Proline and Propylene Oxide update

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Fusiform rust - Proline® rate study

2016 Study

Fungicide	Manufacturer	Active Ingredient
Bayleton®	Bayer Cropscience	Triadimefon - 50%
Proline ® 480SC	Bayer Cropscience	Prothioconazole – 41,0%

This year – 2 species of pine

- Loblolly
- Slash

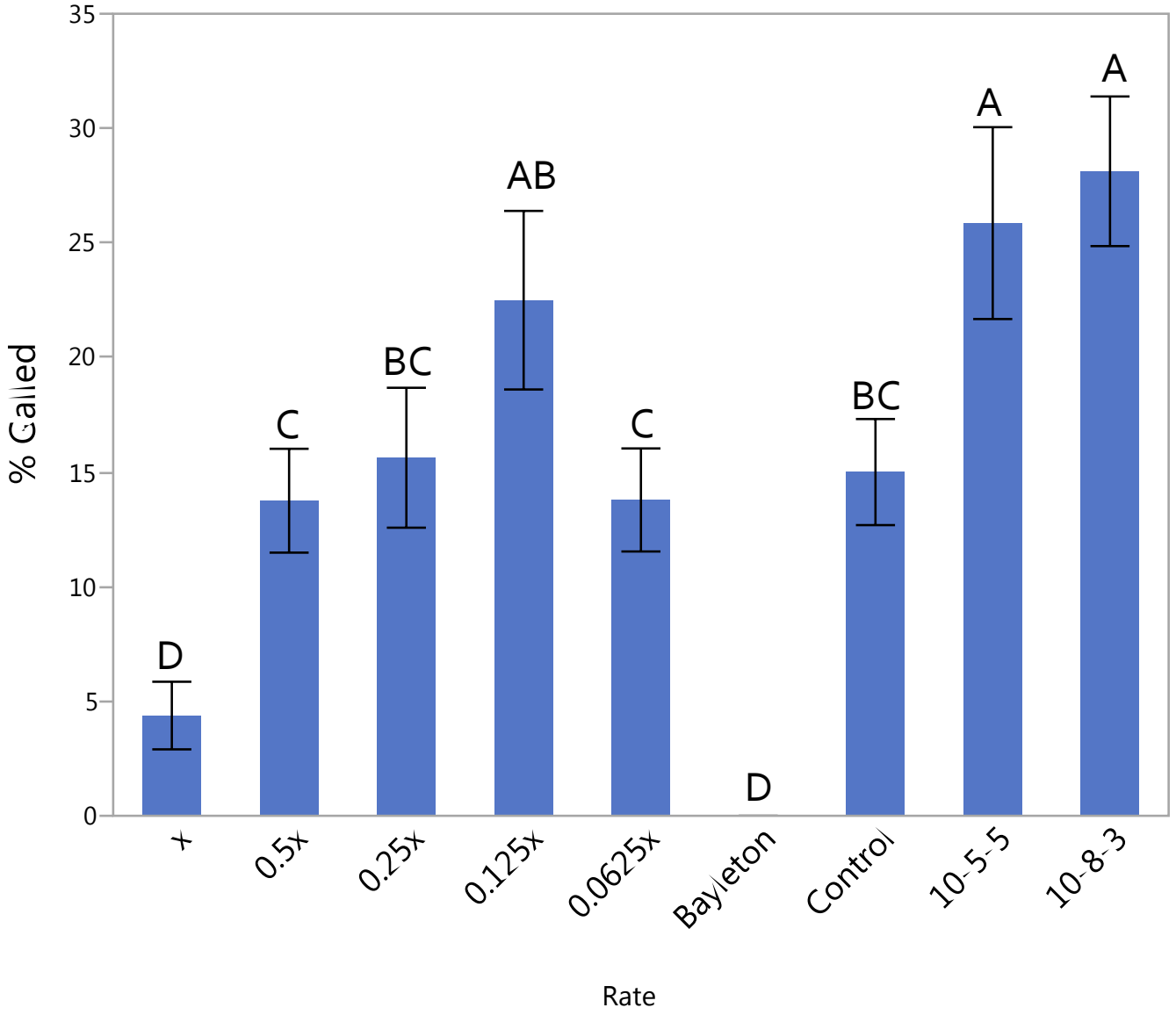
What has happened to date

- Fungicide treatments applied on seed at Auburn Laboratories
- Seed sent to Asheville, NC Rust Lab
- Seed sown and 7-10 post germination
- seedlings challenged with rust spores
- 4 month evaluations made by NC Rust Center

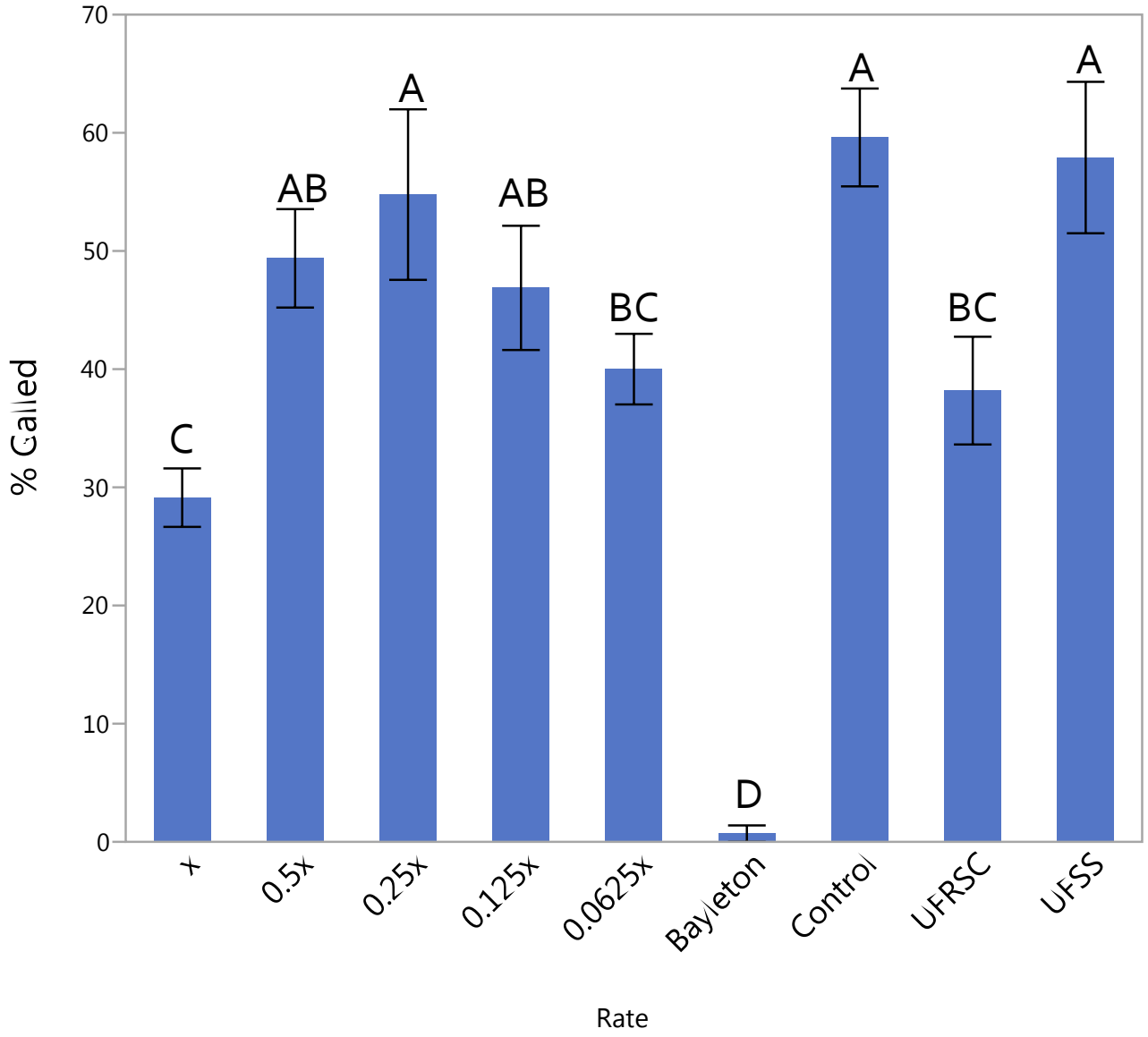
Rates of Proline® tested

	1x rate	0.5 x rate	0.25 x rate	0.125 x rate	0. 0625 x rate
Control (water)	N/A				
Bayleton®	8 oz/ac				
Proline ®	10 fl oz/ac	5 fl oz/ac	2.5 fl oz/ac	1.25 fl oz/ac	0.625 fl oz/ac

Loblolly foliar infection



Slash foliar infection



Conclusion

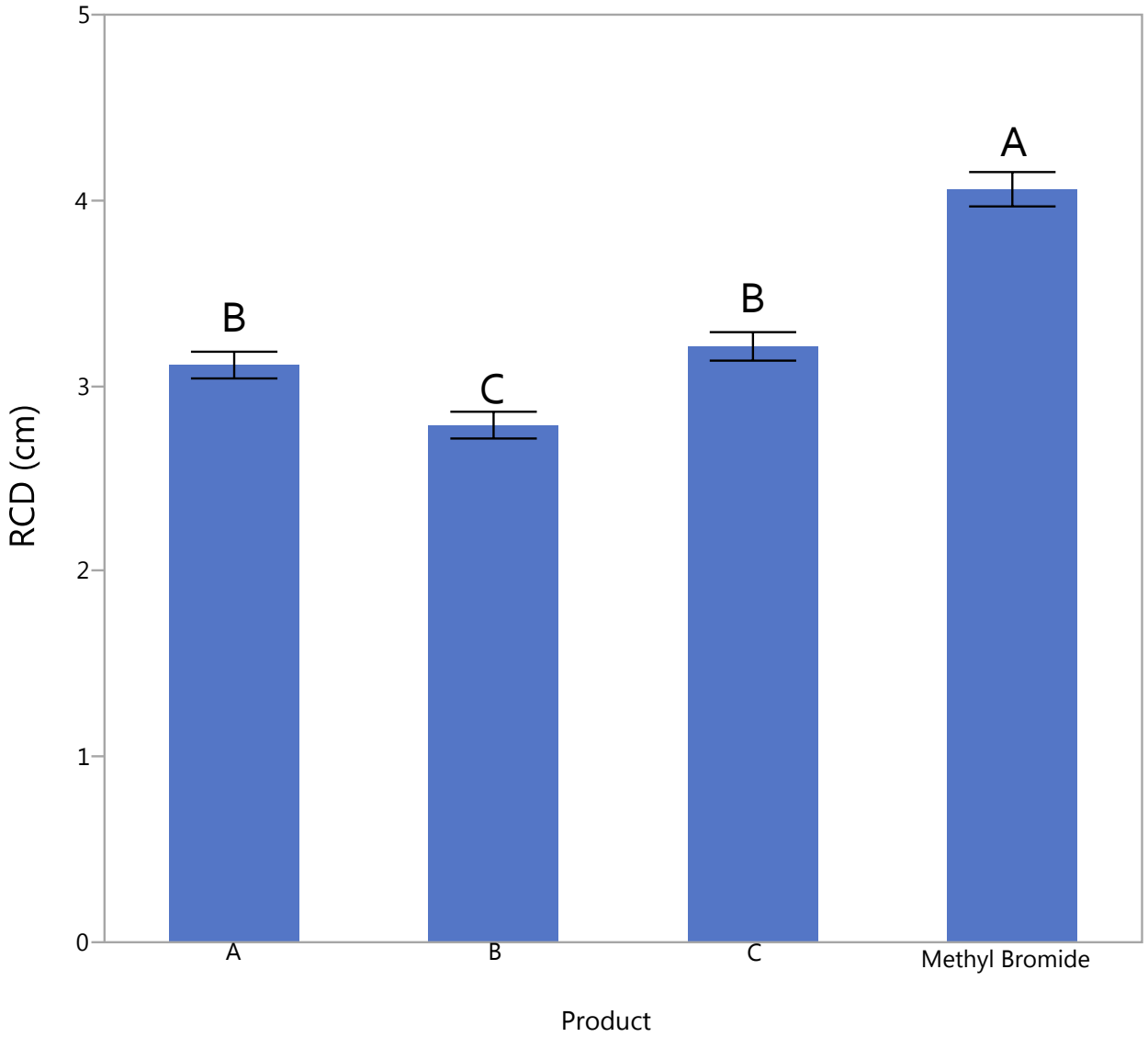
- For Slash pine, lower application rates of Proline® were less effective than that of the recommended rate.
- The low levels of infection of control seedling in the loblolly trial, indicate that the infection of Fusiform rust was unsuccessful and the trial will be repeated.

Propylene oxide as an alternative to Methyl Bromide

Propylene oxide trial

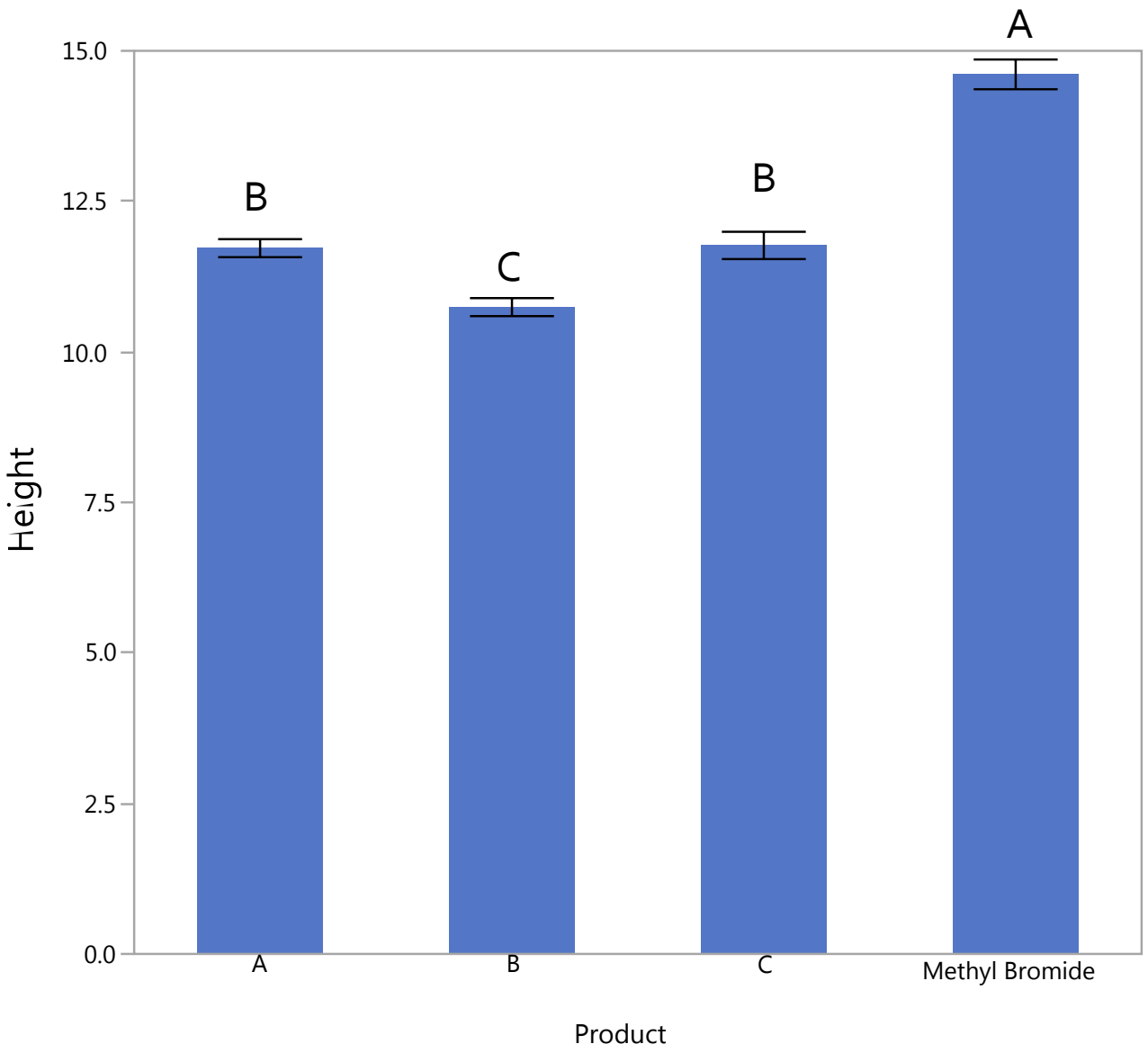
Treatment	Rate
Methyl Bromide (80:20)	300 lbs./ac
Propylene oxide (100%)	500 lbs./ac
Propylene oxide (67%) and Telone (33%)	500 lbs./ac
Propylene oxide (67%) and Chloropicrin (33%)	500 lbs./ac

Treatment impact on seedling diameter



A = Propylene oxide (67%) and Telone (33%) - 500 lbs./ac
B = Propylene oxide (100%) – 500 lbs./ac
C = Propylene oxide (67%) and Chloropicrin (33%) - 500 lbs./ac

Treatment impact on seedling height



A = Propylene oxide (67%) and Telone (33%) - 500 lbs./ac
B = Propylene oxide (100%) – 500 lbs./ac
C = Propylene oxide (67%) and Chloropicrin (33%) - 500 lbs./ac

Conclusion

- Propylene oxide as a stand alone treatment resulted in a reduction in seedling height and diameter compared to other treatments.
- There was no significant difference in seedling height and diameter for the Propylene oxide (67%) and Telone (33%) treatment compared to the Propylene oxide (67%) and Chloropicrin (33%) treatment.