

2021 pinto
bean
Rhizoctonia
trial



2021 field trial objectives:

- Evaluate the efficacy of several in-furrow fungicides for control of *Rhizoctonia solani* in pinto beans.
- Evaluate the effect of Quadris (azoxystrobin) timing of application for soil-borne rhizoctonia disease control.

2021 pinto bean Rhizoctonia trial

#	Treatment	Method	AI/ fungicide group
1	Untreated	-	
2	Blocker 4F 4 pt/a	In furrow AP	Pentachloronitrobenzene (PCNB) 14
3	Quadris 15.5 floz/a	In furrow AP	Azoxystrobin 11
4	Proline 480SC 5 floz/a	In furrow AP	Prothioconazole 3
5	Fontelis 30 floz/a	In furrow AP	Penthiopyrad 7
6	Quadris 15.5 floz/a	Foliar 4 WAP	Azoxystrobin 11

Handheld CO2 boom sprayer held just above open furrow, 14.4 GPA

Planting- May 20th



- 'Windbreaker' treated pinto bean
- 2.5" seed spacing
- 22" row spacing



- Custom vacuum-plate planter
- Press wheels help up for in-furrow inoculation and sprays

Inoculum preparation

Rhizoctonia solani AG-11

Grown on sterilized barley for bulk inoculation



Inoculation



Stand loss- June 14th (25 DAP)



Mid-season- July 1st (42 DAP)



Mid-season stem assessments- July 6th (47 DAP)

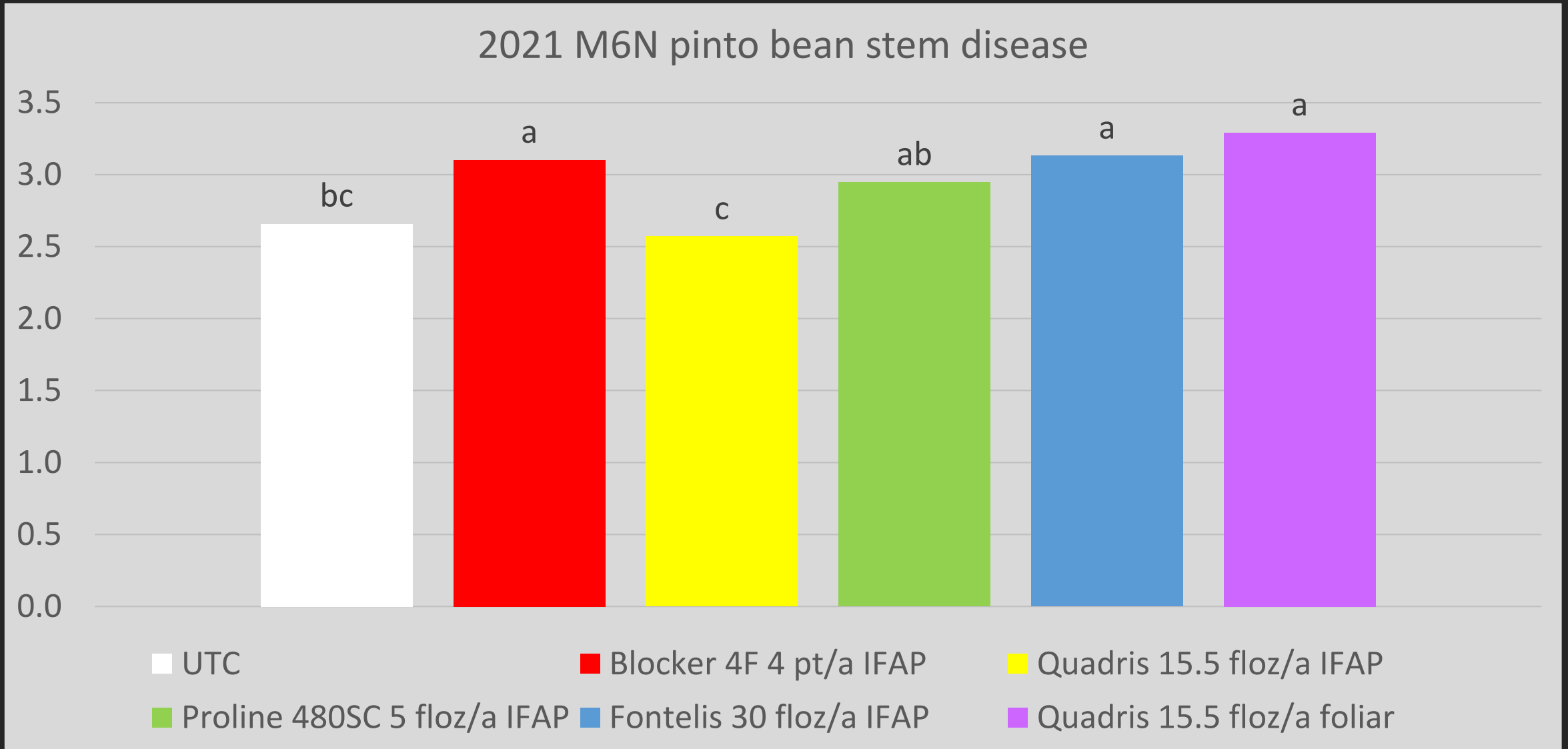
- 20 plants randomly sampled from each plot
- 0 = no damage
- 1 = minor damage less than 5 mm in size
- 2 = moderate damage > than 5 mm and some girdling present
- 3 = major damage, large lesions and girdling or death present on most stems
- 4 = all stems killed



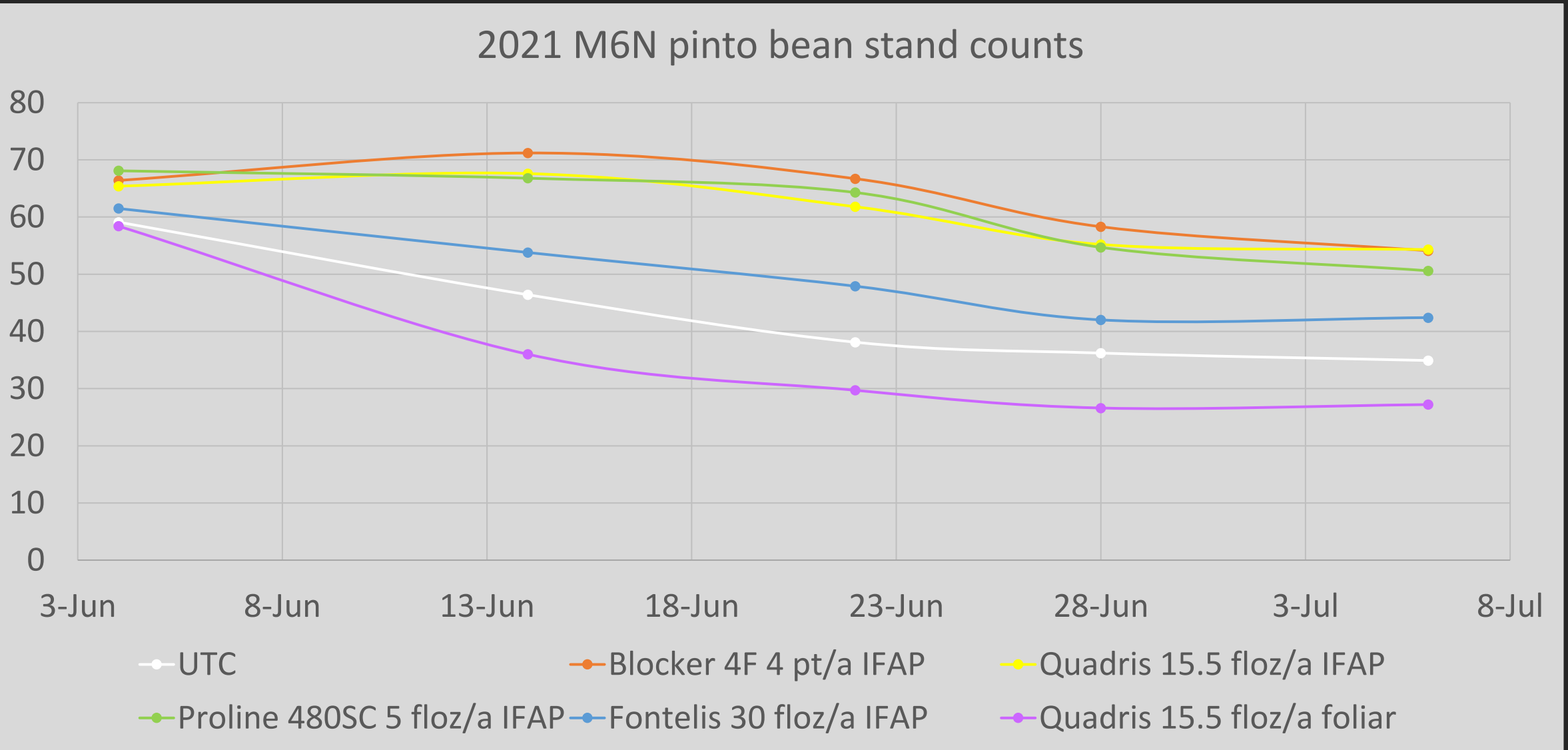
Harvest-
Sep. 16th
(119 DAP)



2021 Results- stem disease

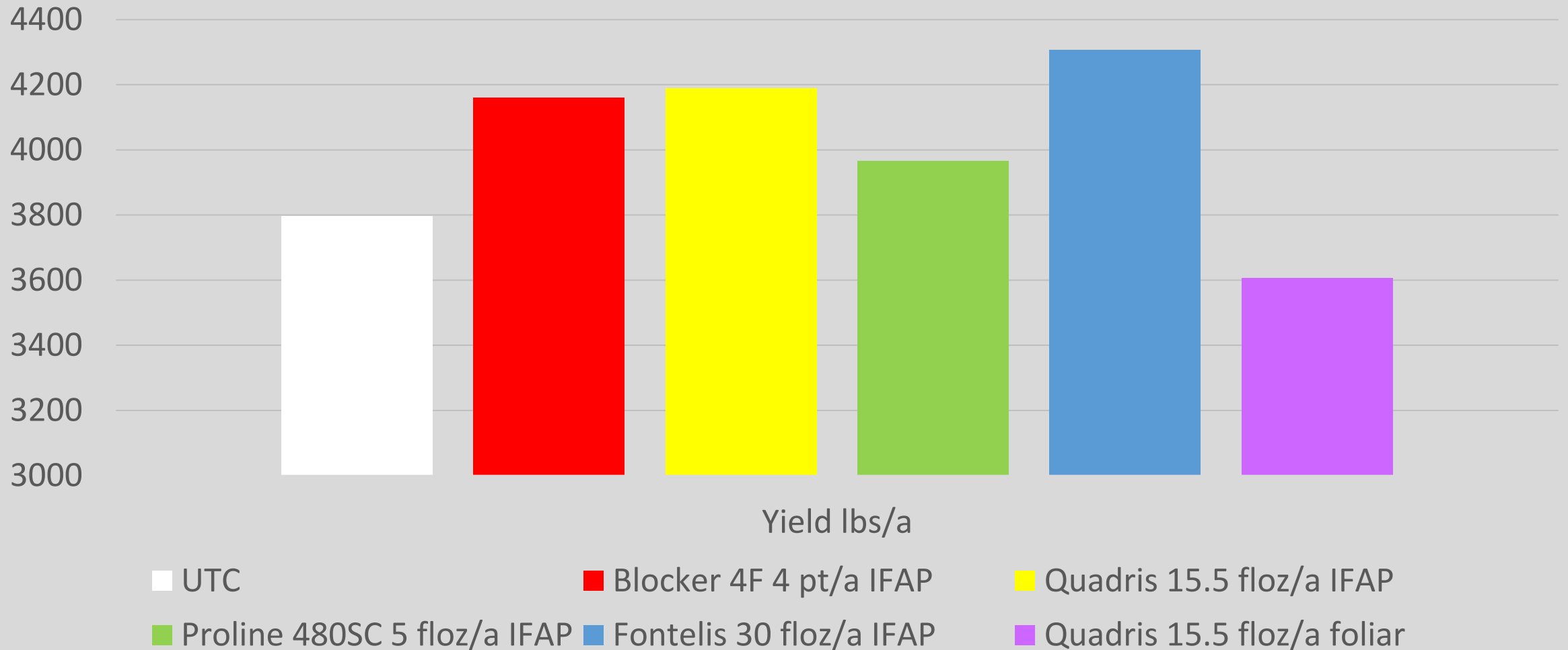


2021 Results- stand counts



2021 Results- yield

2021 M6N pinto bean yield lbs/a



Conclusions

- For stem disease, Quadris in-furrow and untreated control had lower average stem disease.
- For stand counts- Quadris, Blocker, and Proline in-furrow all significantly outperformed untreated control, Fontelis in-furrow, and Quadris foliar.
- More plants survived with in-furrow treatments, but still showed disease symptoms.
- Variation among replicates was too high to achieve statistical significance.

Moving forward

- Evaluate other chemicals, rates, timings, and combinations
- Bigger plots to hopefully improve yield variation
- Investigate effects of bean variety

Acknowledgements

- Parma Plant Pathology lab
 - James Woodhall
 - Lara Brown
 - Christian Cumagun
 - Chris Ballou
 - Ben Wood
- Idaho Bean Commission
- Treasure Valley Seed