

Pine tip moth: Susceptibility of Loblolly Genetic Lines



SPHRC PTM & Loblolly Genetics

- ▶ Established 3 sites in southeast Georgia
- ▶ Planted 3,024 seedlings in January
- ▶ 48 seedlings per plot - 24 to measure + 24 buffer
- ▶ Assess PTM infestation levels 4 – 5 times/year
 - ▶ April, June, August, September, October PTM infestation rates
 - ▶ Tree metrics – January and October
 - ▶ Height
 - ▶ Basal diameter
 - ▶ Volume index
 - ▶ Growth form



SPHRC PTM & Loblolly Genetics

PTM rate → Mixed model ANOVA

- ▶ Fixed effects:

time, infestation rate, time x infestation rate

- ▶ Random effects: site, block

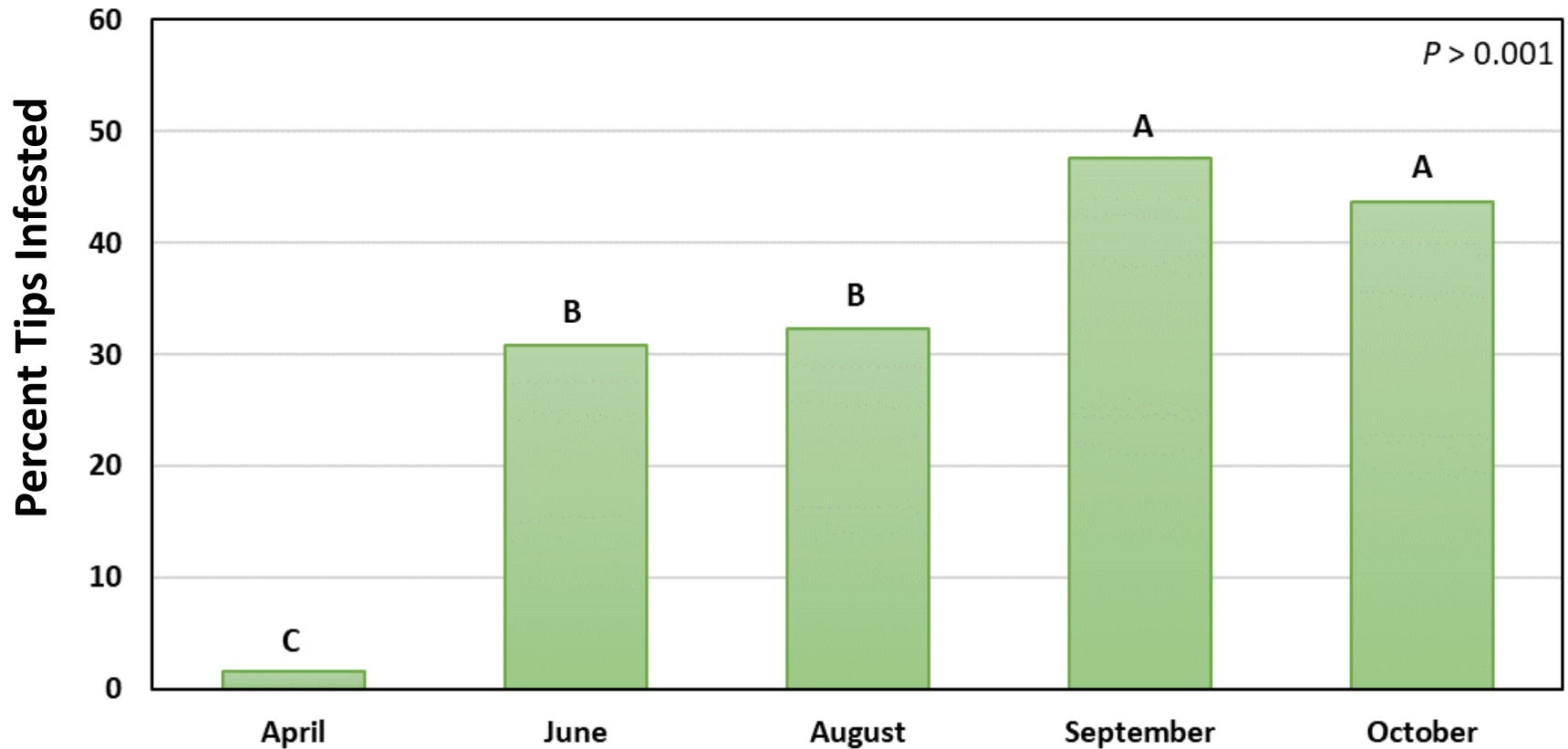
Growth metrics → Mixed model ANOVA

- ▶ Fixed effects:

growth metric and beginning ground line diameter covariate

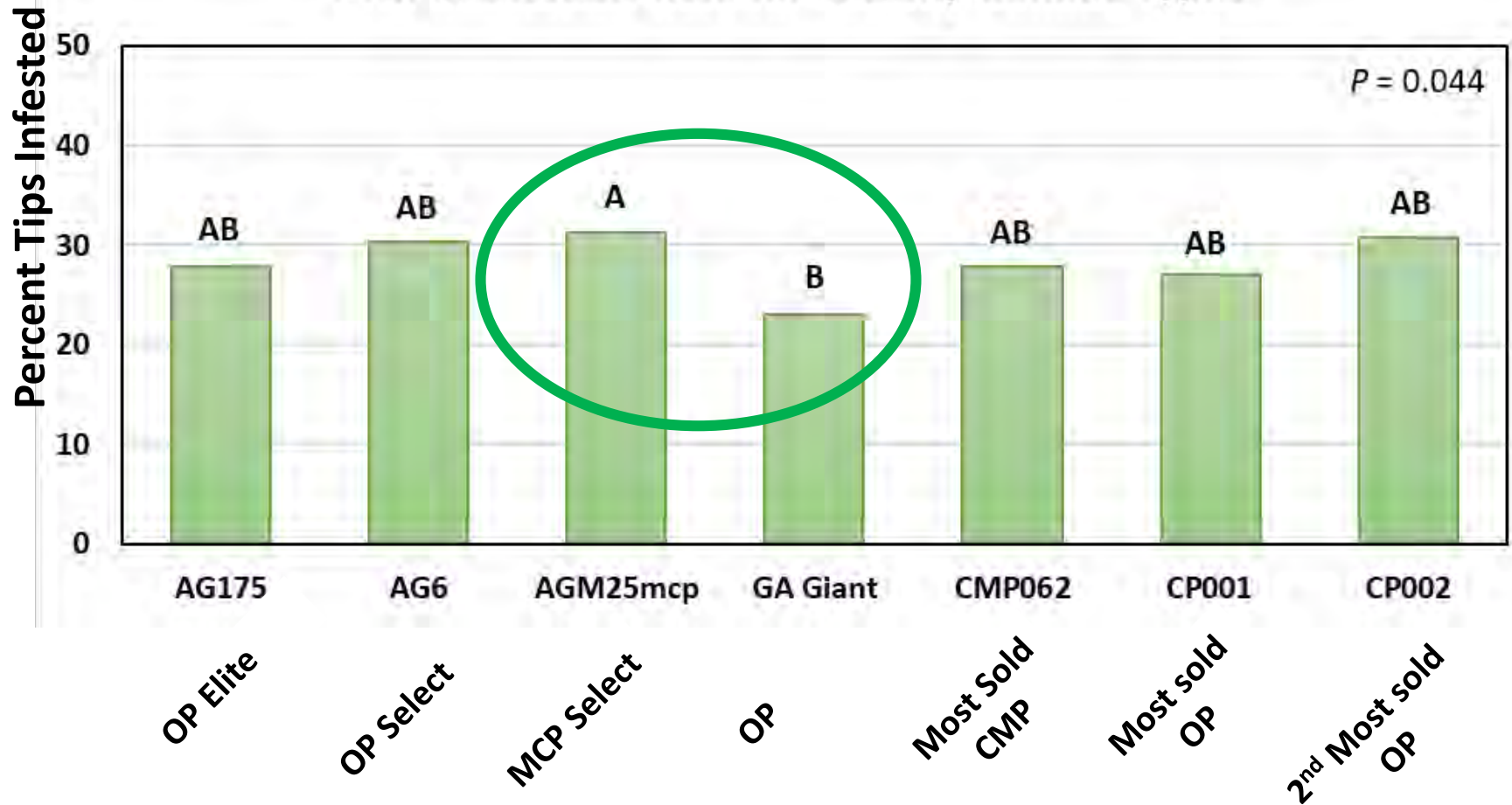
- ▶ Random effects: site, block

Overall 2019 PTM Infestation Rate Over Time



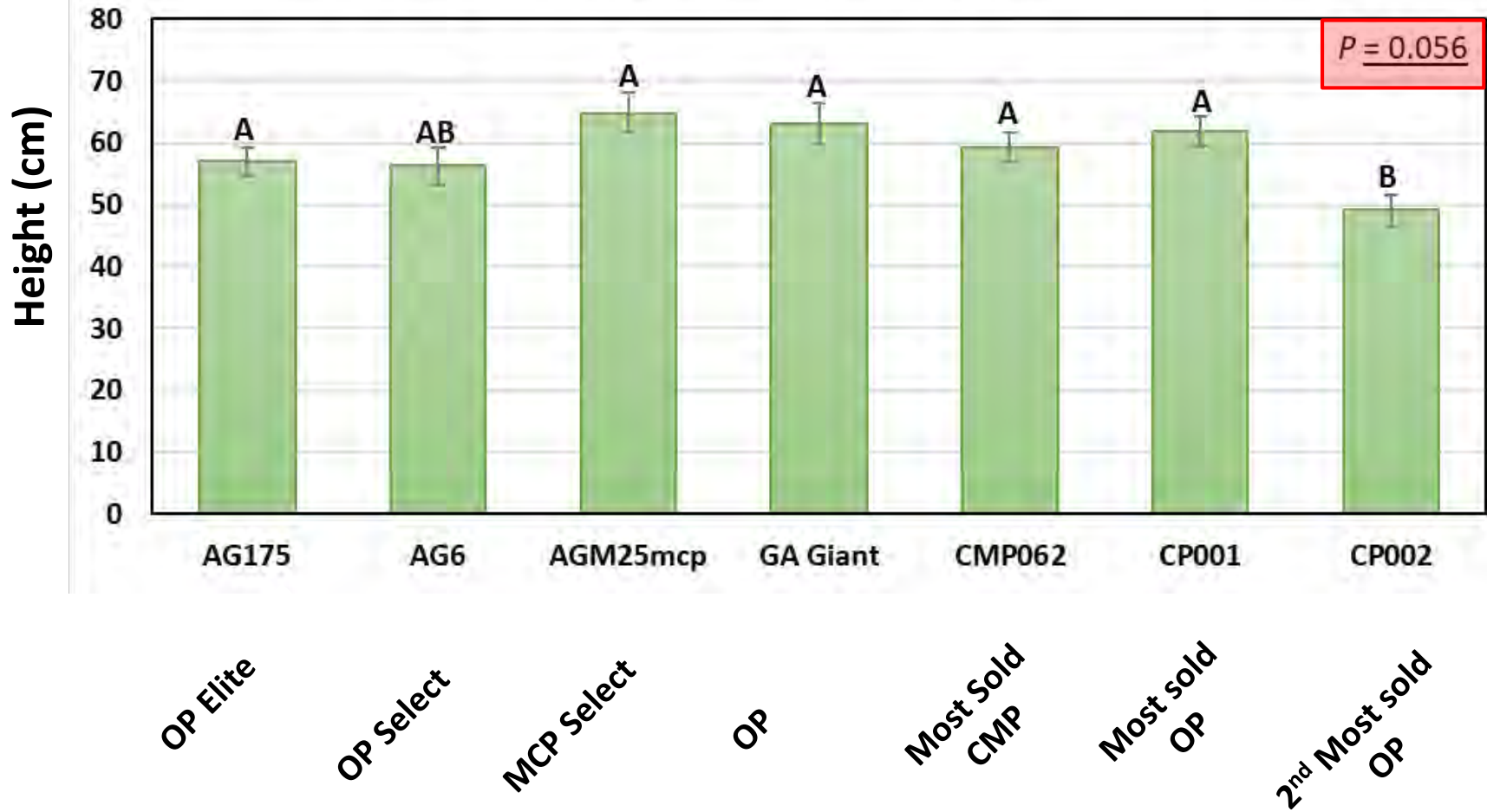
Infestation rates increase during the growing season

PTM Infestation Rate for Loblolly Genetic Types



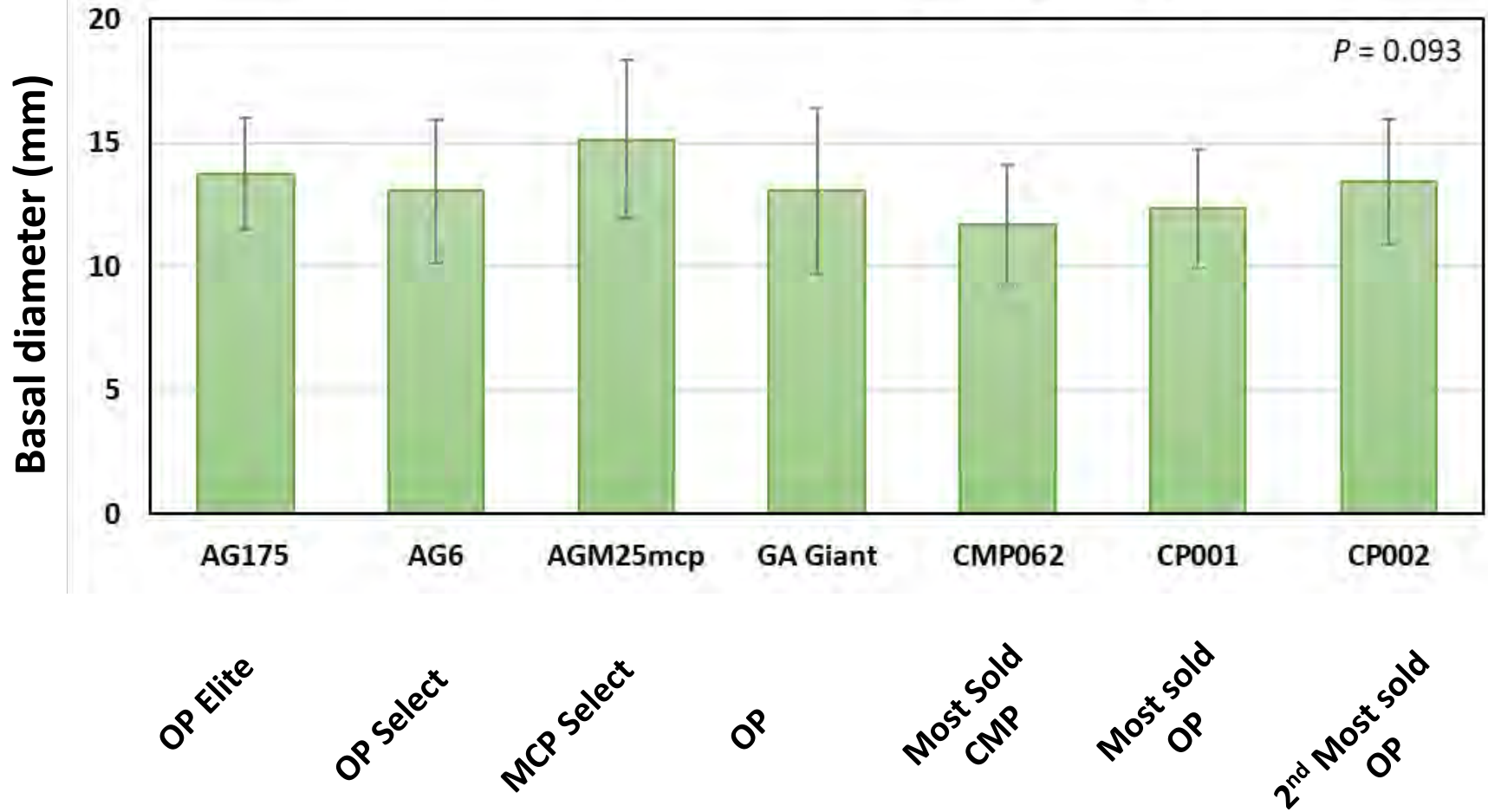
Significant differences in PTM rate among genetic types

End of 2019 Height with Beginning GLD Covariate



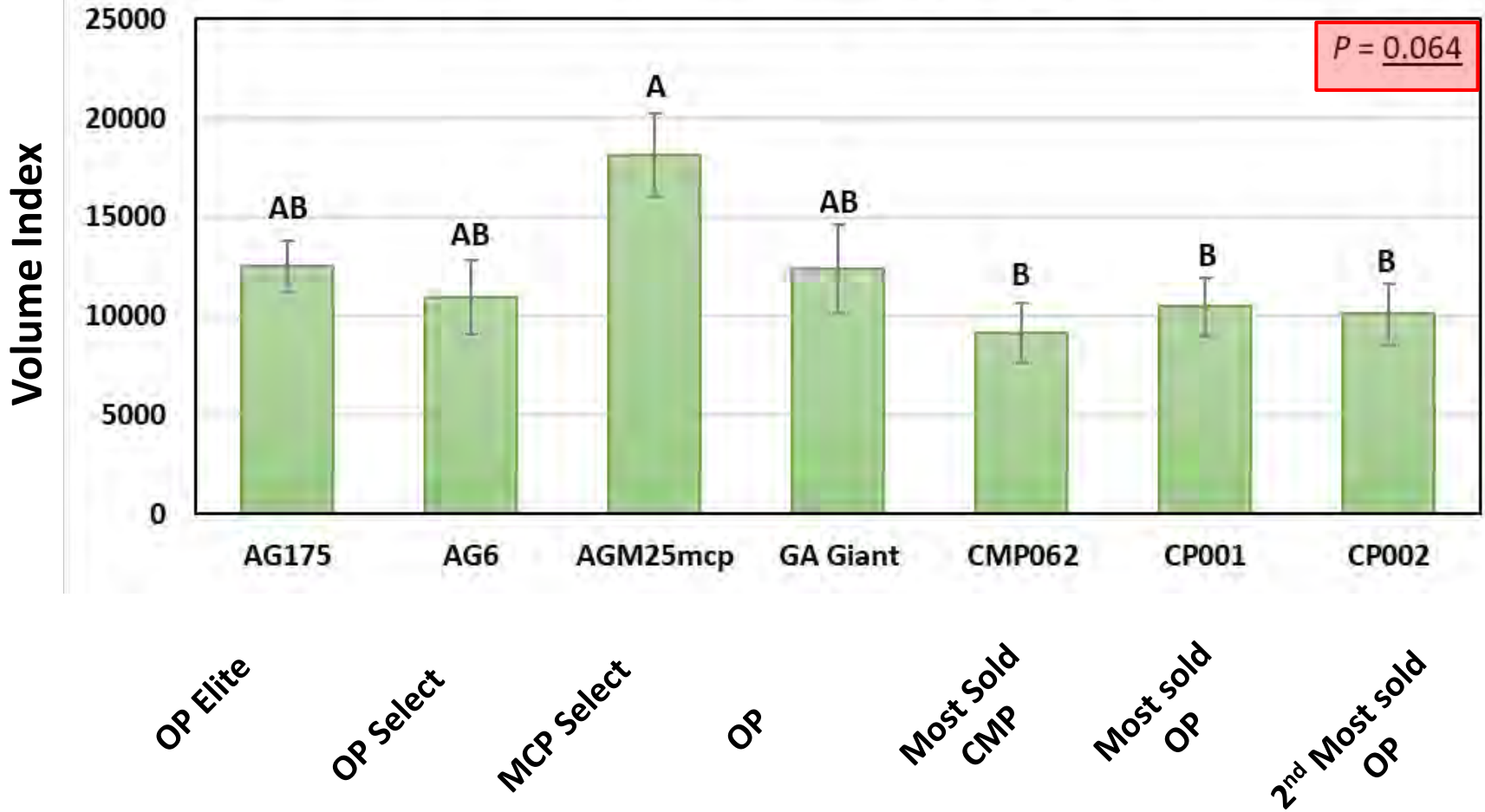
Differences in height not significant at $P < 0.05$

End of 2019 Basal Diameter with Beginning GLD Covariate



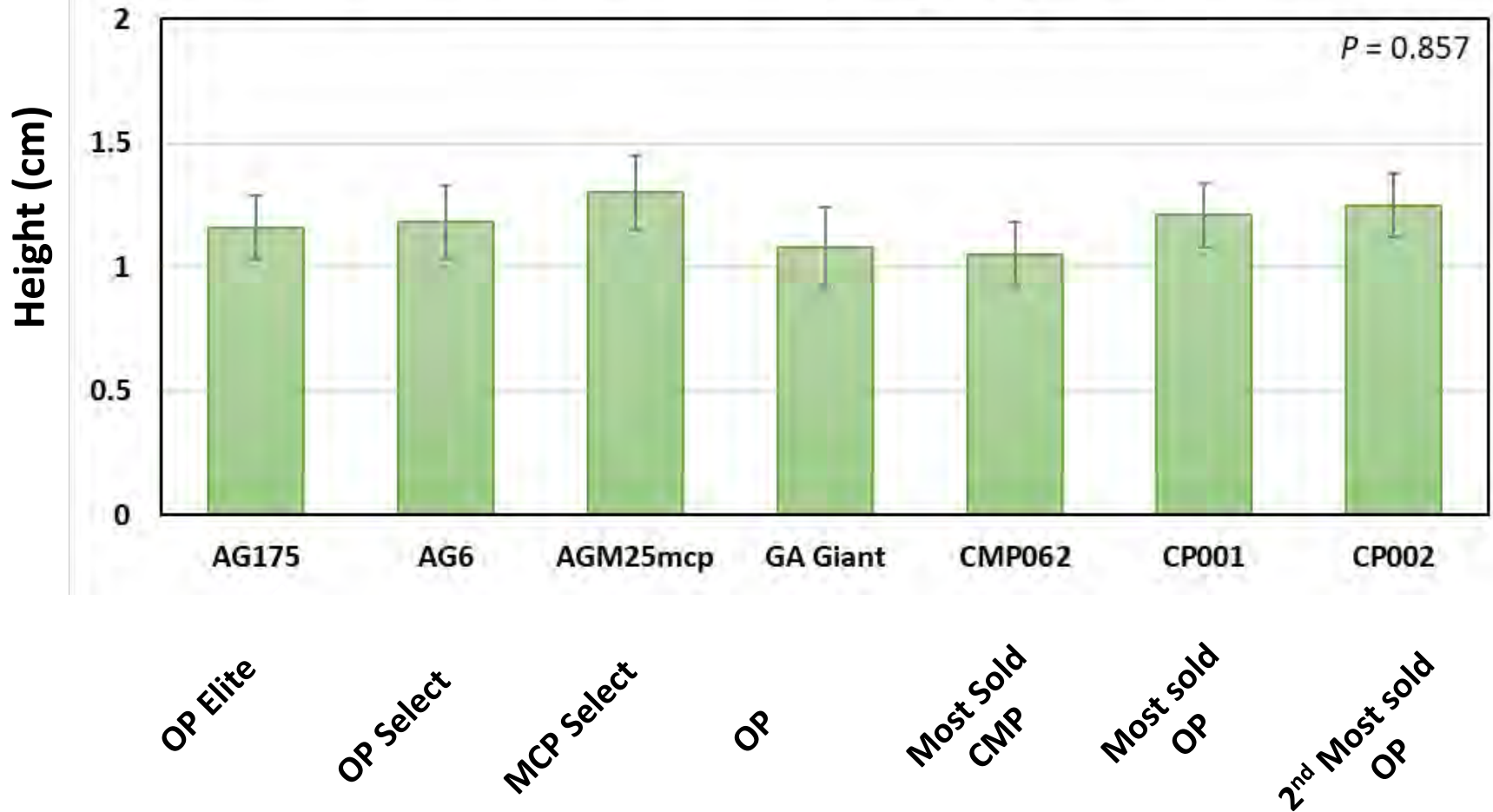
No difference in basal diameter

End of 2019 Volume Index with Beginning GLD Covariate



Differences in volume index not significant at $P < 0.05$

End of 2019 Growth form with Beginning GLD Covariate



Growth form is consistent among loblolly genetic types

SPHRC PTM & Loblolly Genetics

Preliminary Conclusions

- ▶ Differences in...
 - ▶ PTM infestation rates
 - ▶ Height (almost)
- ▶ Reserving judgement until two year assessment is complete

Other Forest Health Lab PTM Projects

GFC-funded insecticide study in progress

- ▶ Insecticide study on non-target ground-dwelling invertebrates complete
- ▶ New PTM degree-day-based spray recommendation in progress
- ▶ PTM trapping continues throughout GA

