

Integrated Disease Management

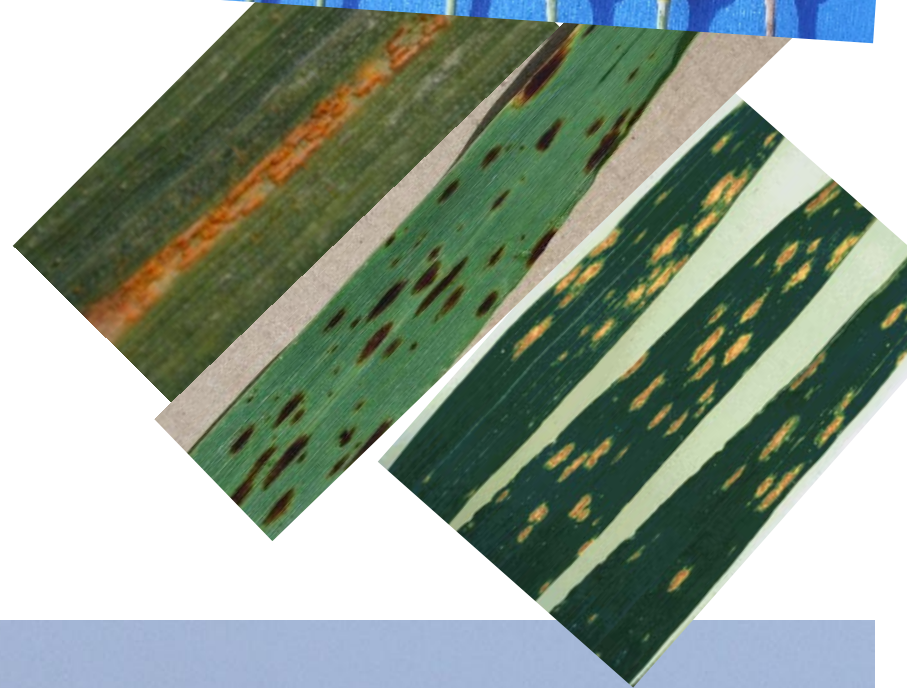


Think Wheat!

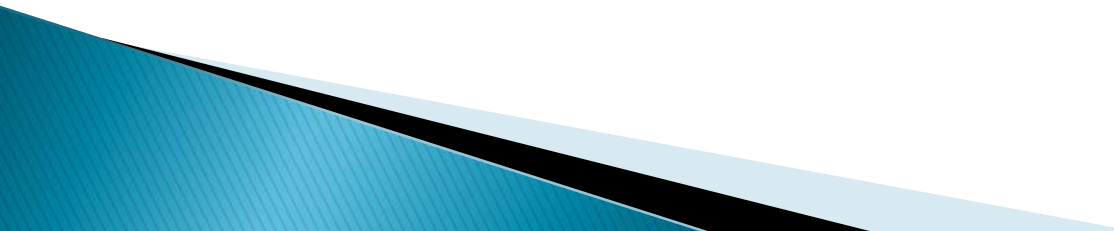
March 2nd,
Salon A & B, Evraz Place, Regina

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Principles of disease control

- Quality seed
 - Scouting and record keeping
 - Good agronomics
(seeding date, rate, time, fertility...)
 - A diverse crop rotation
 - Genetic resistance
 - Fungicides
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Stripe rust of wheat



Stripe rust of wheat, control

- Genetic resistance
- Foliar fungicide application
 - Application timing is difficult
- Crop rotation, tillage, stubble-burning, pathogen-free seed have no effect



Stripe rust

- In 2011, yield losses in western Canada on:

Susceptible varieties: 35%,
Intermediate varieties: 20%
Resistant varieties: <10%



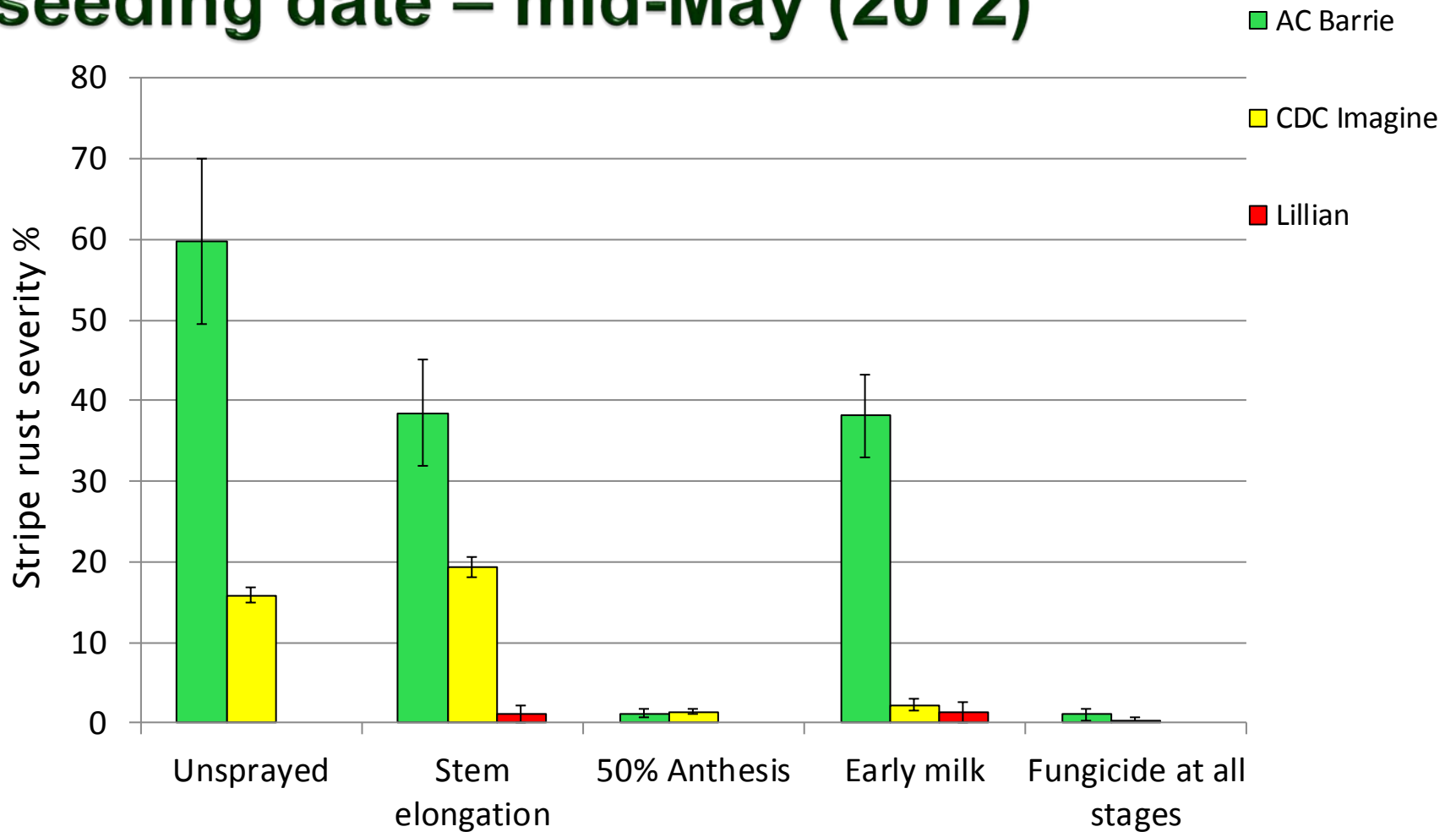
Courtesy C. Pearson, Viterra

Foliar fungicide to control stripe rust of wheat

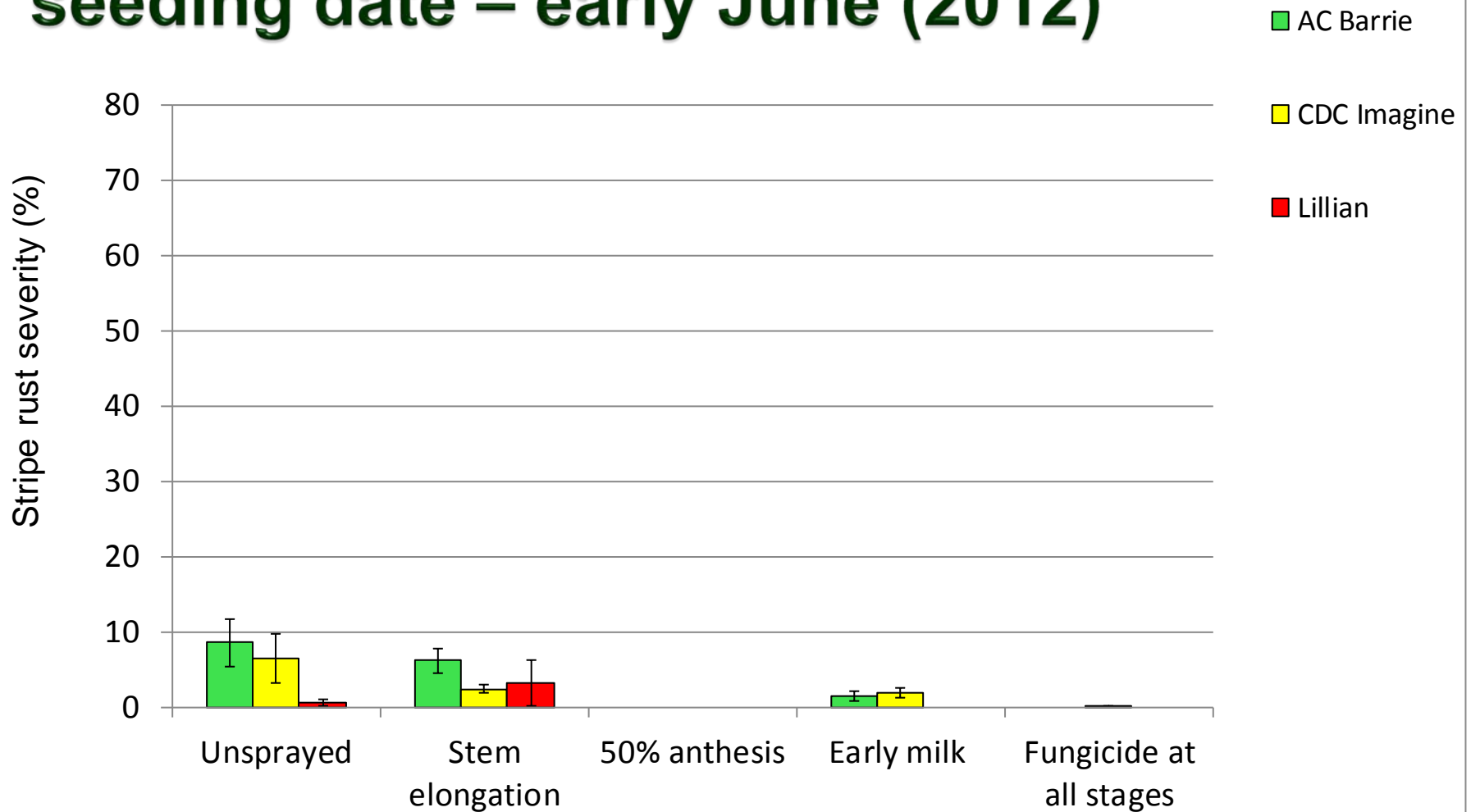
- Not necessary if growing a resistant cultivar
- Goal is to protect the flag and penultimate leaves
- Application timing is unknown
 - Very high rate of disease increase under ideal conditions



Stripe rust fungicide effects seeding date – mid-May (2012)



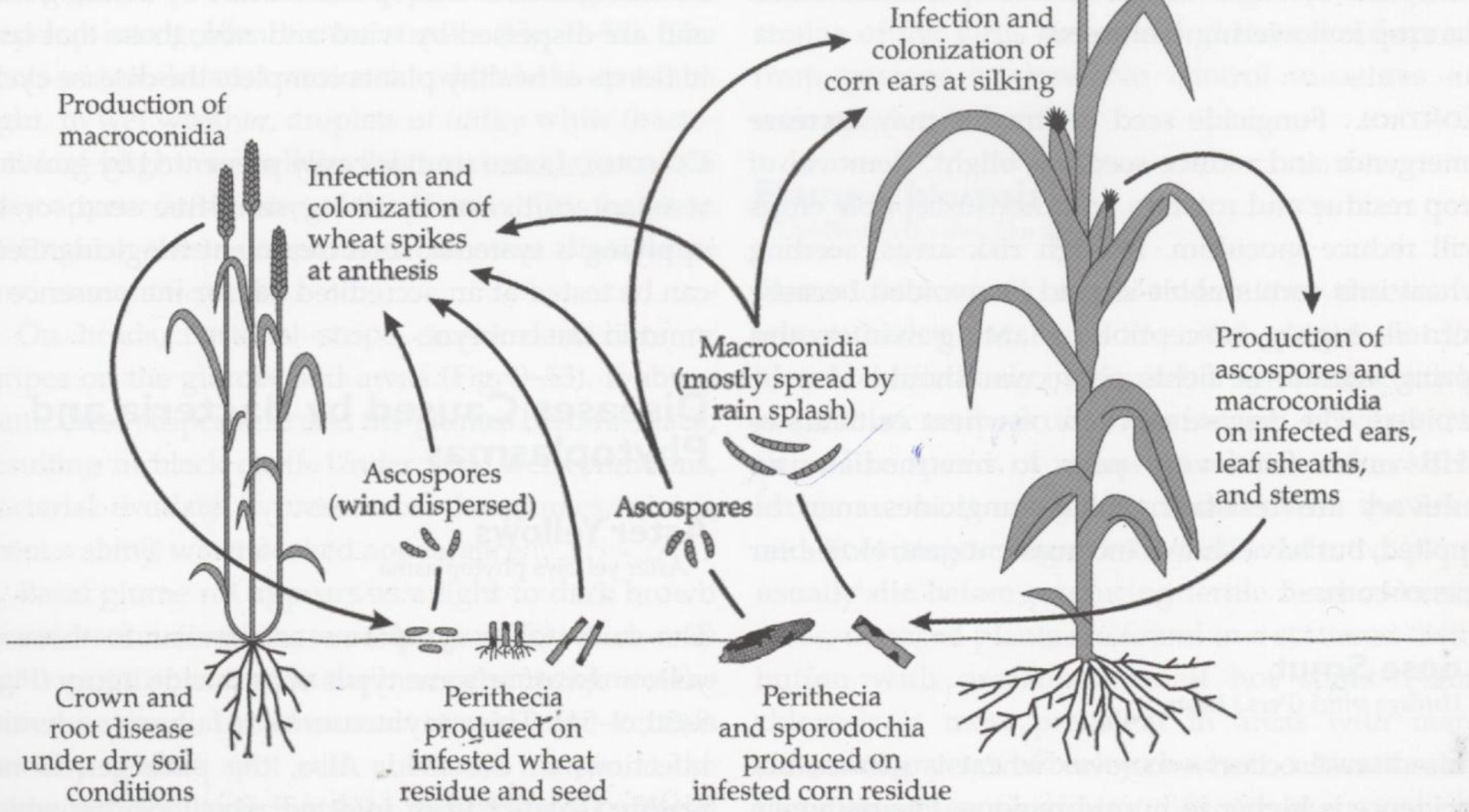
Stripe rust fungicide effects seeding date – early June (2012)



Fusarium head blight (FHB)



Monocyclic Disease



FHB, management strategies:

- Diverse rotation (min. 3 crops)
- (Moderately) resistant varieties
- Fungicides (timing critical)

- Need to do all three well,

Integrated Pest Management

Fungicide timing for FHB



Courtesy T. Vera

FUNGICIDE TIMING

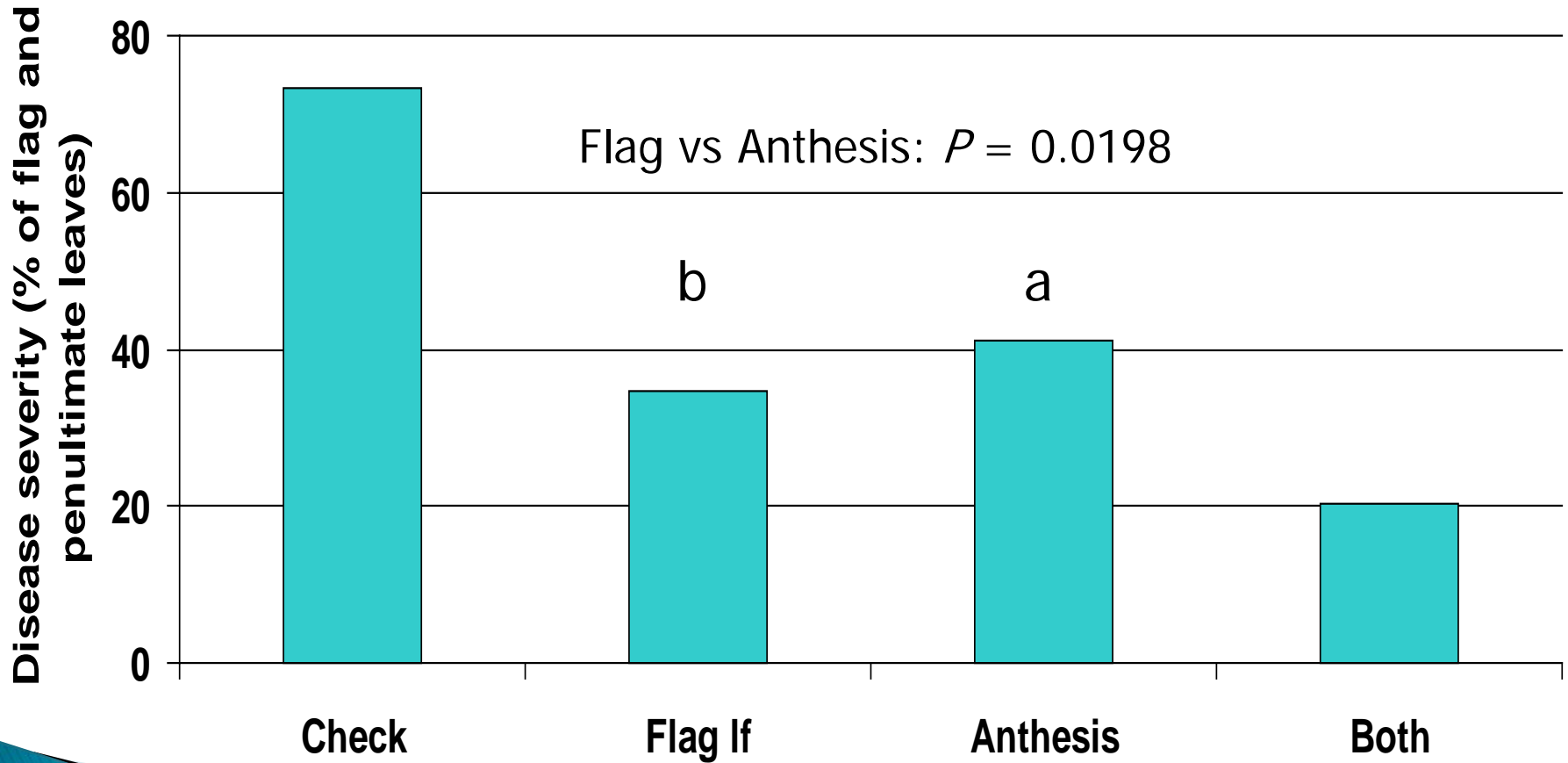
- With increased concern over FHB, what is the impact on leaf spot diseases when delaying spraying until anthesis stage
- Begun a 15 site-year study in 2013: 3 AB and 3 SK locations using cv. Carberry to address this question



FUNGICIDE APPLICATION TIMING – Disease Sev

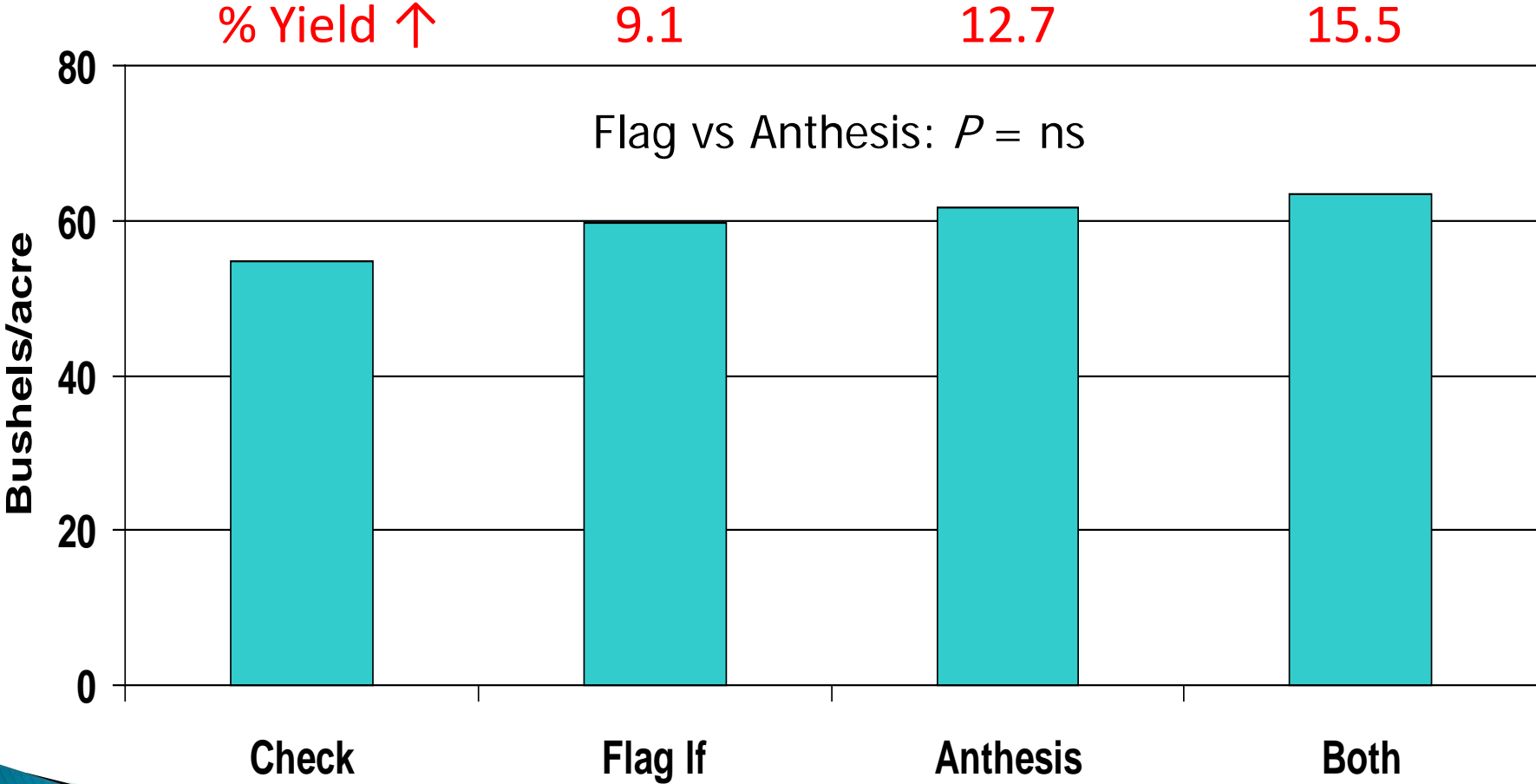
Wheat (cv Carberry), high disease severity, Prosaro and Folicur

3 site-years: Saskatoon, Melfort & Lacombe, 2014



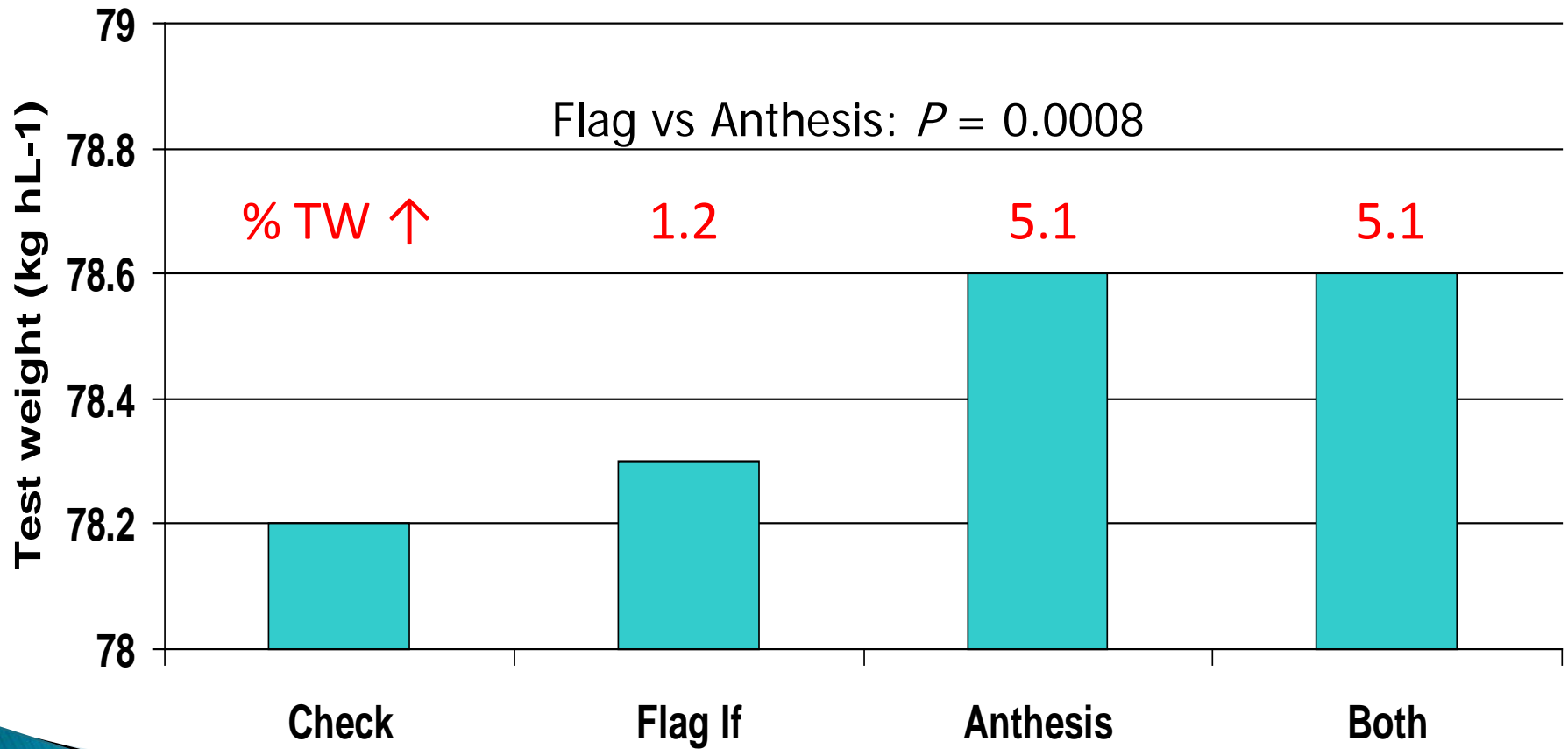
FUNGICIDE APPLICATION TIMING - Yield

Wheat (cv Carberry), high disease severity: Prosaro and Folicur



FUNGICIDE APPLICATION TIMING - TW

Wheat (cv Carberry), high disease severity: Prosaro and Folicur



FUNGICIDE TIMING

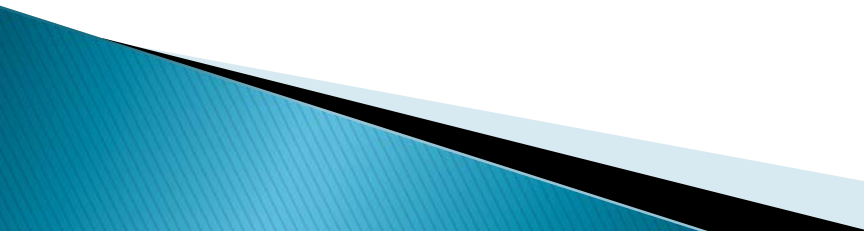
flag leaf vs anthesis stages

- Data indicates an advantage to anthesis timing for leaf spot control, under the conditions of this study
- Apply at anthesis for control of FHB



Tan spot symptoms
Western Committee on Plant Disease

Good (foliar) fungicide practices

- Protect healthy tissue and thus yield
 - limited curative activity, “can’t fix broke”
 - For most diseases, application is required before disease is visible on the tissues requiring protection – systemic but do not move from one leaf to another
 - Effective for up to 2–4 weeks
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**Thank you to SaskWheat and the Ministry
of Agriculture for the invitation today**

