

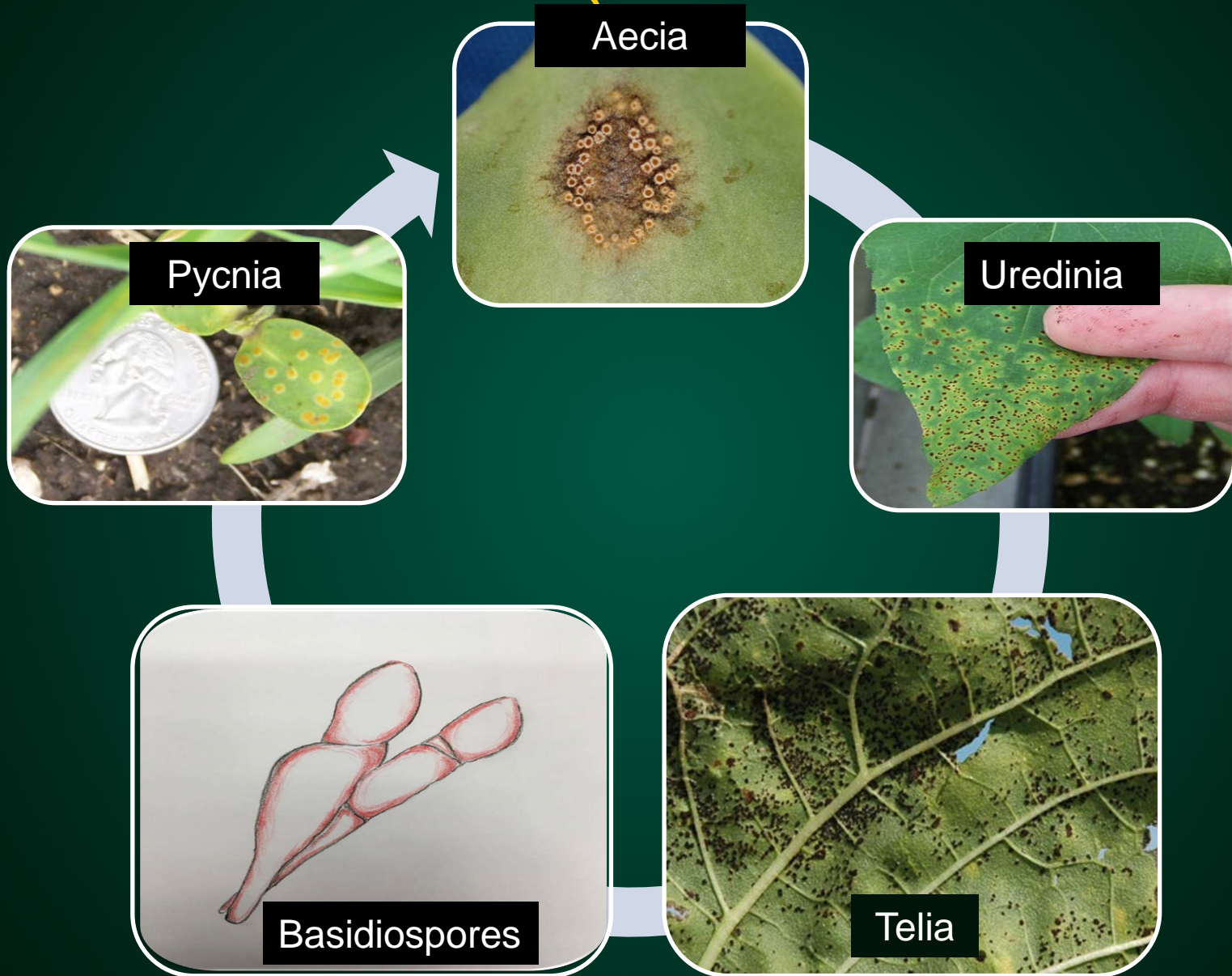
Evaluation of fungicides for management of rust on oil seed and confection sunflower hybrids

Brandt Berghuis, Michelle Gilley,
Jessica Halvorson, Mathew
Breiland, Bryan Hansen, Blaine
Schatz, Mark Halvorson, Scott
Fitterer, Dave Carruth, Bob
Benson, Samuel Markell

Outline

- I. Introduce rust and fungicides
- II. Objective
- III. Materials and Methods
- IV. Conclusion
- V. Acknowledgements

Sunflower rust (*Puccinia helianthi*)





Mohall, ND
2008



Introduction fungicides

- The optimal fungicide timing was severity of 1% at or before R5
- All fungicide trials were on confection hybrids



Objective

- The objective of this study is to evaluate the efficacy of new fungicides on oil seed and confection sunflower hybrids for rust management

Materials and Methods

- Two trials in 2016 and 2017
- Oil seed and confection sunflower hybrids trials were planted in four row plots
- Randomized complete block design
- Four reps
- Twelve fungicide treatments

Treatments	FRAC Group	Rate (fl oz)	Active Ingredient
Non-treated	NA	NA	NA
Onset	3	4	Tebuconazole
Orius	3	4	Tebuconazole
Tebustar	3	4	Tebuconazole
Headline	11	6	Pyraclostrobin
Quadris	11	6	Azoxystrobin
Aproach	11	6	Picoxystrobin
Vertisan	7	10	Penthiopyrad
Vertisan	7	20	Penthiopyrad
Aproach Prima	11, 3	3.4	Picoxystrobin, Cyproconazole
Priaxor	7, 11	4	Fluxapyroxad, Pyraclostrobin
Priaxor + Onset	7, 11, 3	4+2	Fluxapyroxad, Pyraclostrobin, Tebuconazole

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Increasing Inoculum



Increasing Inoculum





Inoculated at
V2 and V4





Spraying



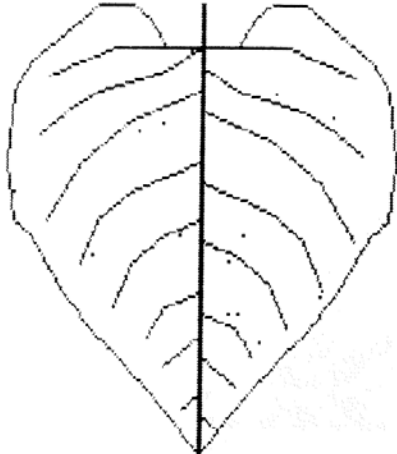
Sprayed at R5

20 gallons per acre

Teejet 8002 nozzles

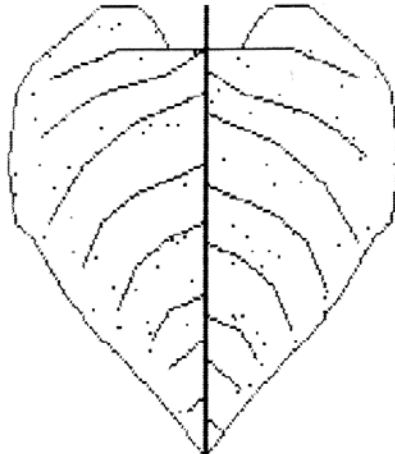
Rust Severity Ratings

0.1%



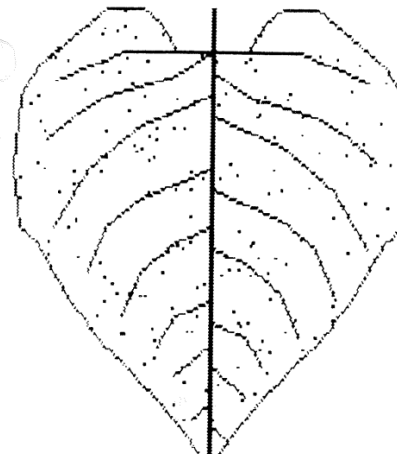
Leaf Area Affected .1%

0.5%



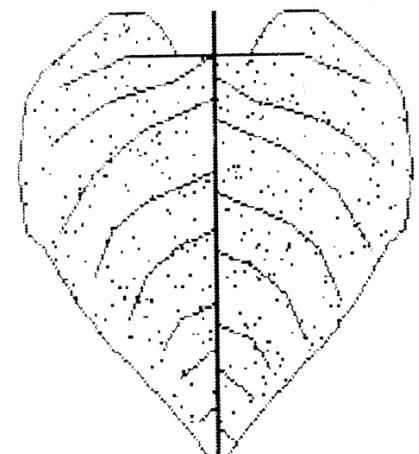
Leaf Area Affected .5%

1%



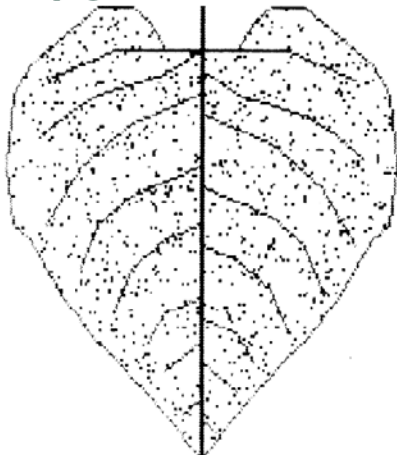
Leaf Area Affected 1%

2%



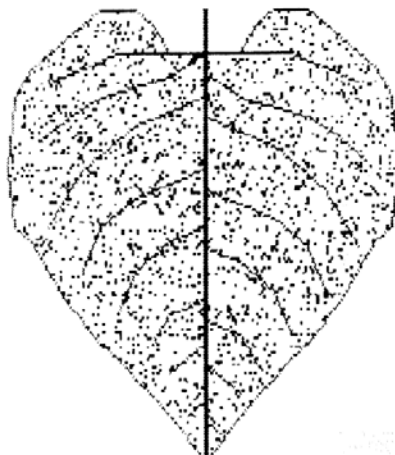
Leaf Area Affected 2%

5%



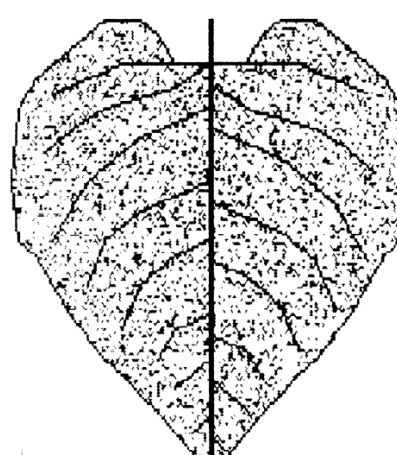
Leaf Area Affected 5%

10%



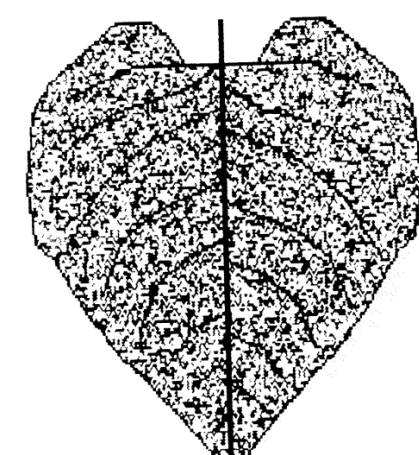
Leaf Area Affected 10%

20%



Leaf Area Affected 20%

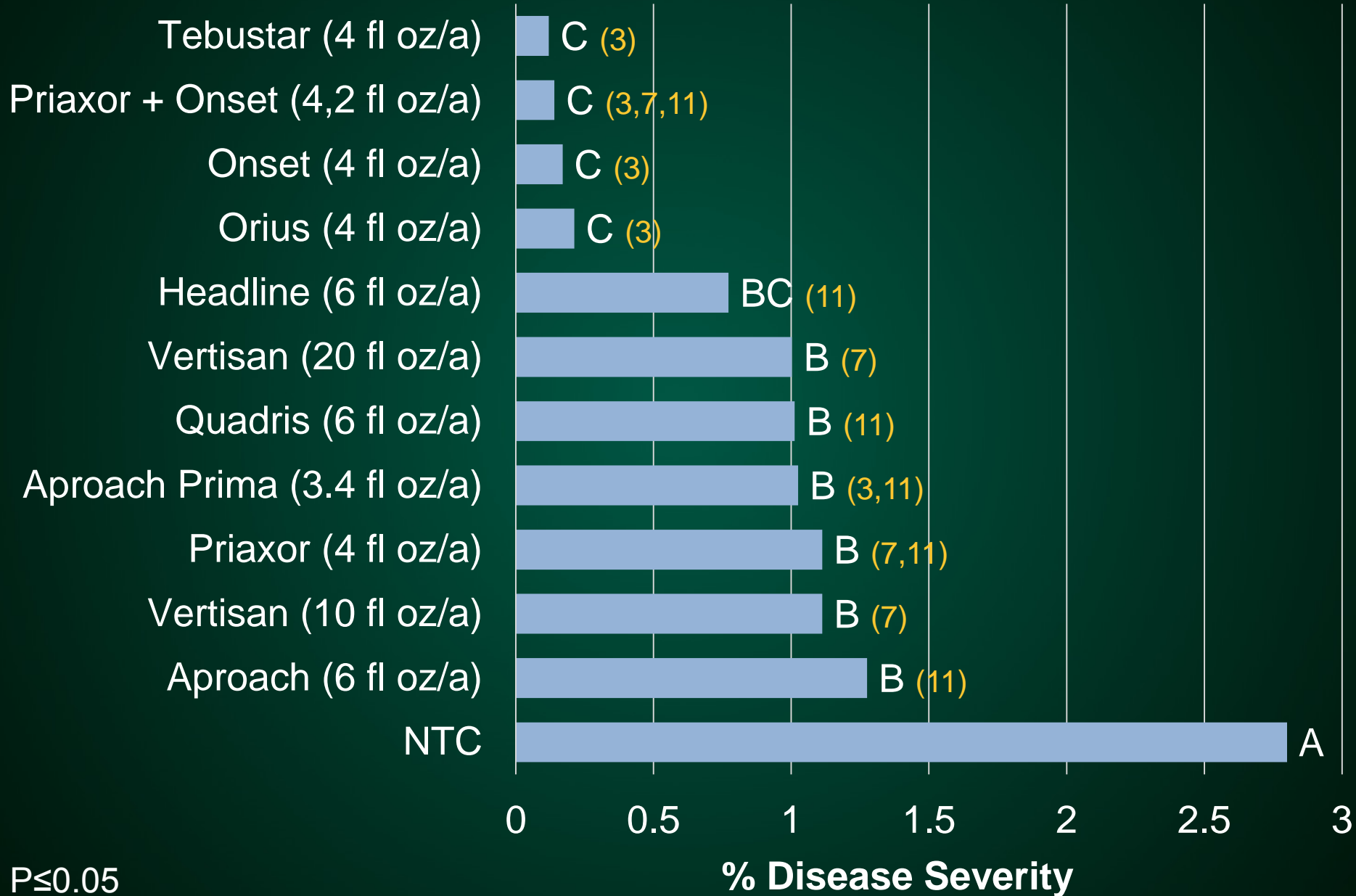
40%



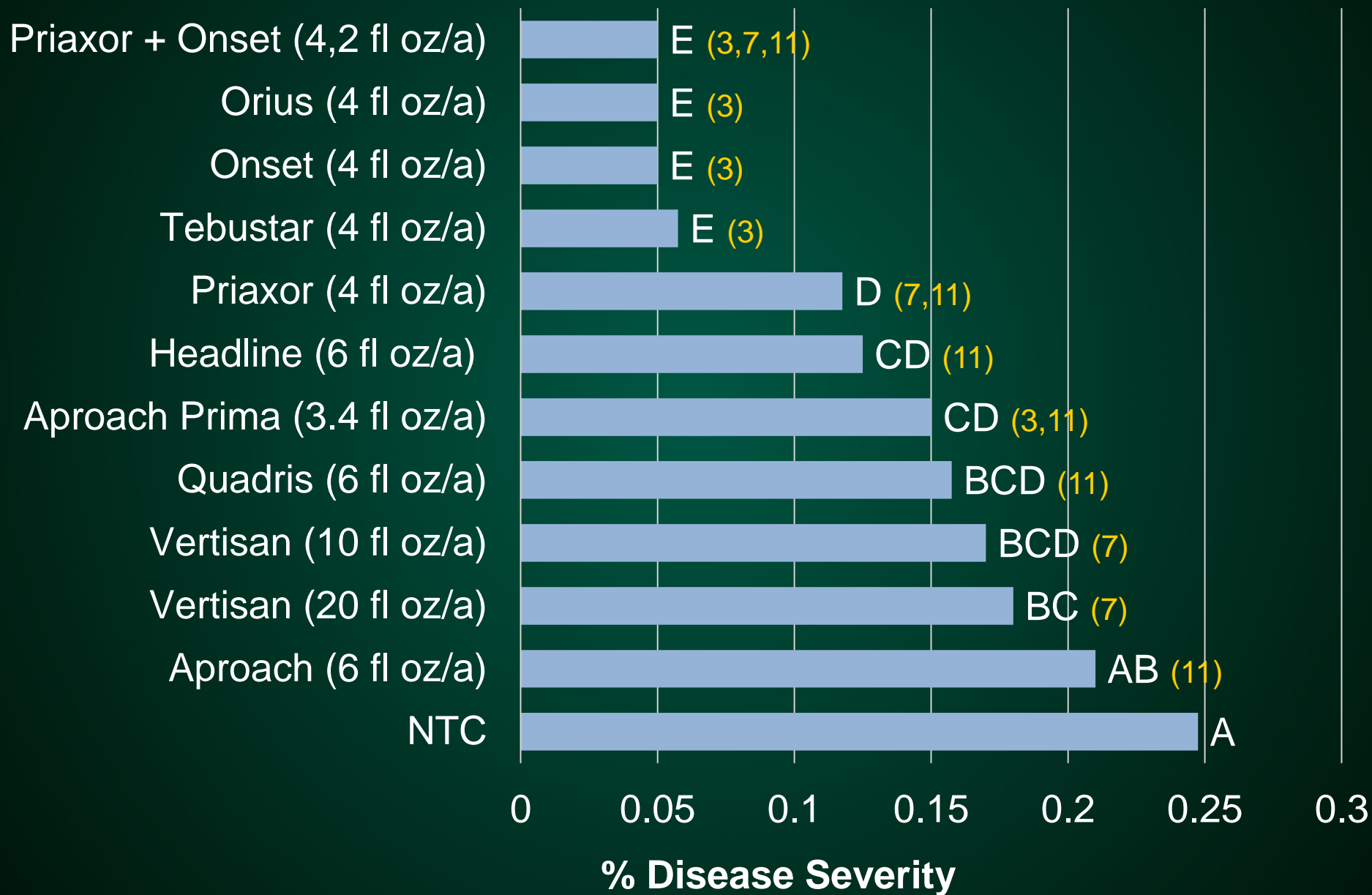
Leaf Area Affected 40%

(Friskop et al 2011)

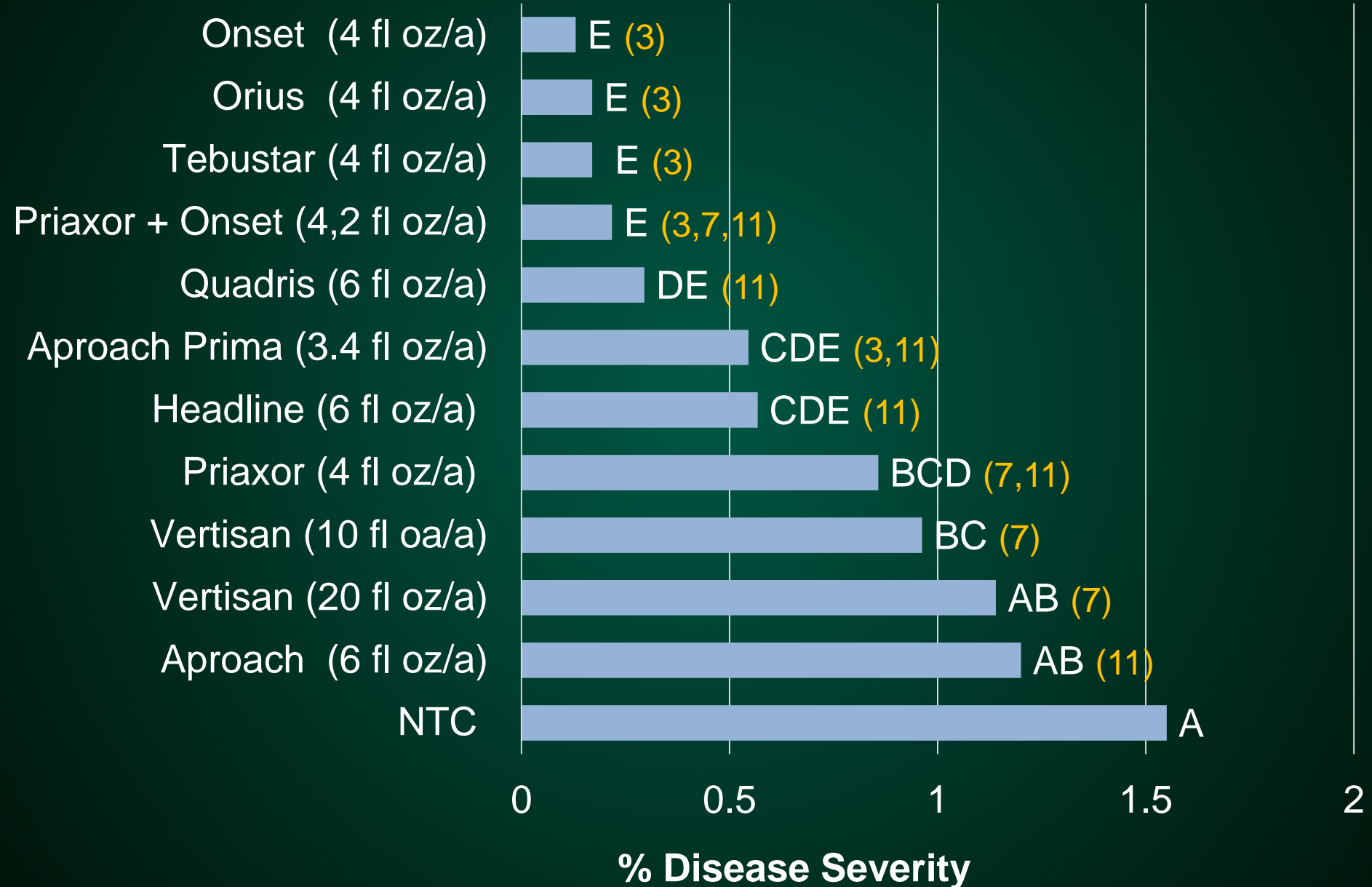
Oil Seed Hybrid in Davenport, ND



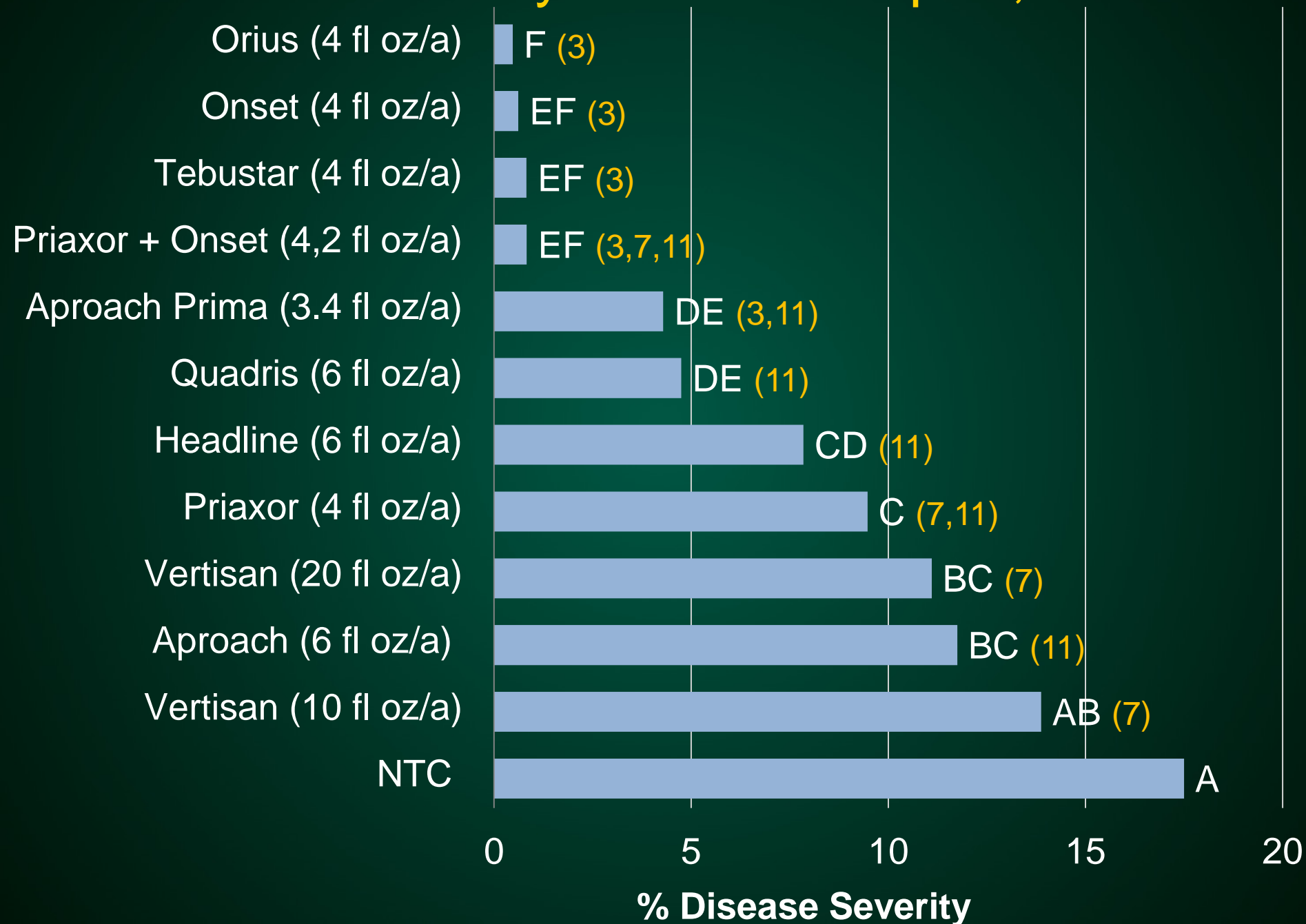
Oil Seed Hybrid in Carrington, ND



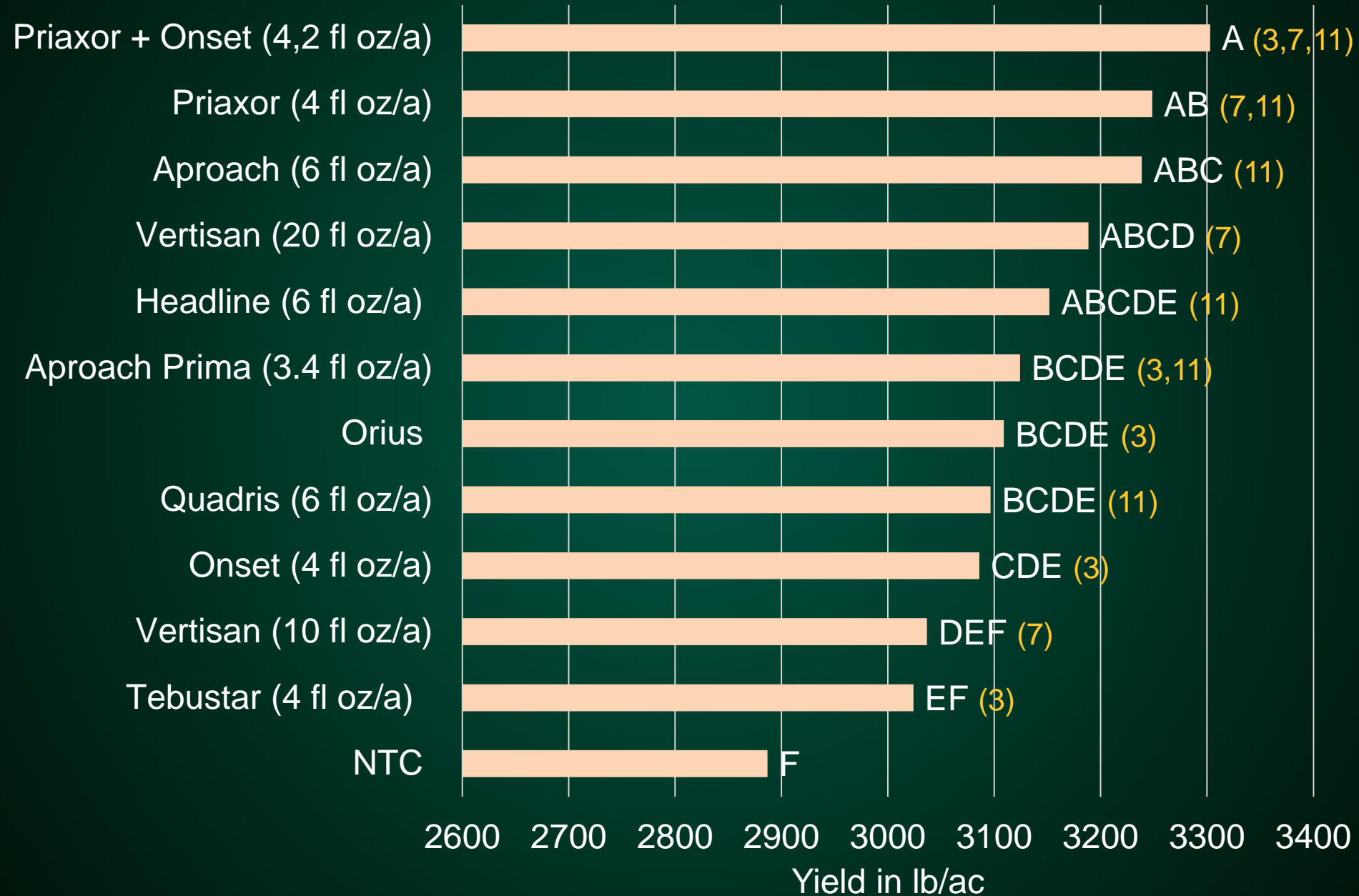
Confection Hybrid in Carrington, ND



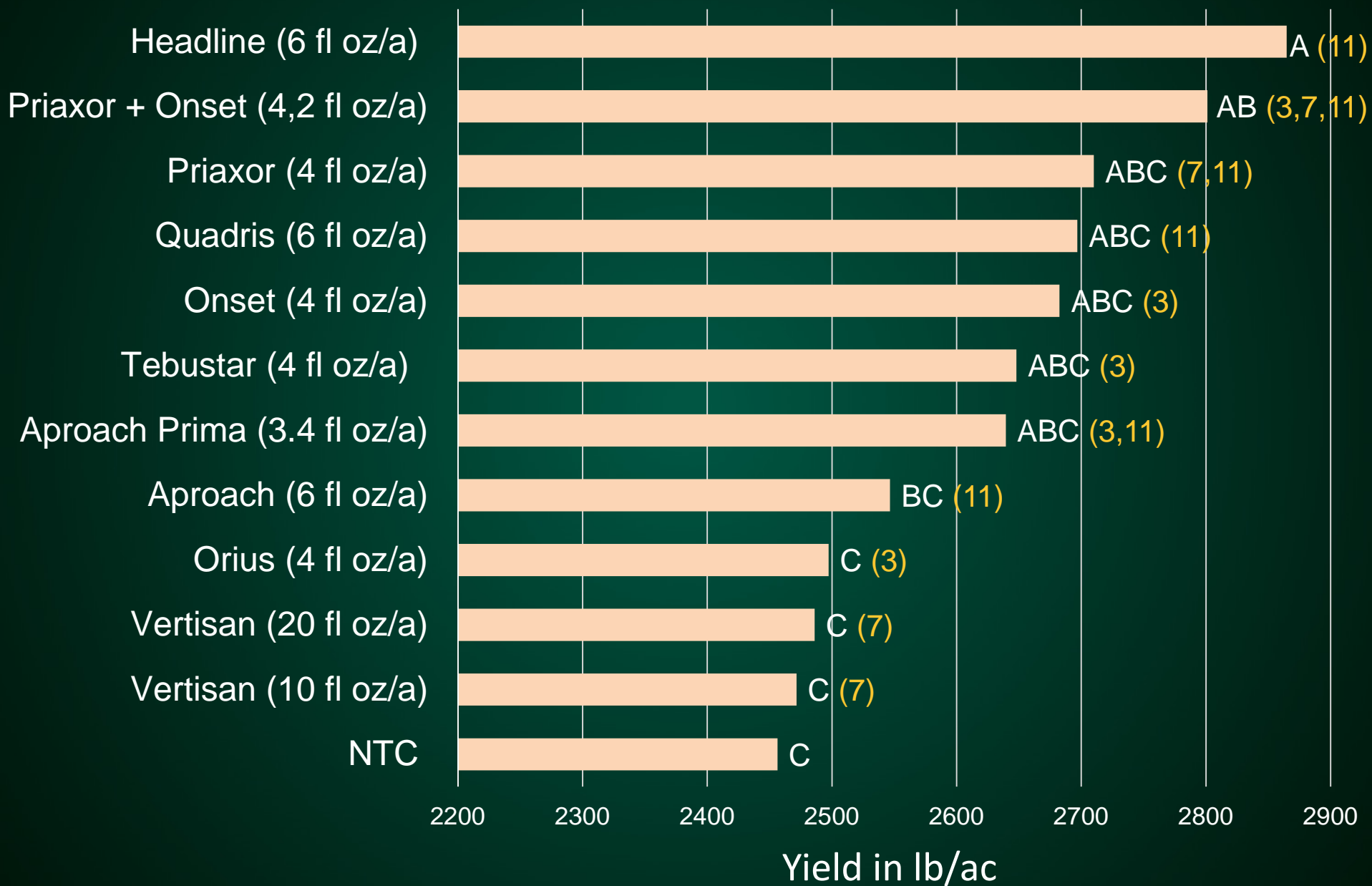
Confection Hybrid in Davenport, ND



Oil Seed Yield Data for Davenport, ND



Confection Hybrid Yield in Davenport, ND



Conclusion

- DMI and QoI chemistries generally worked the best
- Oil seed hybrids provided better control than confection
- Lots of effective fungicides
- Would like at least one more year with high disease pressure

Acknowledgements

- National Sunflower Association
- NDSU Agriculture Experiment Station
- NDSU Extension Service
- BASF
- Mycogen Seed
- Carrington Research Extension Center