

Evaluation of New, Generic and Pre-mixed Fungicides for Management of Rust on Susceptible and Moderately Resistant Hybrids

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Outline

- Introduction (myself, rust, fungicides, research)
- Objectives
- Materials and Methods
- Results
- Conclusion
- Acknowledgements

My Research

- Rosemount to North Dakota State University and joined the NDSU track team
- Crop and Weed Science-Biotechnology
- Started working for plant pathology department in 2013
- PhD research project in sunflowers advisor Dr. Samuel Markell



Introduction-Rust





Introduction-Fungicides

- Pre-2002 = Triazoles (Folicur) deemed most effective
- 2002-2004 = Strobilurins labeled (headline and quadris)
- 2008-2011 = 17 rust fungicide trials



Introduction fungicides

- The optimal fungicide timing was severity of 1% **at or before R5**
- 1% increase in rust severity at R7 was correlated ($r=0.7756$) with a **yield reduction of 6.6%**.



Objective

- 1) The impact of moderate resistance
- 2) Efficacy of pre-mixes
- 3) Efficacy of 'New' products
- 4) Efficacy of tebuconazole (Folicur) generics



Materials and Methods

- In 2015 and 2016 four sunflower rust trials were conducted in Leonard, ND and Rothsay, MN.
- 12 fungicide treatments for the management of sunflower rust on moderately resistant (MR) and susceptible (S) hybrids.
- Severity assessments were made at the R6 and R7 growth stages

Increasing Inoculum



Inoculation

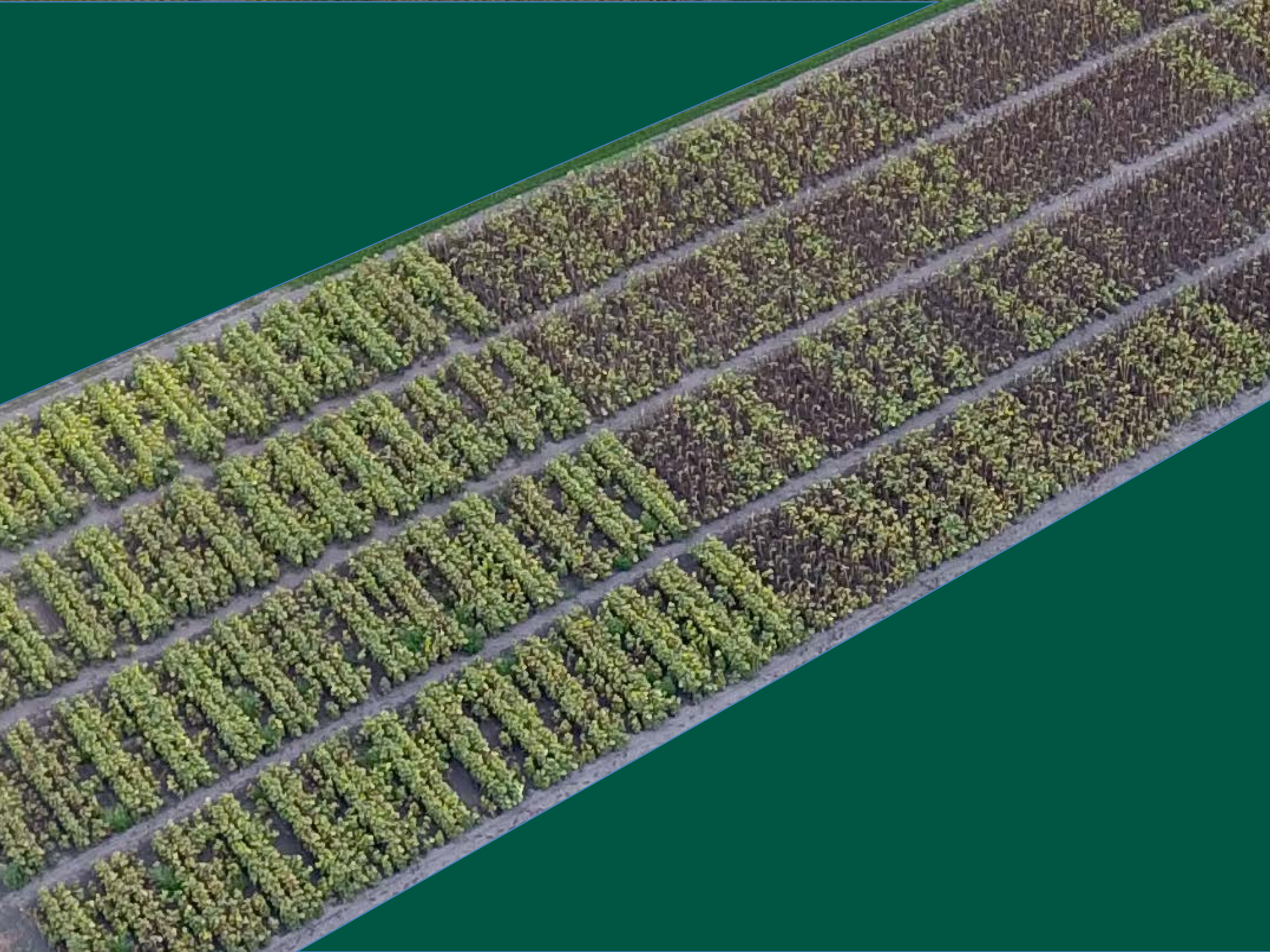


Spraying

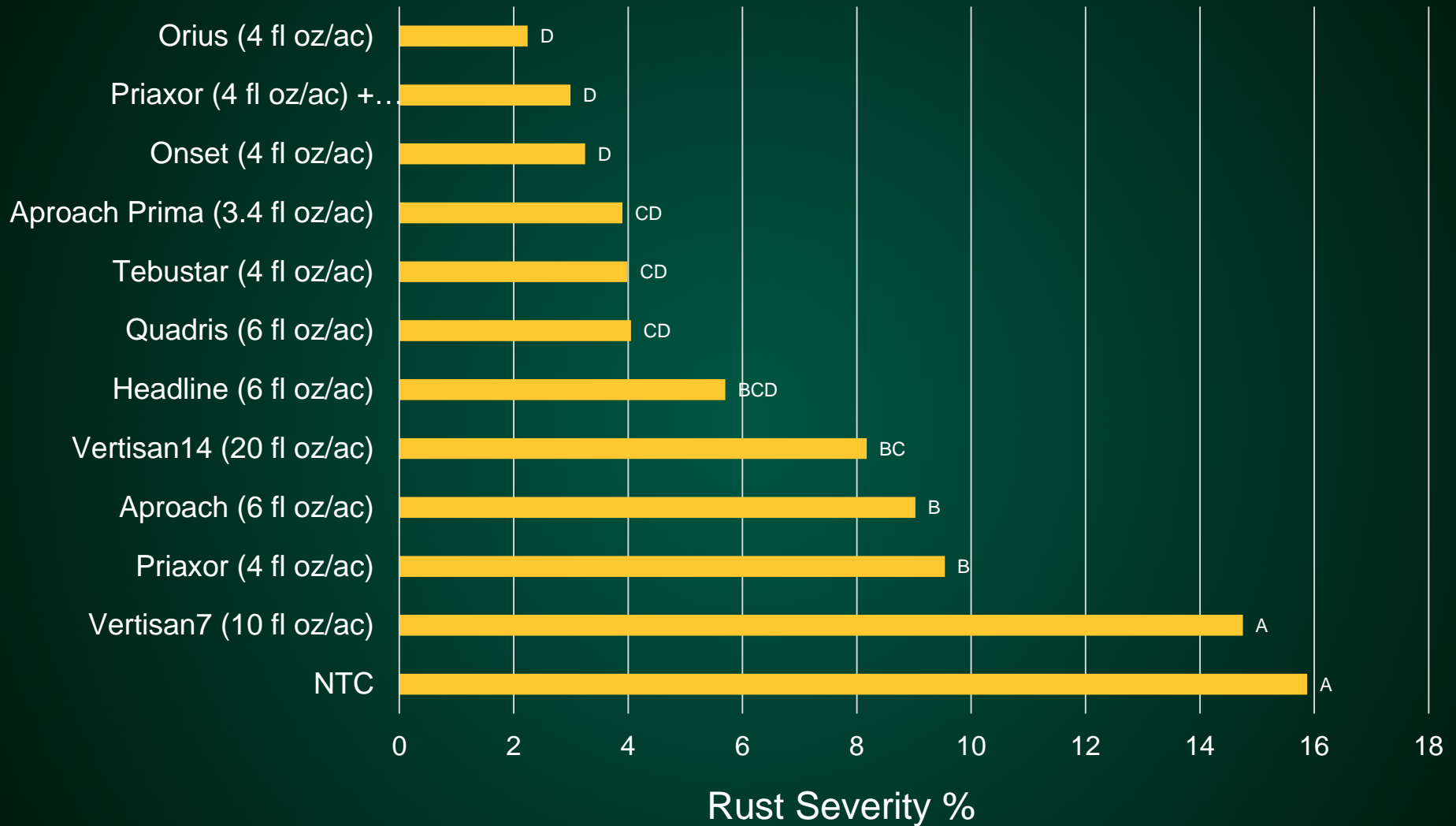


Results



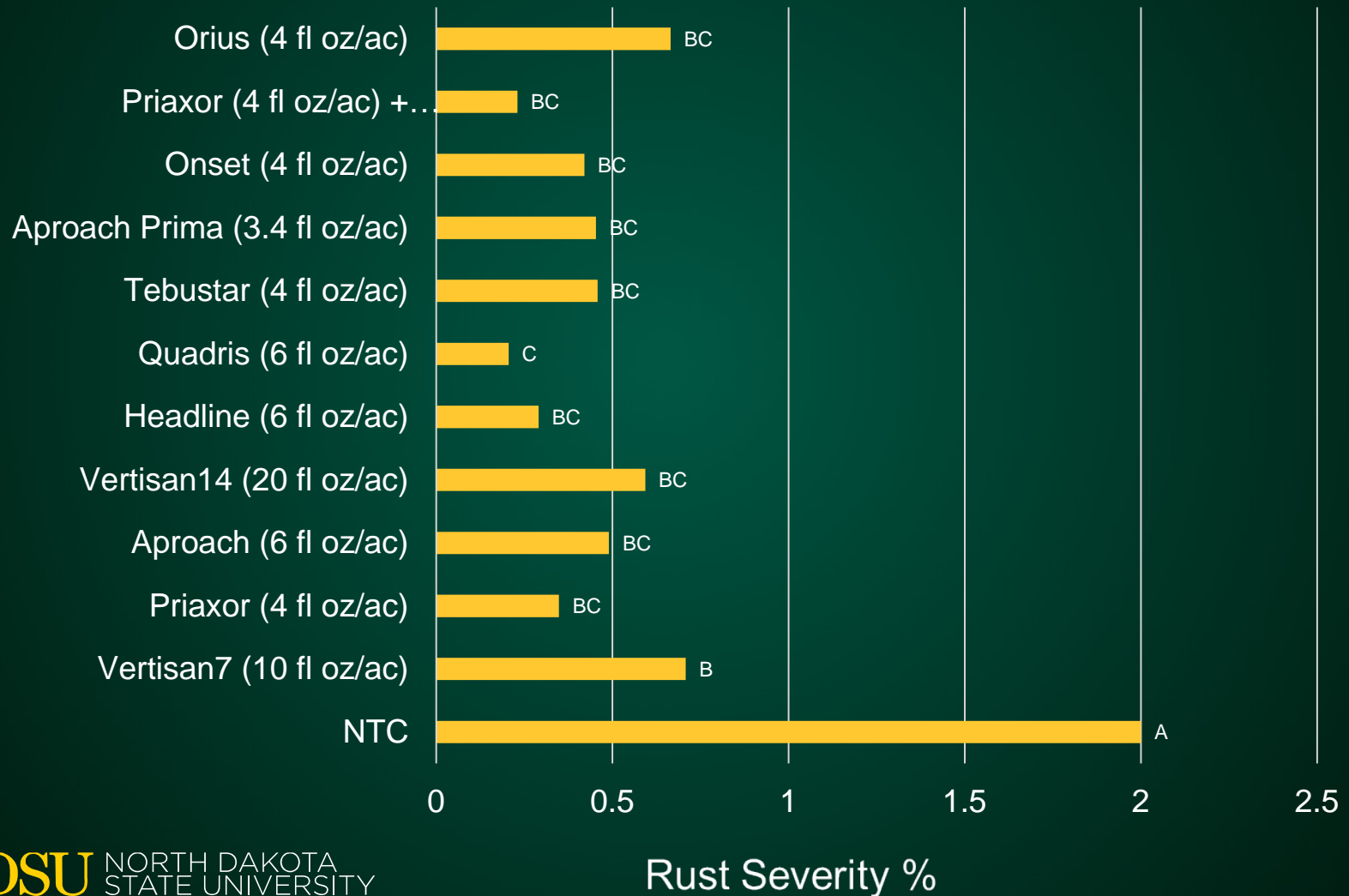


Leonard, ND (BASF)- Susc.



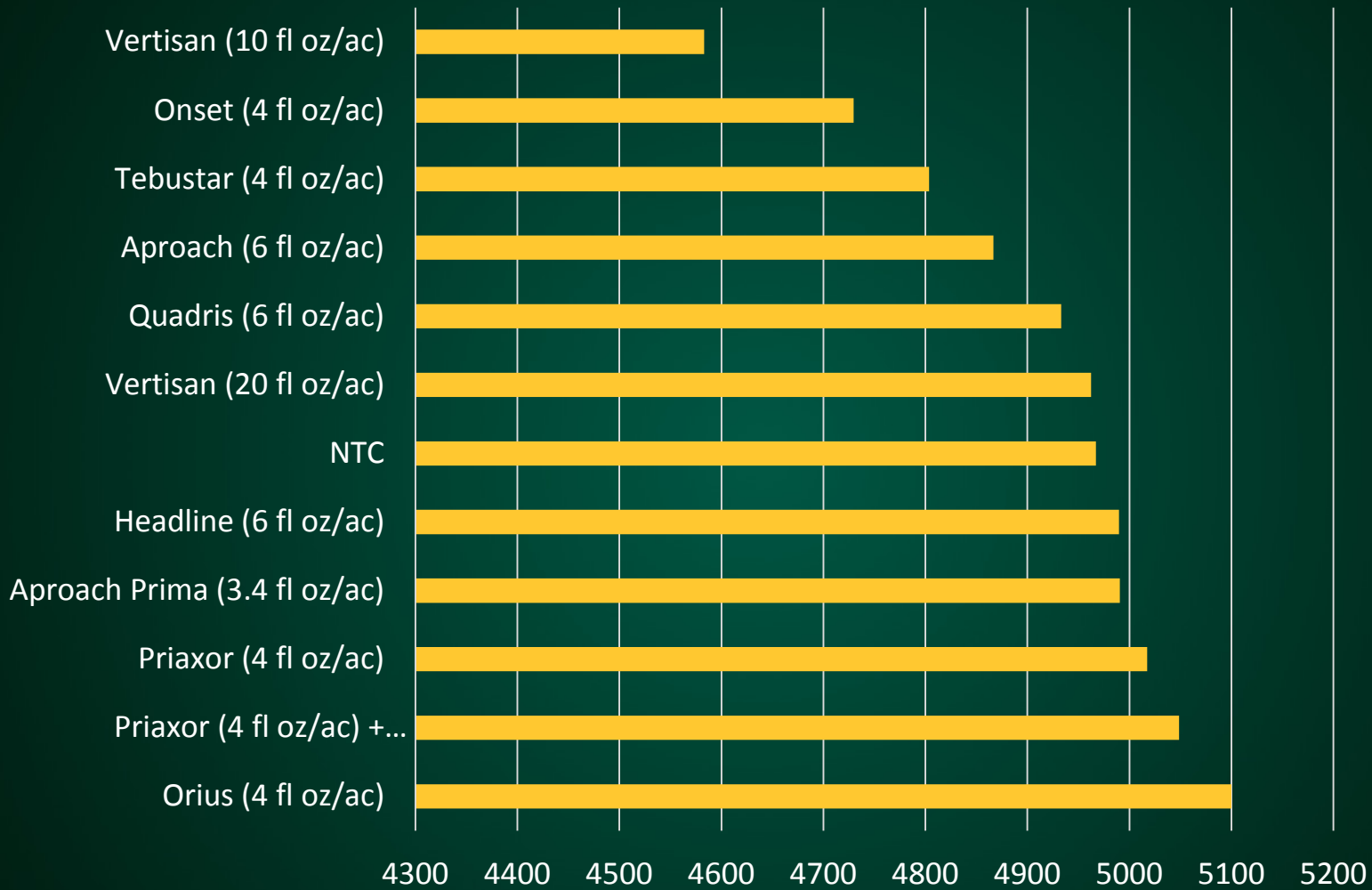
Leonard, ND (BASF) MR

Moderately resistant



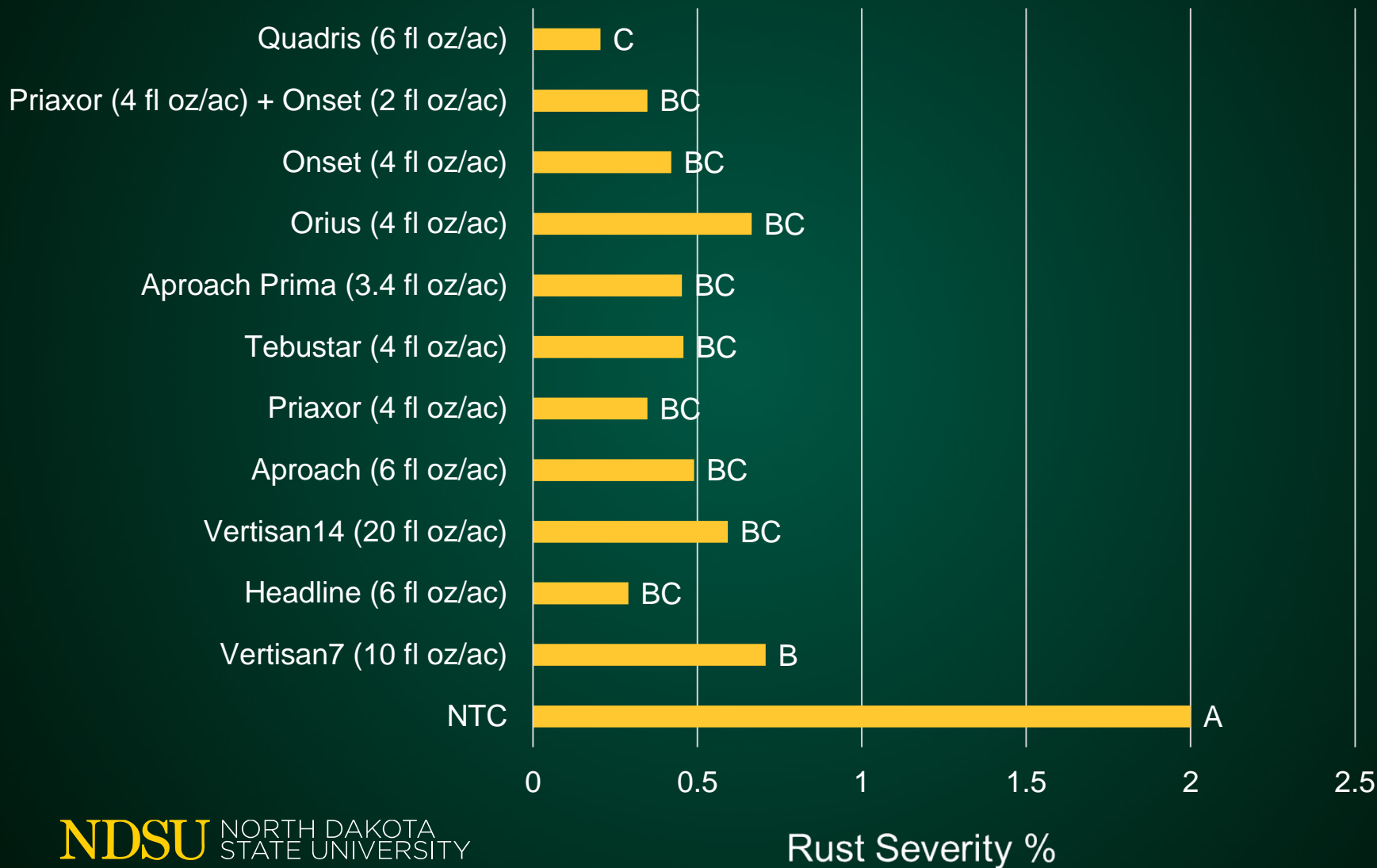
Leonard, ND (BASF)

Yield



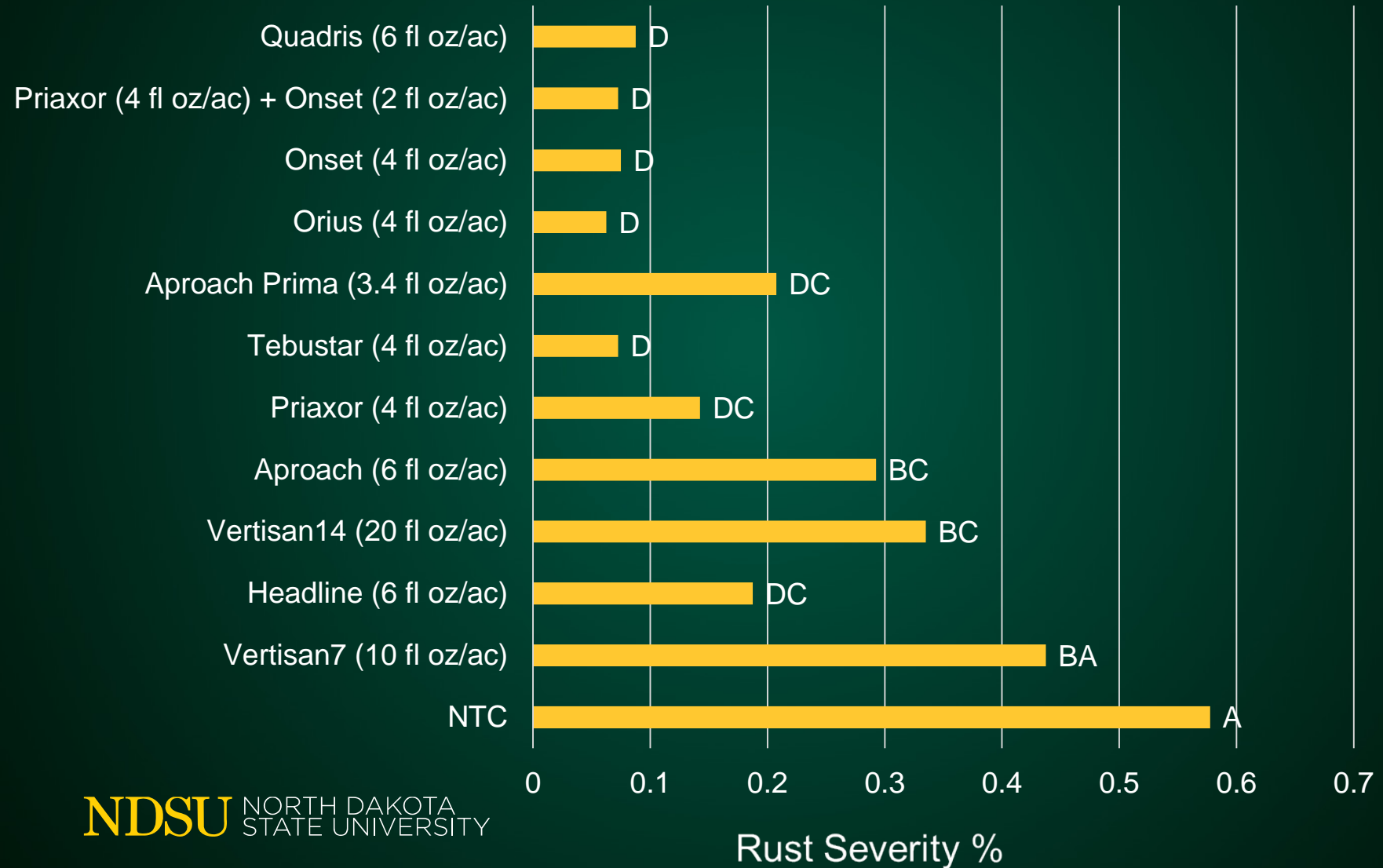
Rothsay (Mycogen Seeds)

Susceptible



Rothsay (Mycogen Seeds)

Moderately Resistant



Conclusion

- MR is very effective
- Generic's tebuconazoles were the same
- Pre-mixes work as expected by mode of action (generally)
- Would like at least one more trial with high disease pressure

Acknowledgements

- National Sunflower Association
- NDSU Agriculture experiment Station
- NDSU Extension Service
- BASF
- Mycogen

Thank you for your time!

