Fusiform Rust Trial-2022

Annakay Newell

Fusiform Rust

- Caused by the fungal pathogen *Cronartium quercuum* f. sp. *Fusiforme*
- Problem in loblolly and slash pine production
- The use of fungicides is the most effective control strategy
- The Nursery Cooperative spearheaded the registration of Bayleton® and Proline® for control of the disease
- Ongoing program to identify new chemistries

Why test new chemistries?

- EPA regulations require the reregistration of pesticides after a certain time has passed.
- Companies may discontinue pesticides
- Pesticides may become unavailable or hard to source
- Pathogens may become resistant to chemistries that are used continuously
- Proline is the only fungicide currently registered for the control of fusiform rust

Proline

- Used as a seed treatment (10 fl oz./50 lb of seed)
- Used for foliar applications on seedlings (5 fl oz./acre at 14–21-day intervals)
- Labelled for the control of fusiform rust, pitch canker, Rhizoctonia and foliar blight in conifer and hardwood nursery production

Greenhouse screening for rust control

1. Identify fungicides that are labelled for other crops and diseases

2. Slash and loblolly pine seeds are sown and germinates treated with fungicides to be tested at two weeks post germination.

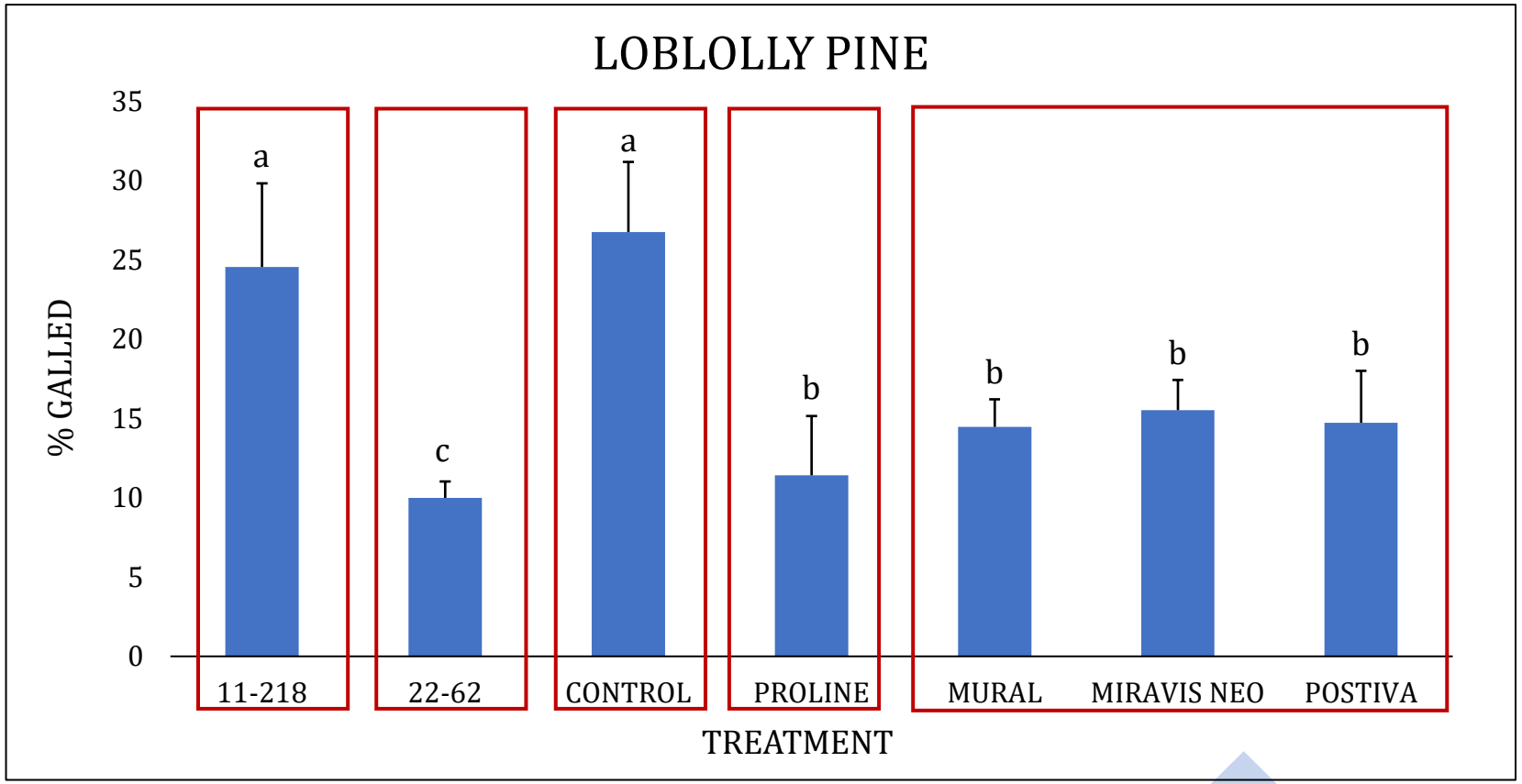
3. Seedlings are sent to the Bent Creek Experimental Forest Resistance Screening Center in Asheville, NC for screening.

4. Screening involves challenging seedlings with rust spores at 3 weeks post germination and assessing whether seedlings have galls at 3 and 6 months.

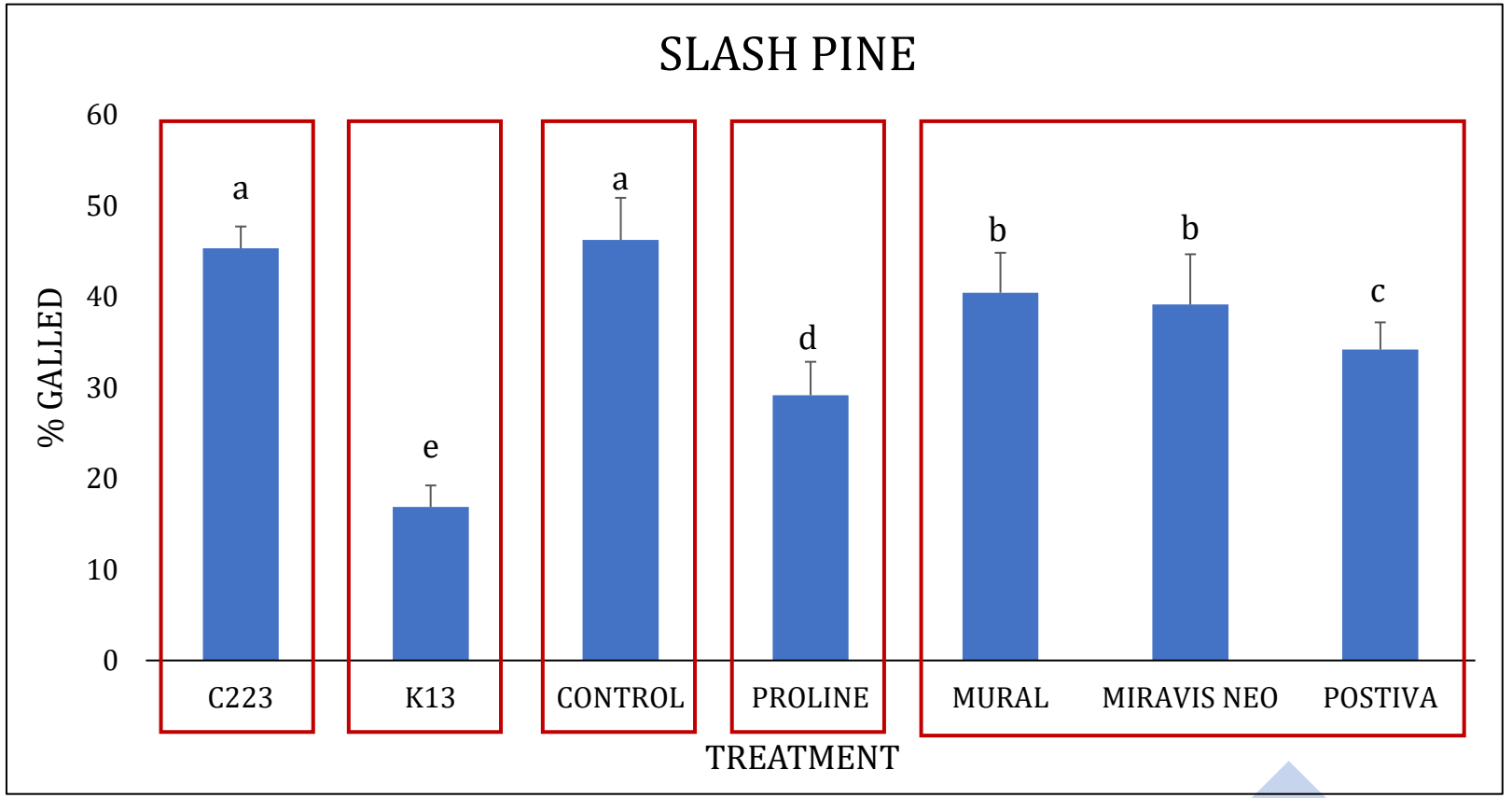
Greenhouse screening-2022

Tested three new fungicides

Greenhouse screening-2022 (6-month results)



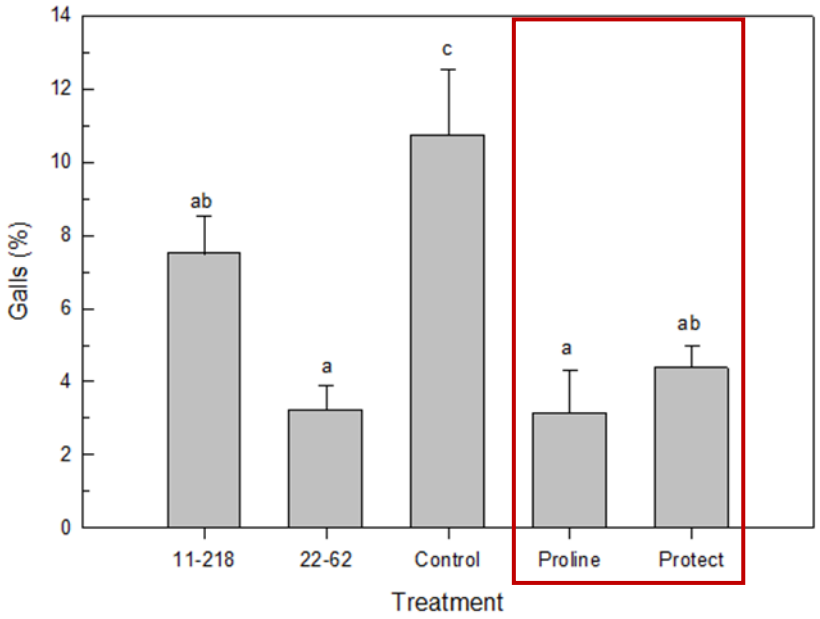
Greenhouse screening-2022 (6-month results)



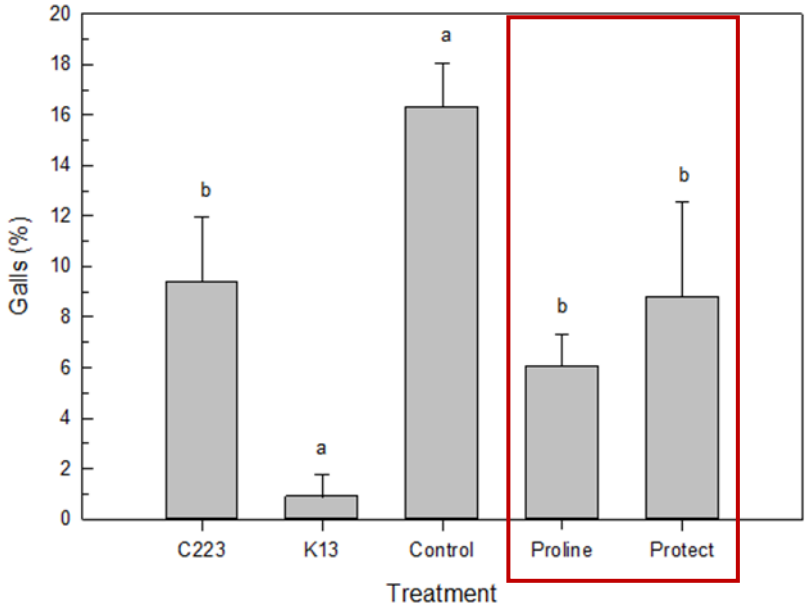
Field screening-2022

Protect® DF was effective in controlling fusiform rust in greenhouse studies in 2020 and 2021. Currently testing its efficacy in field studies. Data collection in November 2022.

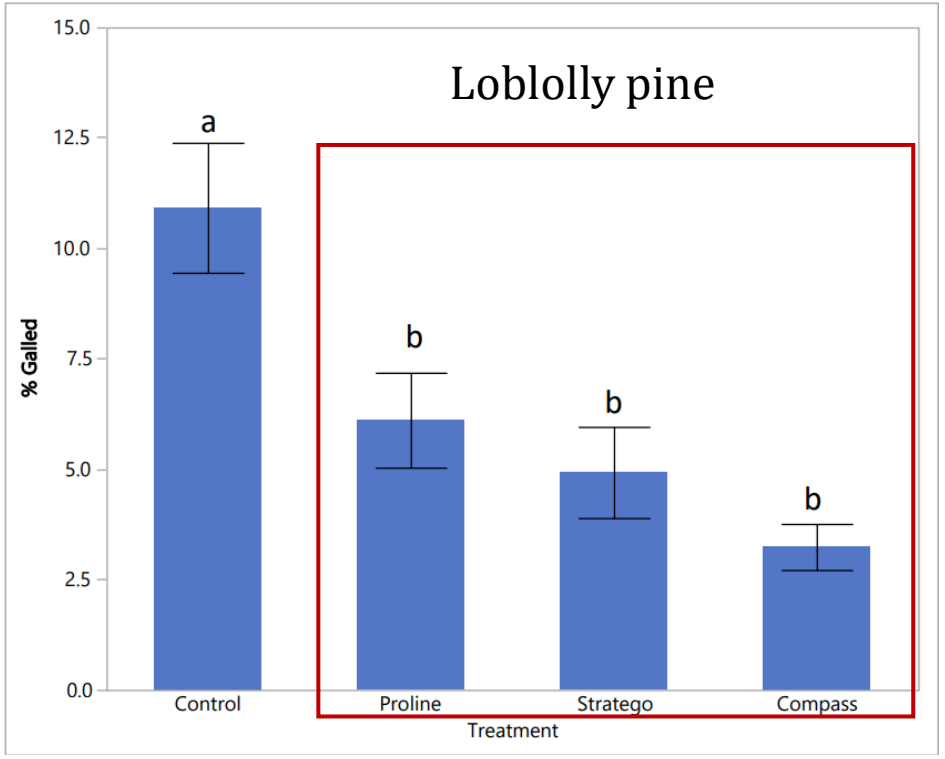
Loblolly pine

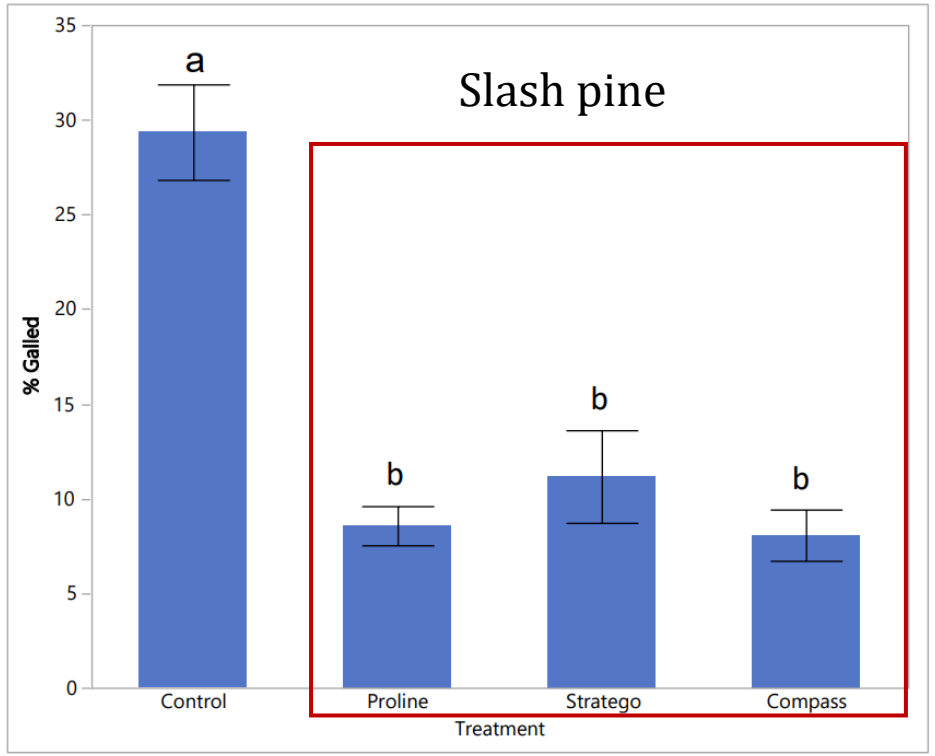


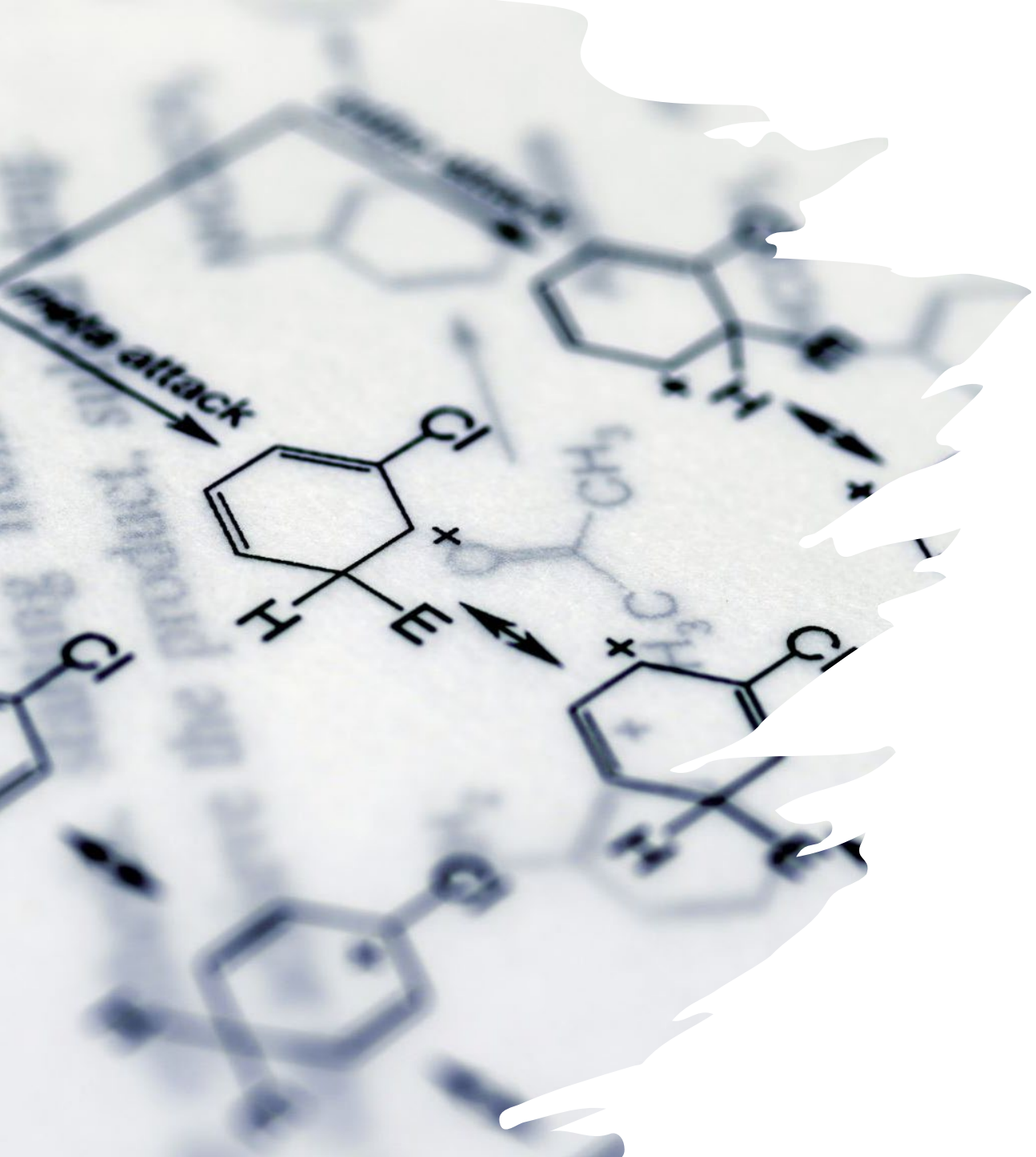
Slash pine



2019-2020 Rust Studies







Future Studies

- Approach chemical companies regarding labelling of Compass®, Stratego®, and Protect® DF.
- Test Postiva™, Miravis Neo®, and Mural™ in field studies.
- Continue looking for new chemistries to test.

Acknowledgments

Resistance Screening Center USDA Forest Service, Asheville, North Carolina

ArborGen, Shellman Georgia