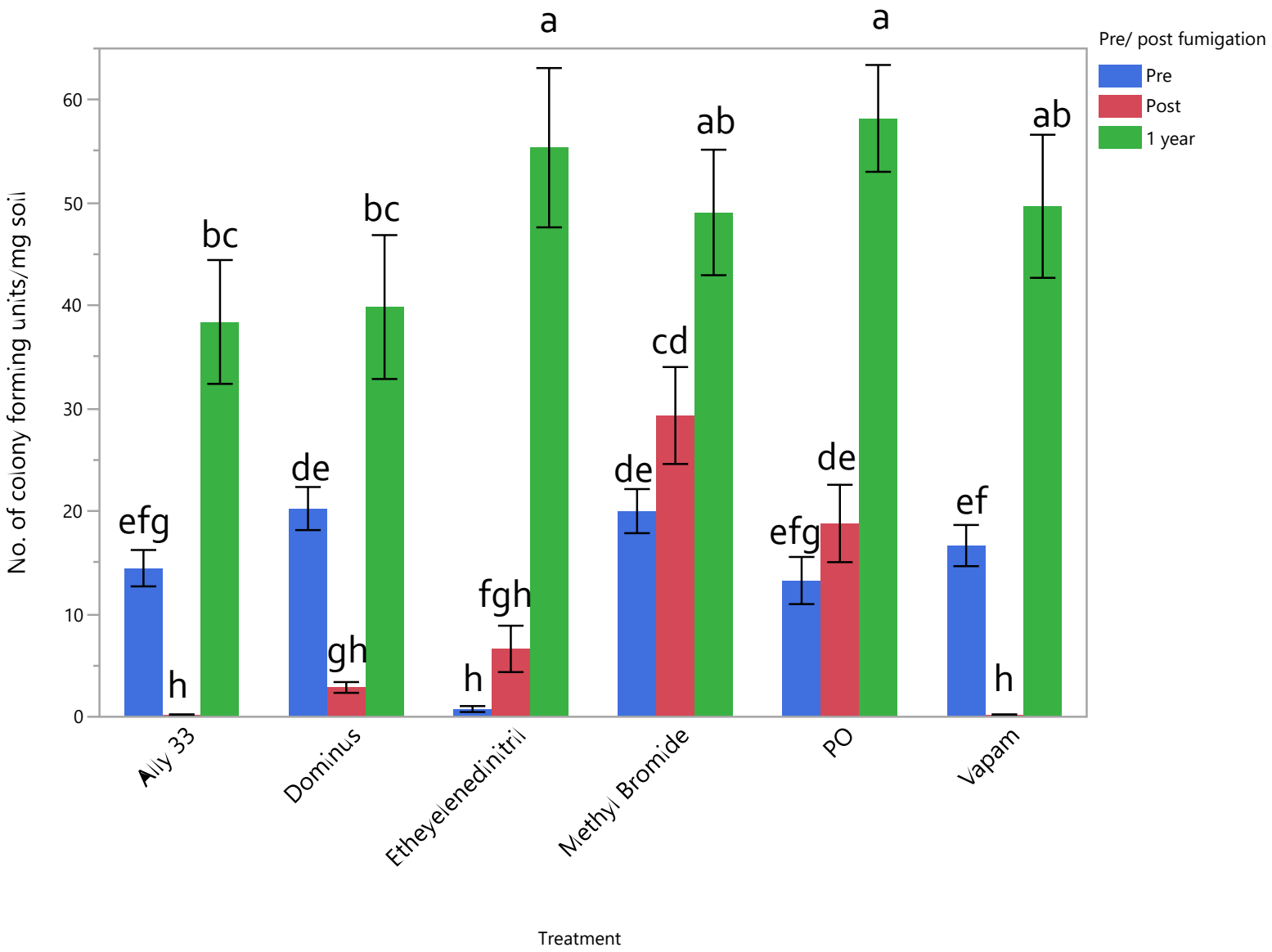
Rayonier: Elberta, Alabama
November 2016



Fumigation trial

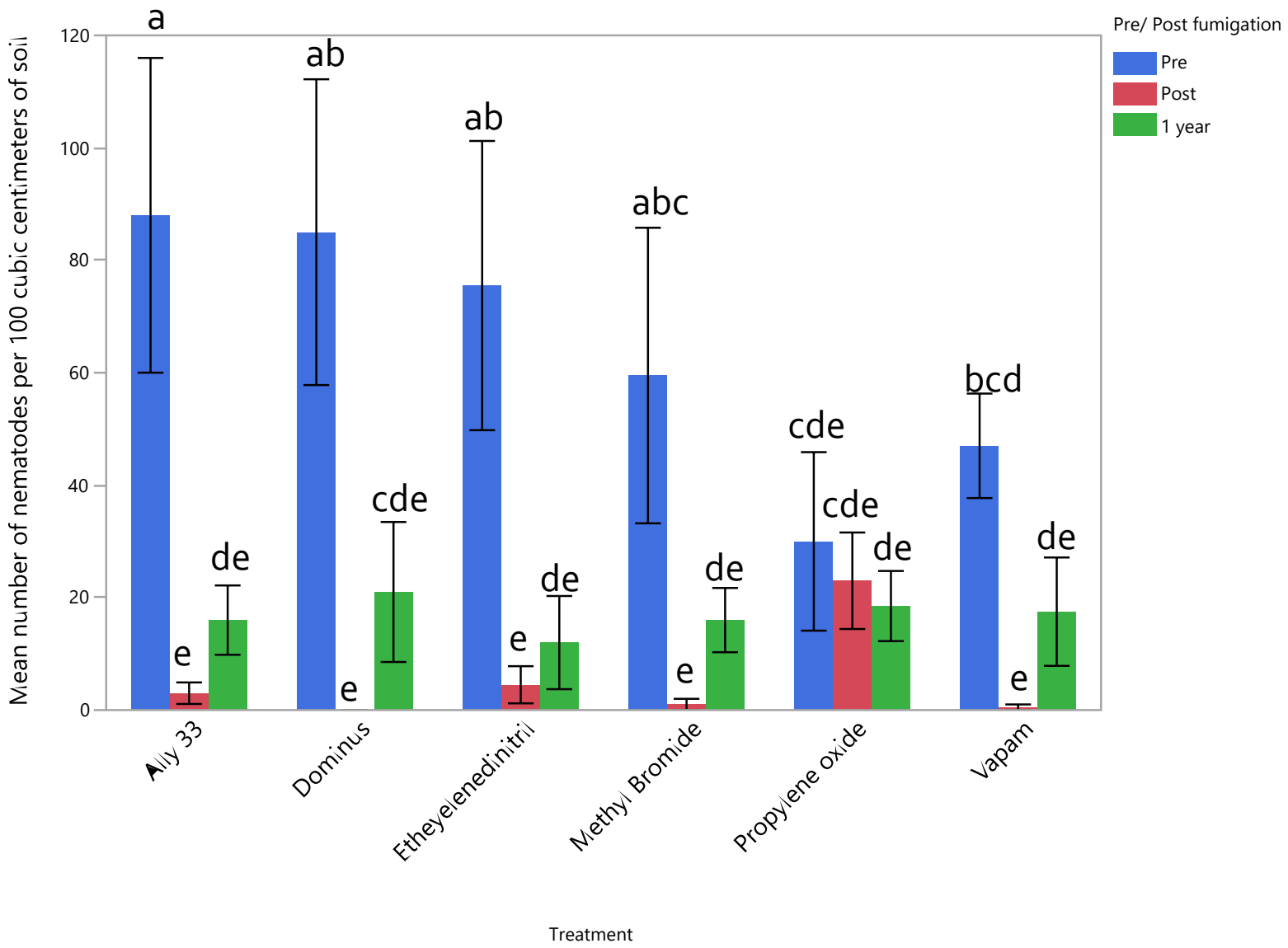
Treatment	Rate
Methyl Bromide (80/20)	350 lbs./ac
Etheyelenedinitril (EDN)	500 lbs./ac
Ally 33 (67% Dominus + 33% Pic)	500 lbs./ac
Propylene Oxide	600 lbs./ac
Dominus (AITC)	500 gal./ac
Vapam (SMDC)	75 gal./ac

Trichoderma

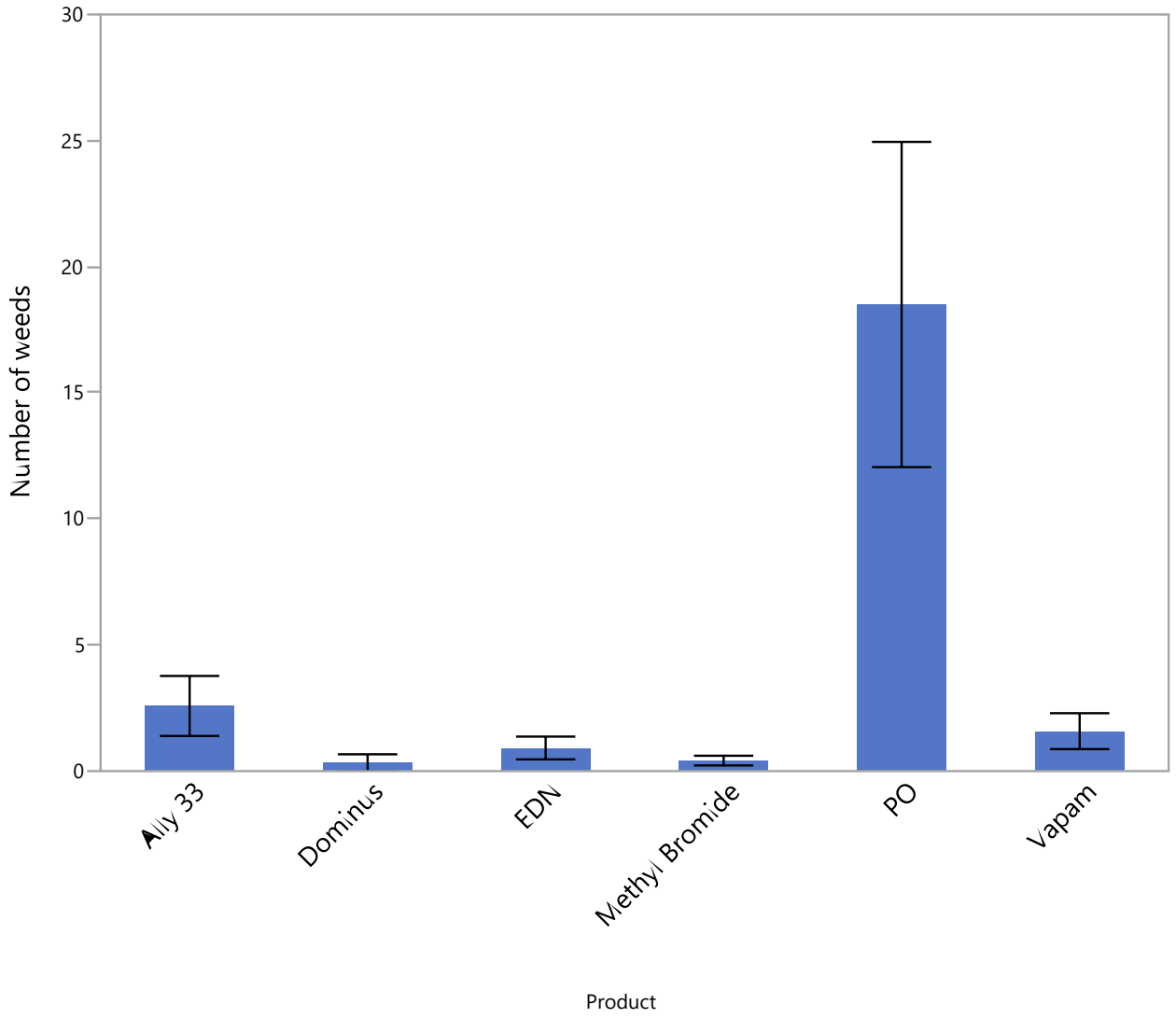


Nematodes

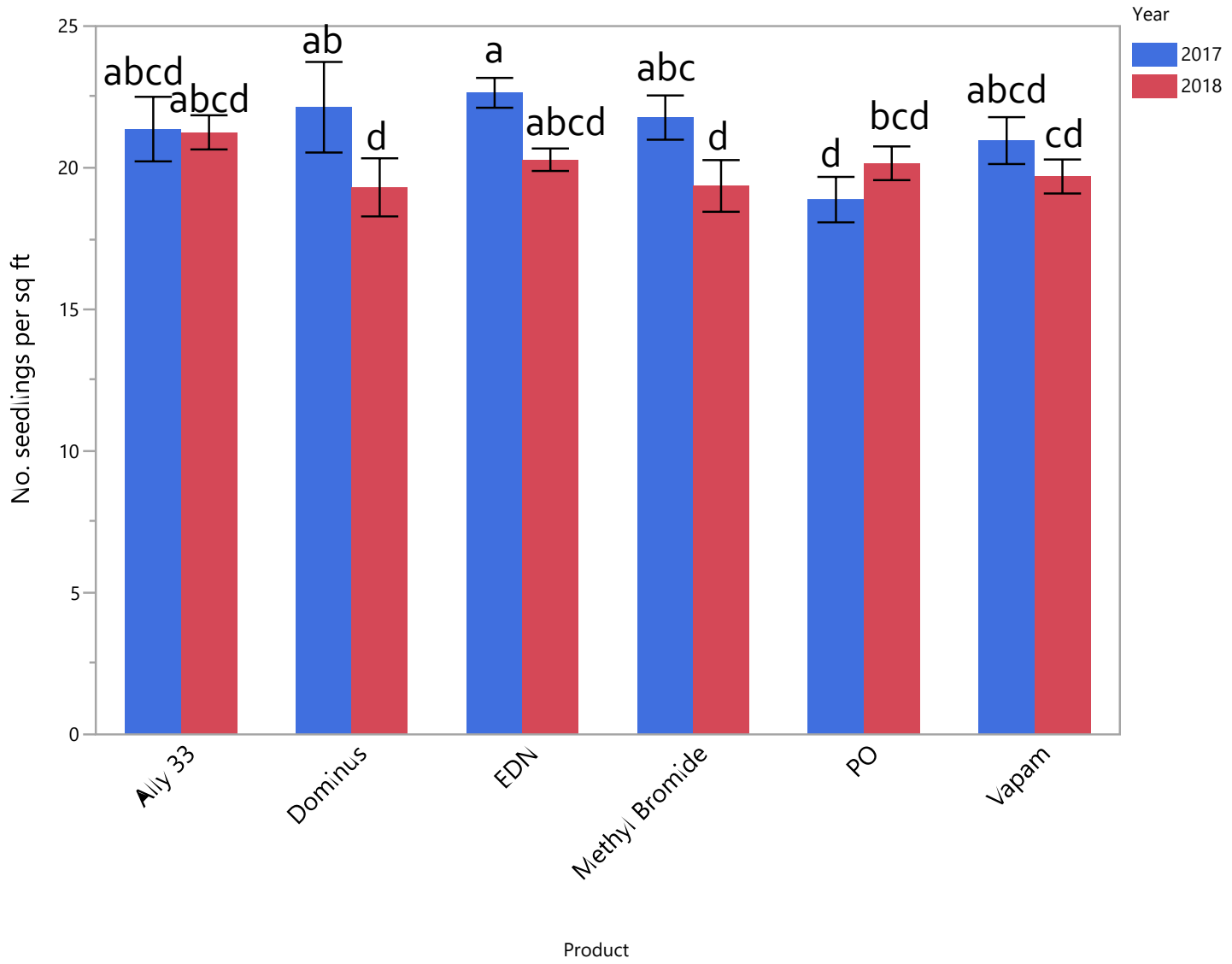
http://extension.uga.edu/publications/detail.html?number=C834&title=Guide%20for%20Interpreting%20Nematode%20Assay%20Results



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}
Etheyelenedinitril (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}
Etheyelenedinitril (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

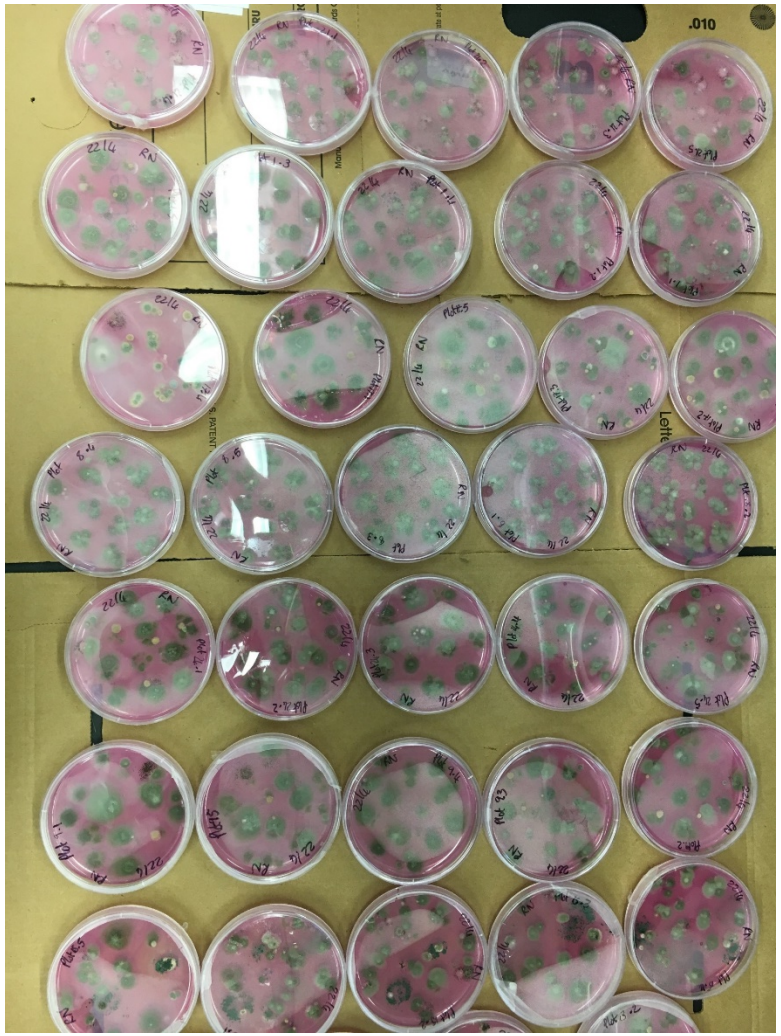
Weyerhaeuser: Magnolia, Arkansas
March 2019

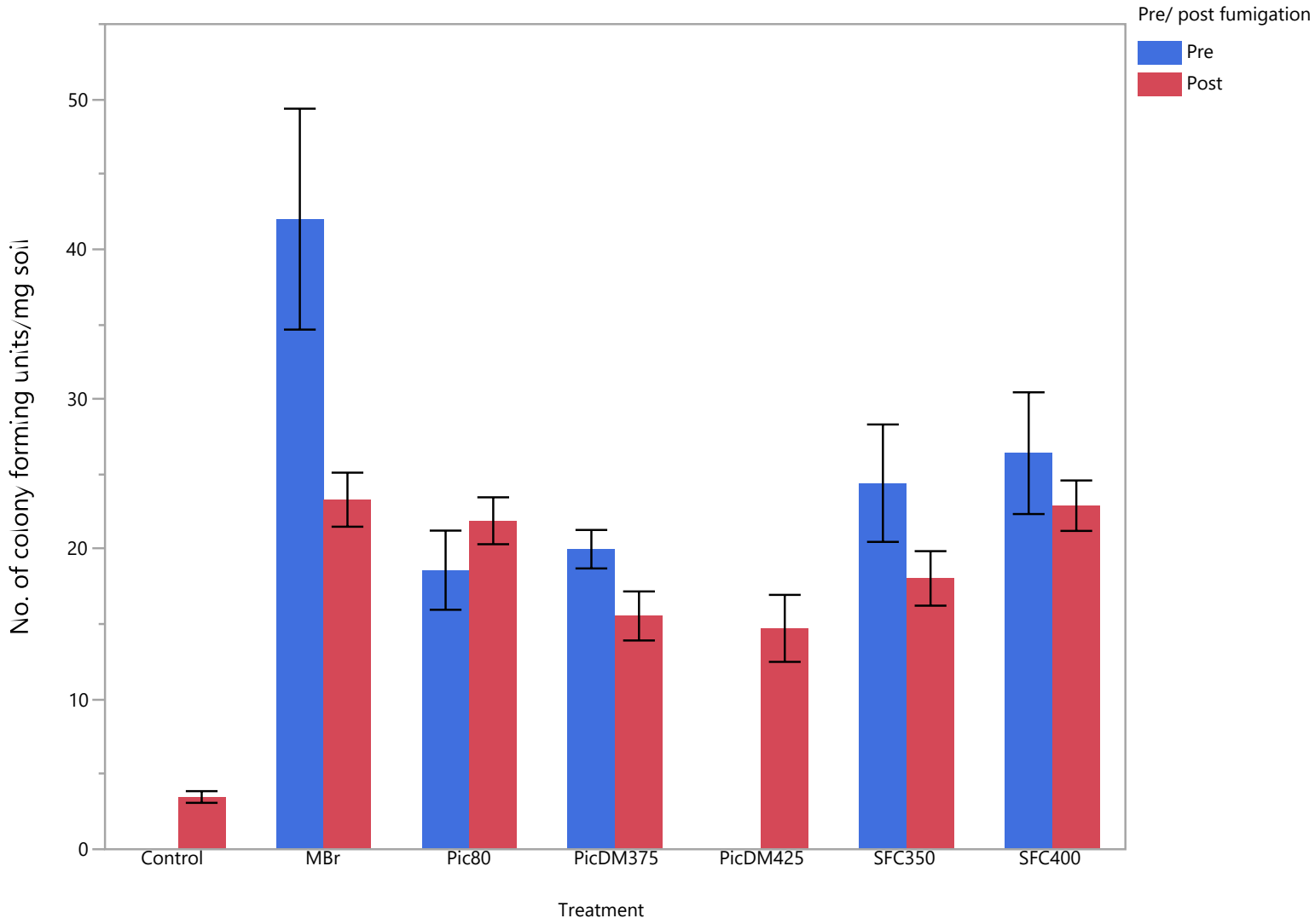
Photo: Bobby Catrett

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

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