



Fungicide control of Leaf Mottle in Canary seed



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Canary seed (*Phalaris canariensis* L.)

- Native to the Mediterranean region
- Canary seed production started in 1960's
- Annual grass
- Family: *Poaceae*
- Main use: food for birds

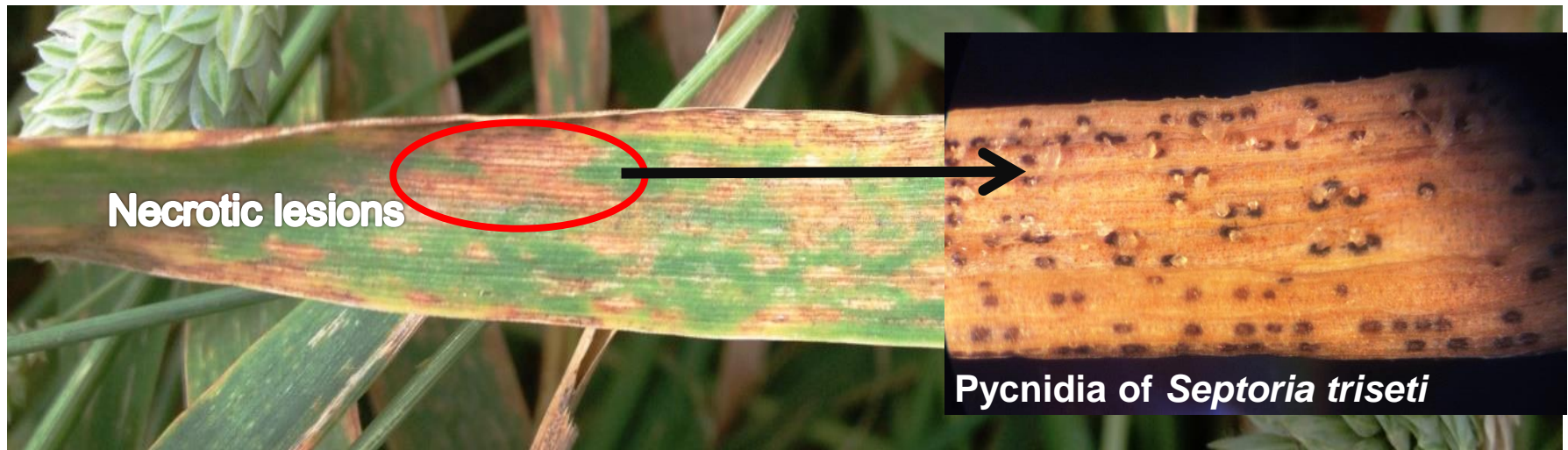


- Unique nutrient content: protein 21%, starch 60% and oil 8%
- Potential uses: animal feed and human consumption
- Canada is the largest producer and exporter of canary seed
- 90% of Canadian production is in Saskatchewan



Leaf mottle (*Septoria triseti*)

- Leaf mottle caused by *Septoria triseti* is the most destructive disease



Control of leaf mottle

- Leaf mottle is controlled by propiconazole in western Canada
- Yield increases of between 20 - 40% were observed after application of fungicides on flag leaf (May *et al.*, 2001)
- Application of prothioconazole + tebuconazole between anthesis and maturation reduced severity by 50% and increased yield by 20% (Rodrigo, 2014)

Hypothesis

Fungicide applications reduce leaf mottle disease and increase yield of canary seed

Objective

To assess the effectiveness of fungicides to control *Septoria triseti* on susceptible and moderately resistant genotypes of canary seed under field conditions

Materials and Methods

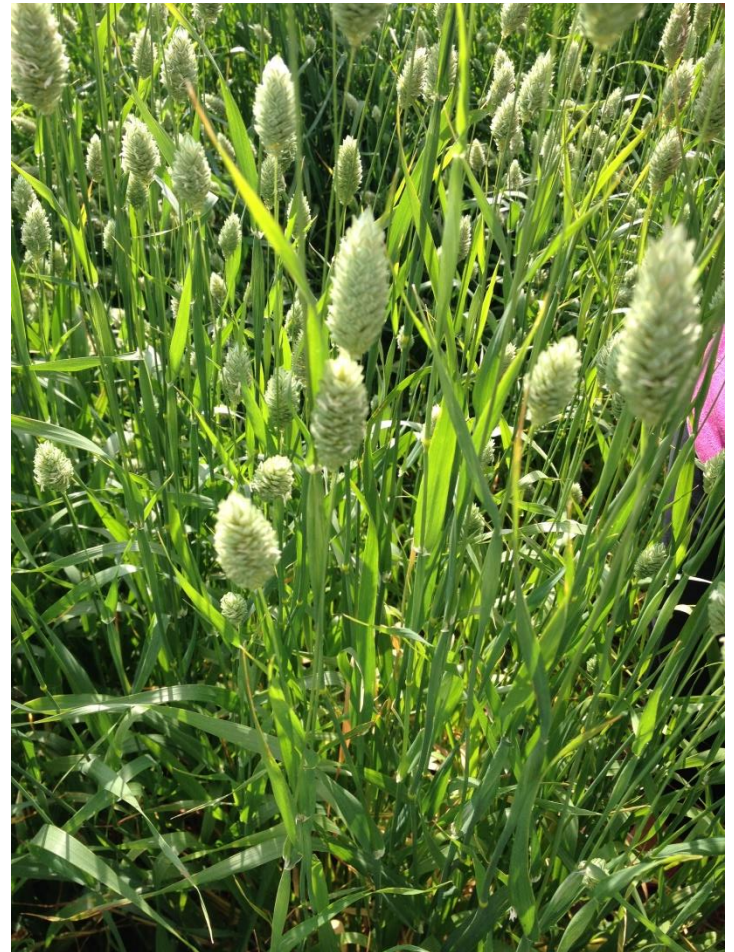
- Locations: Indian Head Research
Saskatoon
- Genotypes: CDC Keet (susceptible)
PI 251274 (moderately resistant)
- Fungicides: Twinline (pyraclostrobin + metconazole)
Prosaro (prothioconazole + tebuconazole)
Bumper (propiconazole)



Application timing



Flag leaf



Heading



Sowing Season: mid-May
250 seeds/m²



Natural Inoculation

Rating scale

- The rating scale will be the Horsfall-Barratt scale (Horsfall et al., 1945).



Grade	Diseased %
0	0
1	0-3
2	3-6
3	6-12
4	12-25
5	25-50
6	50-75
7	75-88
8	88-94
9	94-97
10	97-100
11	100

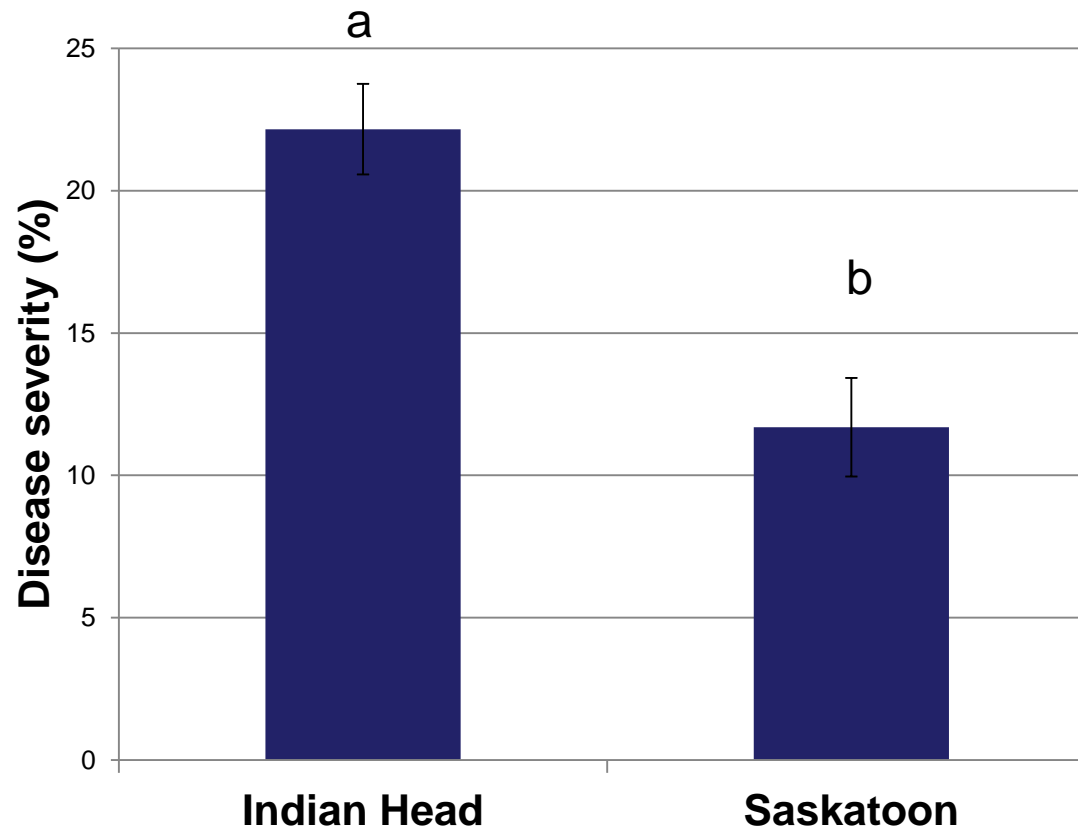
Evaluation

- Disease severity
- Yield, test weight (kg/hl), thousand kernel weight (g), oil (%) and protein (%)
- Seed health test

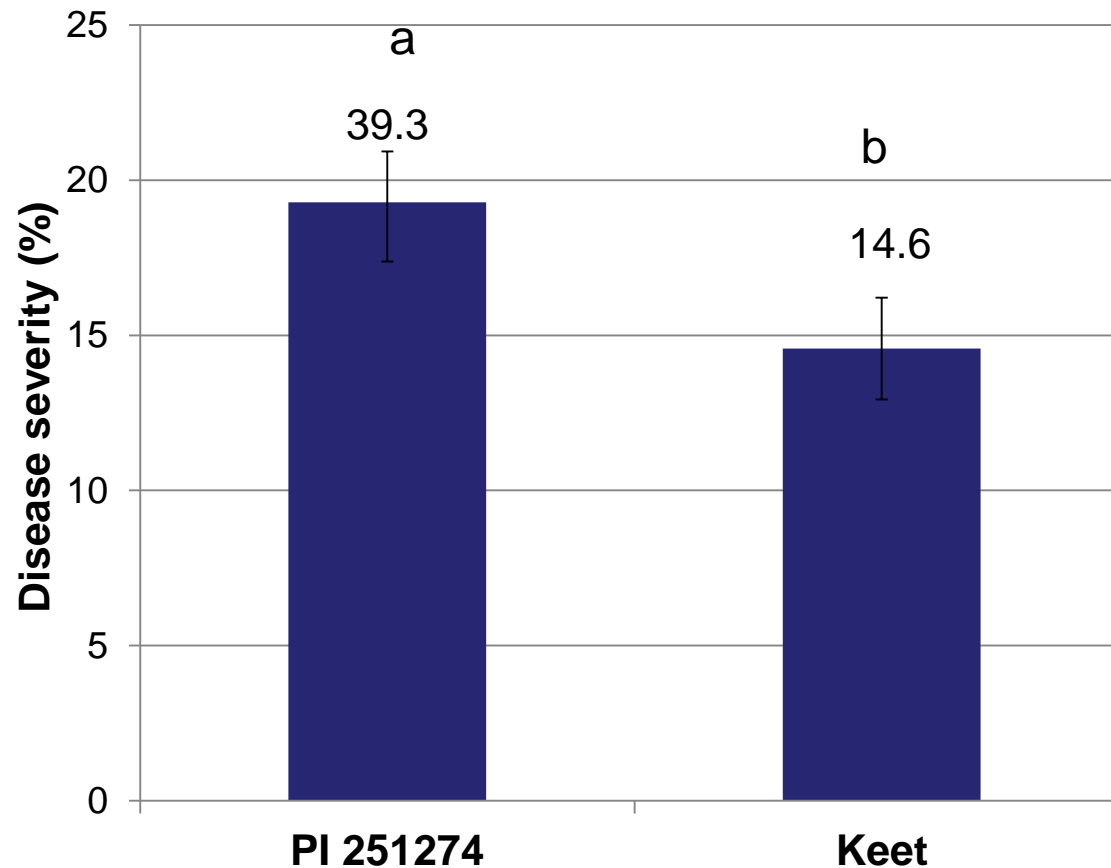


Results:

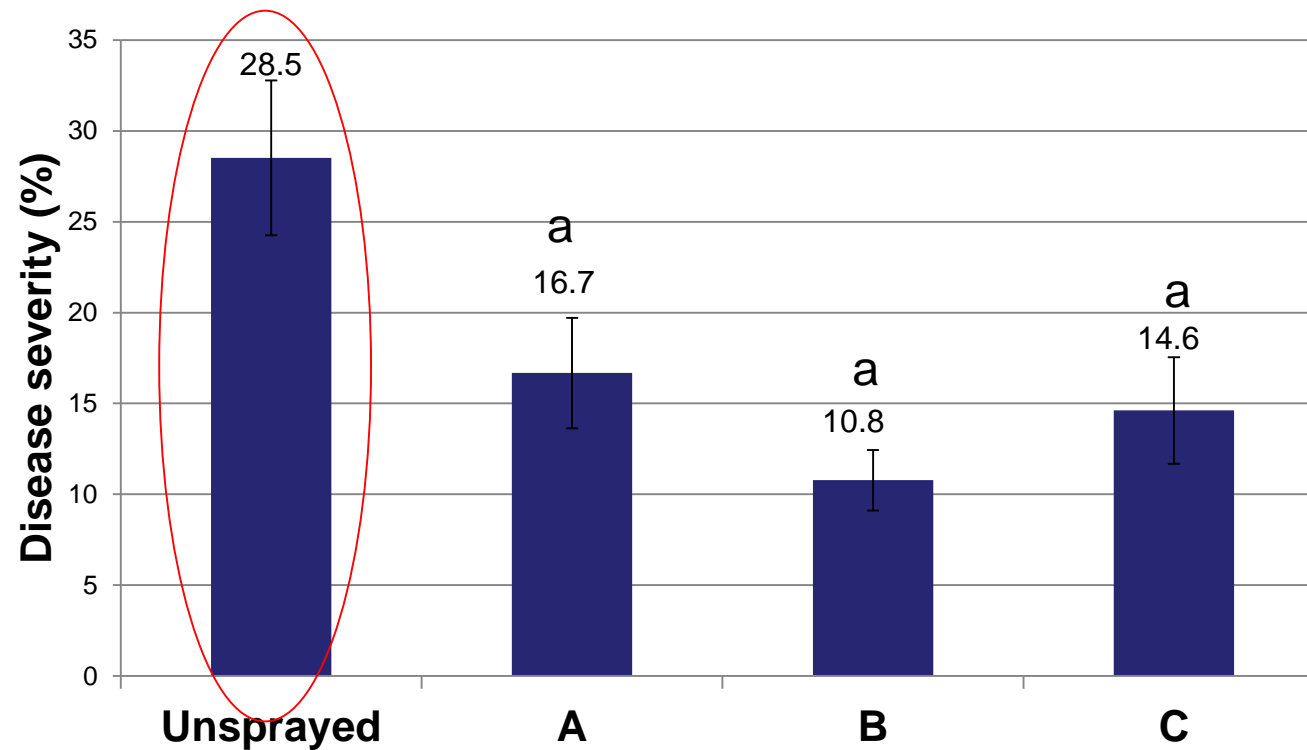
Disease severity of leaf mottle by location



Disease severity of each genotype using combine data

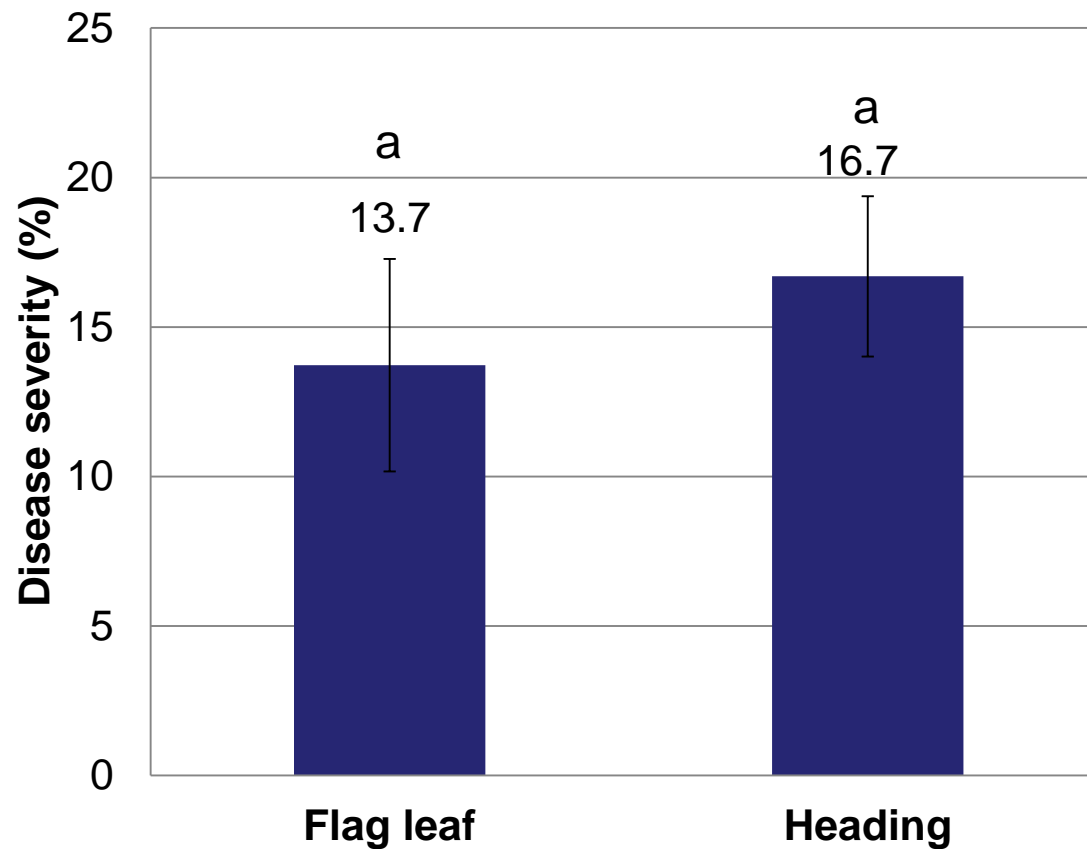


Fungicide response at flag leaf

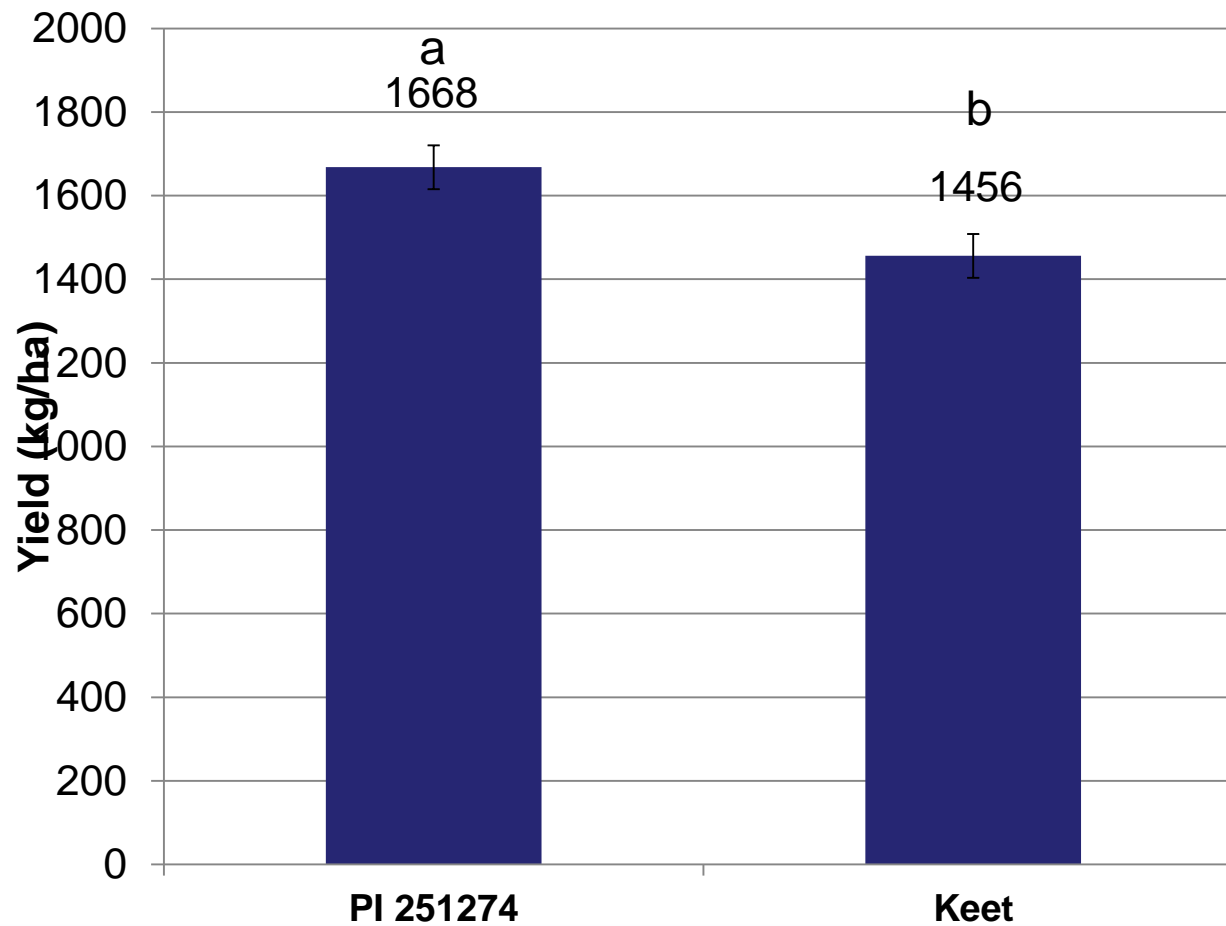


- A:** Propiconazole
- B:** Prothioconazole+tebuconazole
- C:** Pyroclostrobin+metconazole

Fungicide application timing

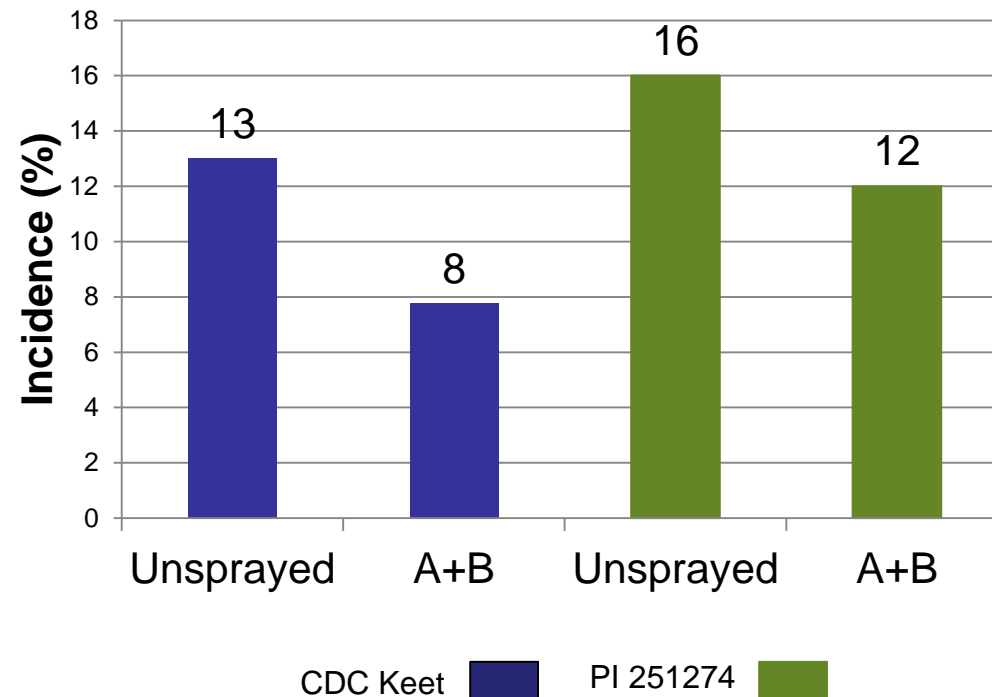


Yield response by genotype (sprayed with fungicide)



Seed test: Incidence of *Fusarium* spp. seed of *Phalaris canariensis*

Saskatoon, 2014



A: Propiconazole
B: Prothioconazole+tebuconazole

Conclusion

- Application of propiconazole fungicide reduced disease severity in CDC Keet (8%) and PI 251274 (13.5%)
- There are no differences in terms of application timing
- Yield response was 13% higher for PI 251274 than CDC Keet, after fungicide control against leaf mottle

Acknowledge

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CFPathology team

AAFC Indian Head



**Saskatchewan
Ministry of
Agriculture**



Thank you

