Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Canaryseed Agronomy Research

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Canada

Plant Growth Regulators

PGR Treatments

1.None

2.Trinexapac **(**Modus**),** full rate, first node

3.Chlormequat (Manipulator), full rate, first node

4.Trinexapac + Chlormequat, half rate, first node

5.Trinexapac, full rate, forth node

6.Chlormequat full rate, forth node

7.Trinexapac + Chlormequat , half rate, forth node

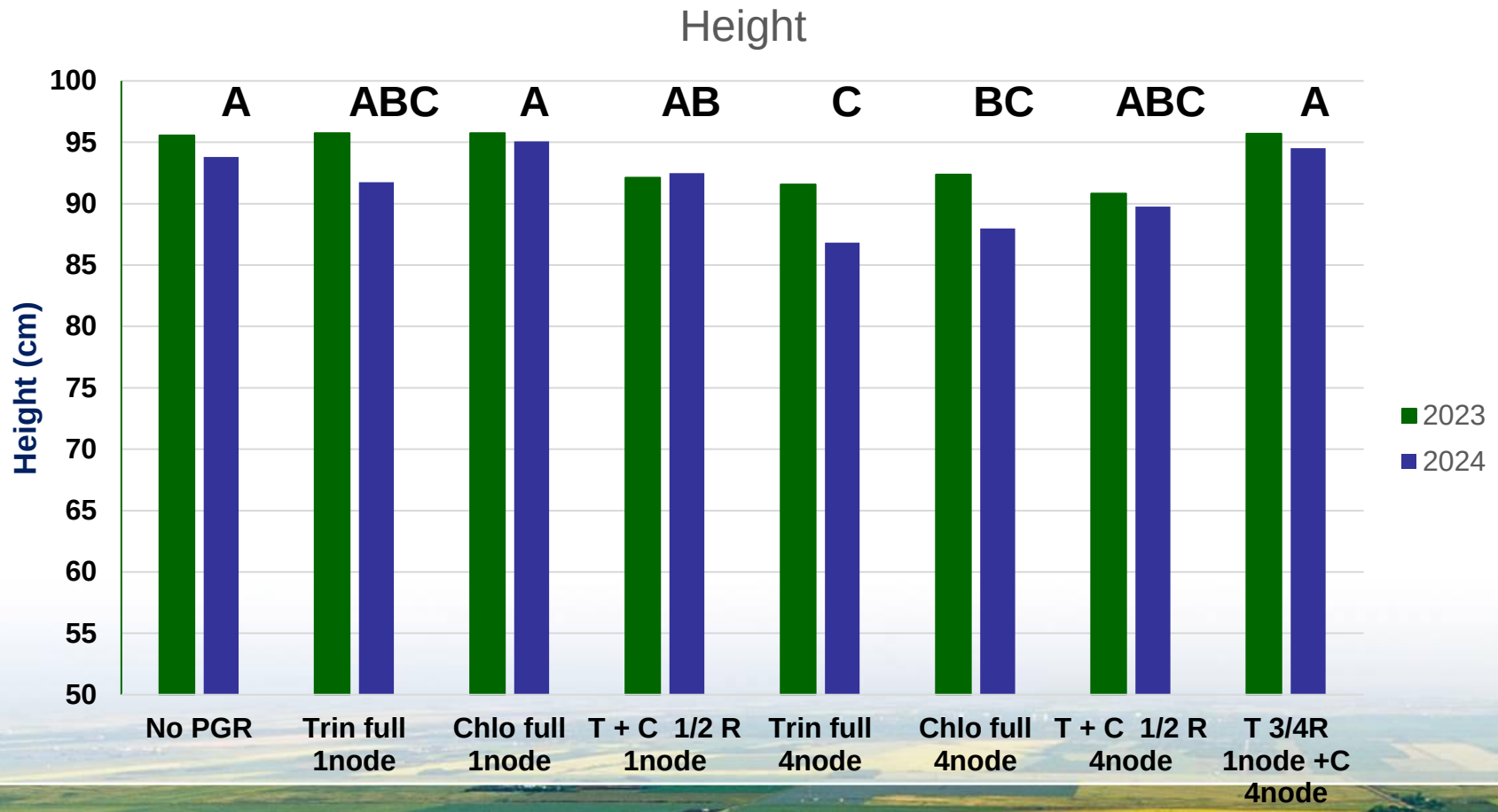
8.Trinexapac 3/4 rate, first node, + Chlormequat 3/4 rate forth node

Plant Growth Regulators

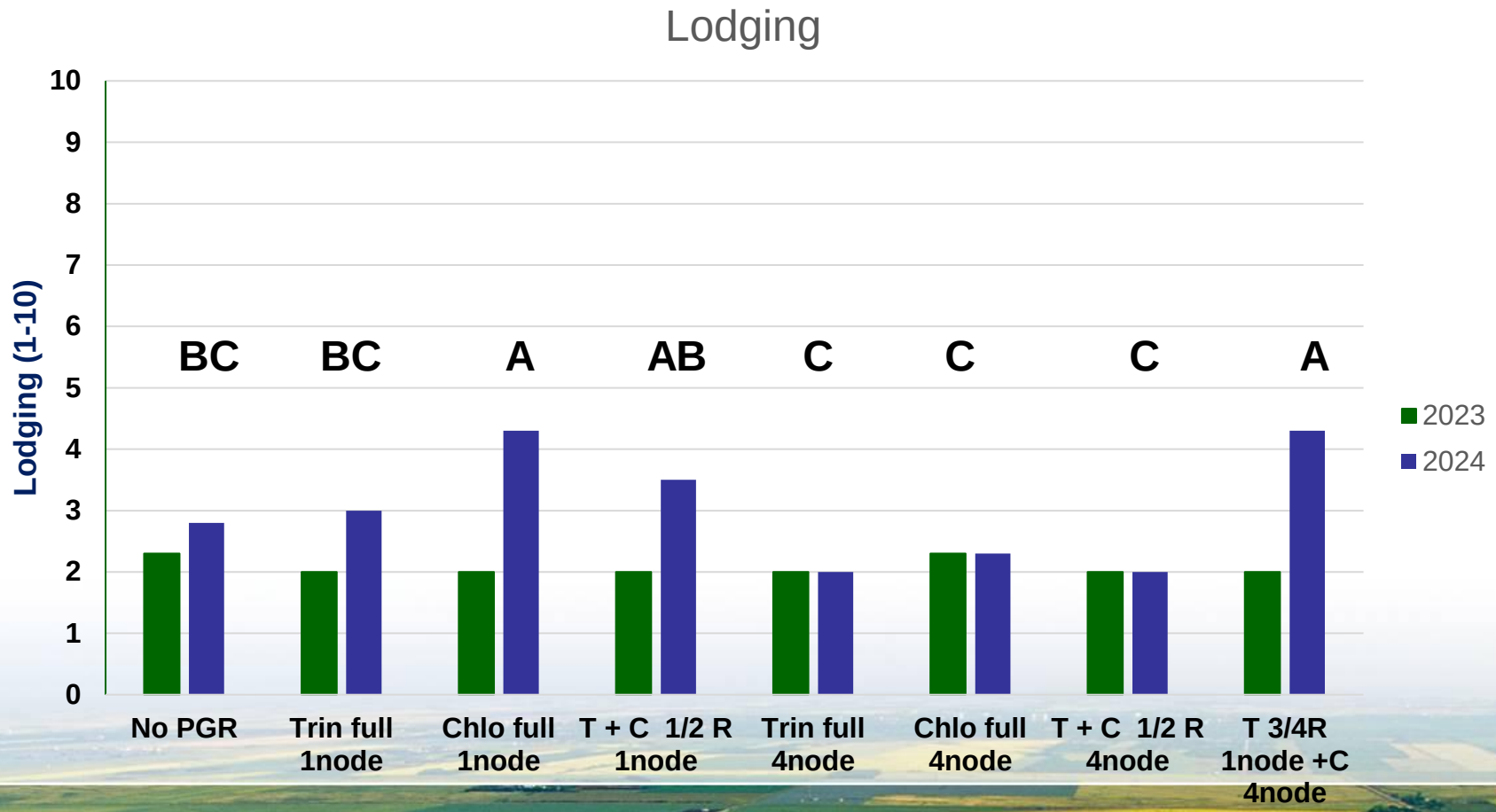
Questions

- Dry year – do no harm
- Wet year – improve harvestability and/or improve yield
- **Higher yields tend to come from later tillering – will PGR affect this?**

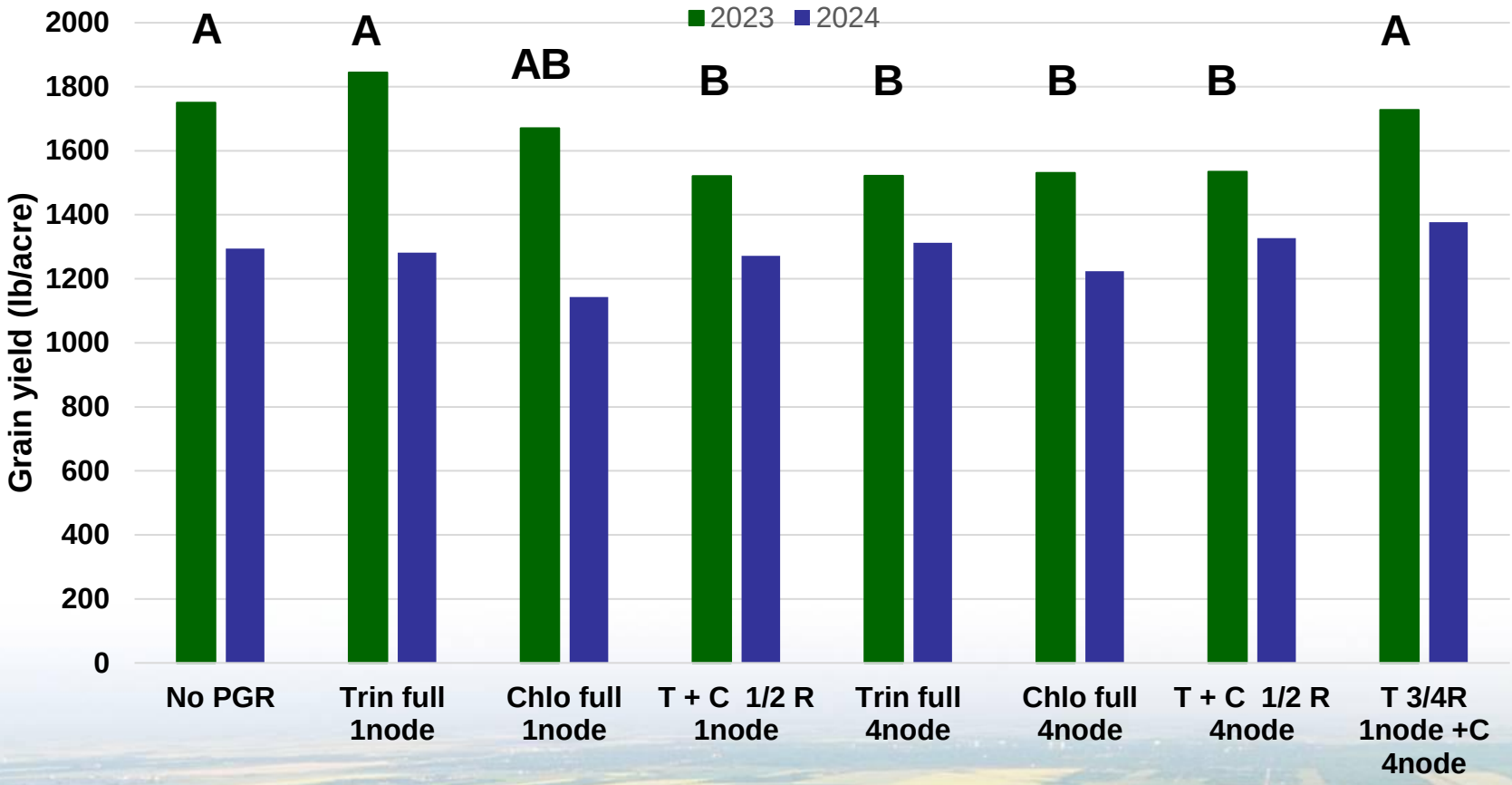
PGR on Canaryseed in 2023 and 2024



PGR on Canaryseed in 2023 and 2024



PGR on Canaryseed in 2023



Plant Growth Regulators

Questions

- No large impacts yet

- Using oat rates do we need to try high wheat rate for modus?

Septoria Leaf Mottle

What has been done in the past?

Septoria Leaf Mottle Research

- **Canaryseed is the cereal with the most consistent response to a fungicide in the black and grey soil zones**
- **In brown soil zone if get enough moisture to support a second and third flush of tillers than there is likely to be a positive response from a fungicide**
- **Application timing is to delay until anthesis**

Septoria Leaf Mottle Current Research

- Best fungicides not register for use
- Worked with Ron Pidskalny to put together a fungicide list for testing and registration
- Small plot trial
- Field scale trial near Indian Head

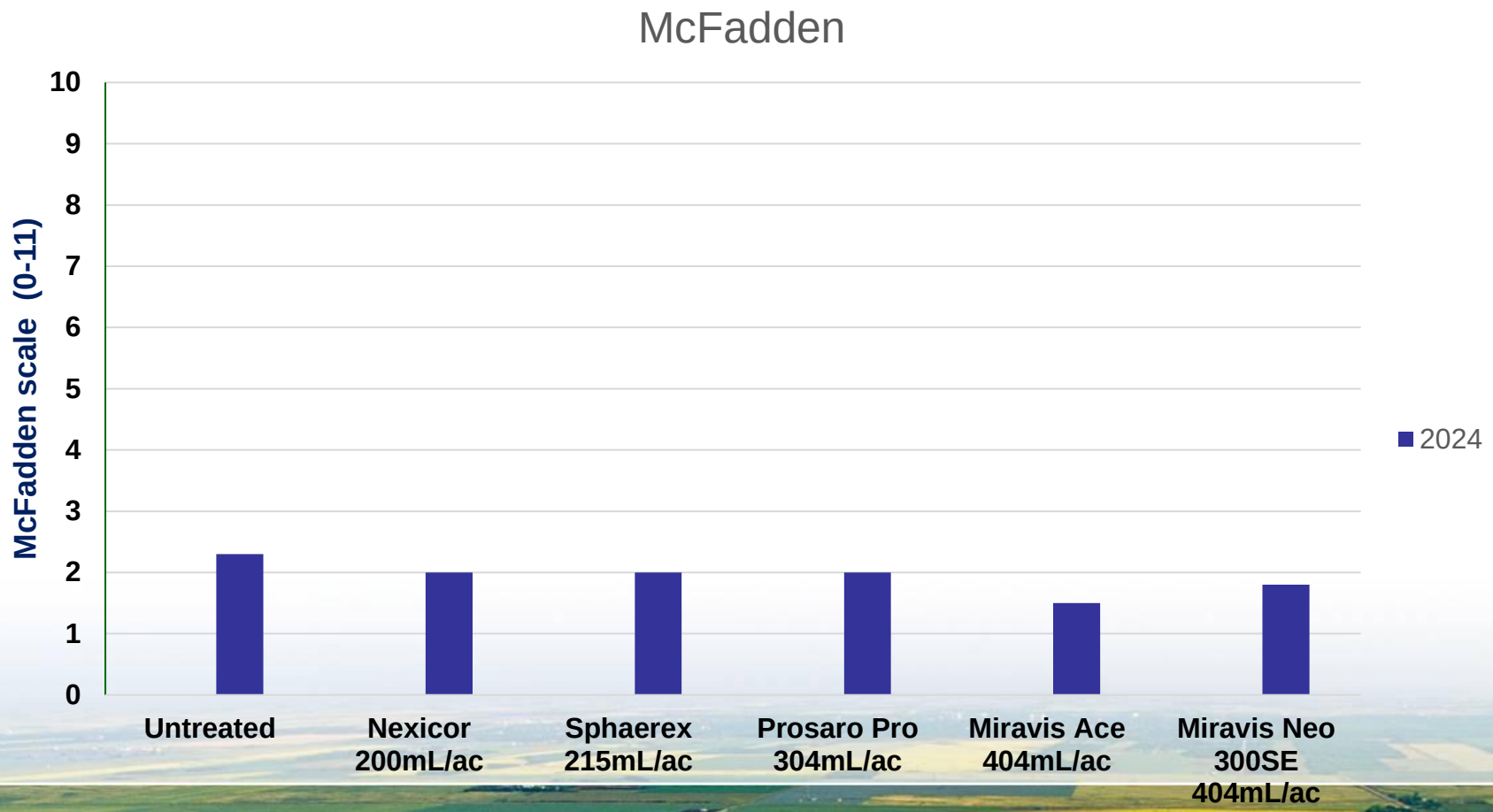
Septoria control with fungicides

Field scale

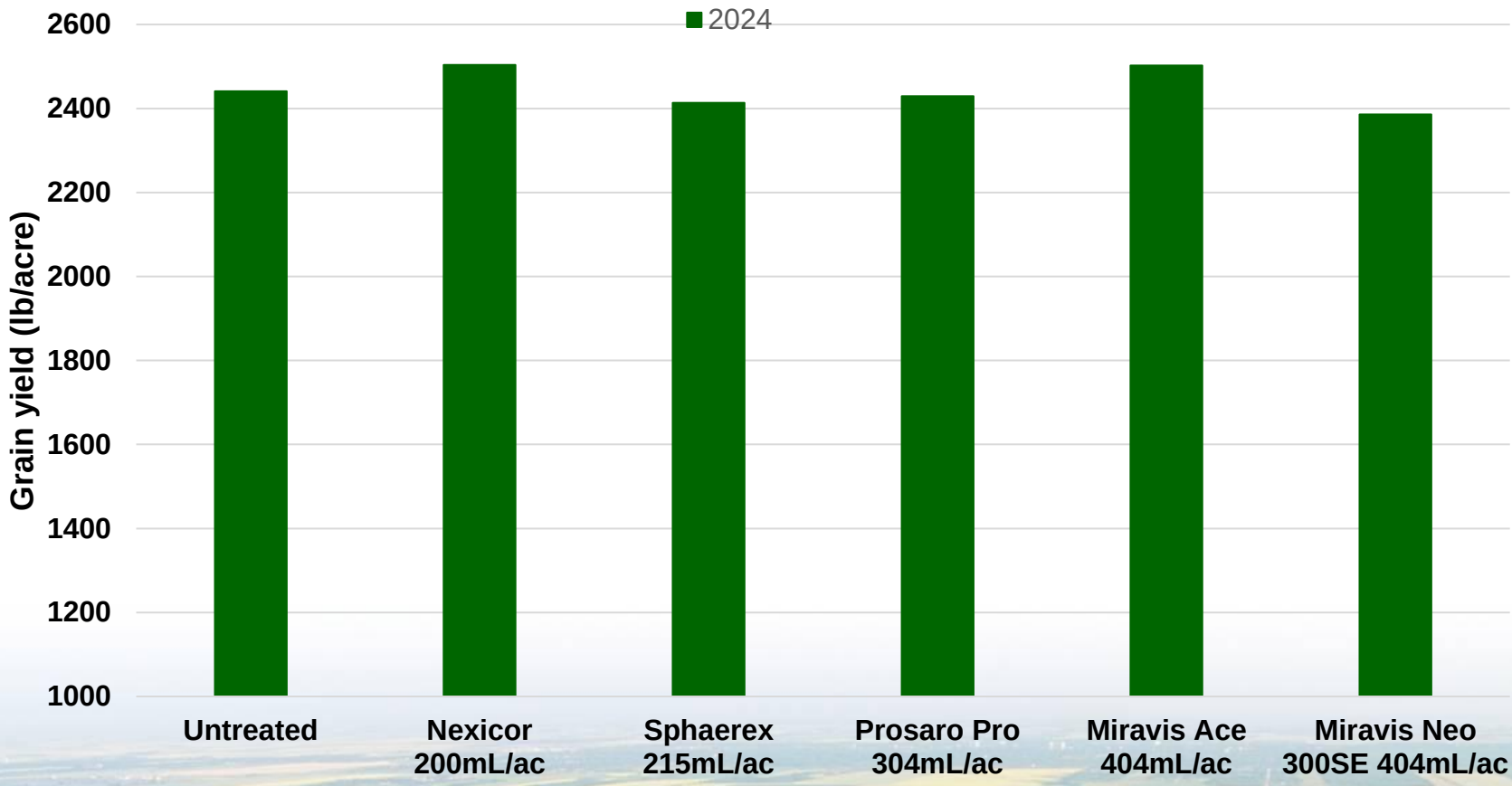
Fungicide:

1) control
2) Nexicor applied at 200ml/acre in 20 US gal/acre solution
3) Sphaerex applied at 215ml/acre in 20 US gal/acre of solution
4) Prosaro Pro applied at 304ml/acre in 20 US gal/acre of solution
5) Miravis Ace applied at 404ml/acre in 20 US gal/acre of solution
6) Miravis Neo 300SE applied at 404ml/acre in 20 US gal of solution (flag leaf)

Septoria on Canaryseed in 2024



Septoria on Canaryseed in 2024



Septoria Leaf Mottle Future Research

- Small plot trial (6 rep)
- Field scale trial near Indian Head
- Sort through new fungicide combinations

- Apply for funding for multilocation fungicide trail -how much precipitation is needed before we recommend a fungicide application

New info publishing

- Micronutrients
- Crop sequencing

Micronutrients

- Foliar application after flag leaf emergence of Cu, Zn or Mn the best method to increase the concentration of that micronutrient in the leaf tissue during seed filling.
- Boron concentrations in the leaf were increased during seed filling by soil or foliar treatments containing B at different site-years.
- Zinc, Cu, and B application had no impact on grain yield.
- **Manganese - A foliar application of Mn affected grain yield at one of 6 site-years and requires further investigation**.
- Cl is the most important Micronutrient

May, W.E., Begum, A., Moreside, S.J. and Sikat, G.J.F. 2024. The effect of applied micronutrients (Cu, Zn, Mn and B) and chloride on annual canarygrass. Can. J. Plant Sci. https://cdnsciencepub.com/doi/full/10.1139/cjps-2023-0132.

The effect of previous crop on the grain yield within each crop at each location in each year.

Stubble	Wheat		Oat		Canola		Pea		Canaryseed		Hemp		Coriander	
Grain Yield	kg ha^{-1}													
Wheat	3,148.8	ab	4,570.5	a	1,664.2	ab	2,659.2	a	872.4	a	747.6	a	989.9	a
Oat	3,197.1	ab	4,124.3	b	1,642.8	ab	2,559.6	a	824.3	a	649.2	a	958.1	ab
Canola	3,051.0	b	4,545.3	a	1,421.6	bc	2,492.9	a	835.3	a	669.4	a	644.0	cd
Pea	3,399.9	a	4,642.5	a	1,820.9	a	2,161.0	b	912.1	a	822.0	a	827.4	abc
Canaryseed	2,998.1	b	4,122.6	b	1,481.7	bc	2,505.1	a	723.7	a	749.3	a	894.9	abc
Hemp	3,110.4	b	4,415.6	a	1,424.1	bc	2,215.2	b	878.6	a	717.1	a	712.3	bcd
Quinoa	3,082.0	b	4,576.3	a	1,577.0	ab	2,509.0	a	891.1	a	702.3	a	624.9	cd
Coriander	3,004.1	b	4,414.6	a	1,314.2	c	2,396.3	ab	859.6	a	572.3	a	555.0	d

Next up

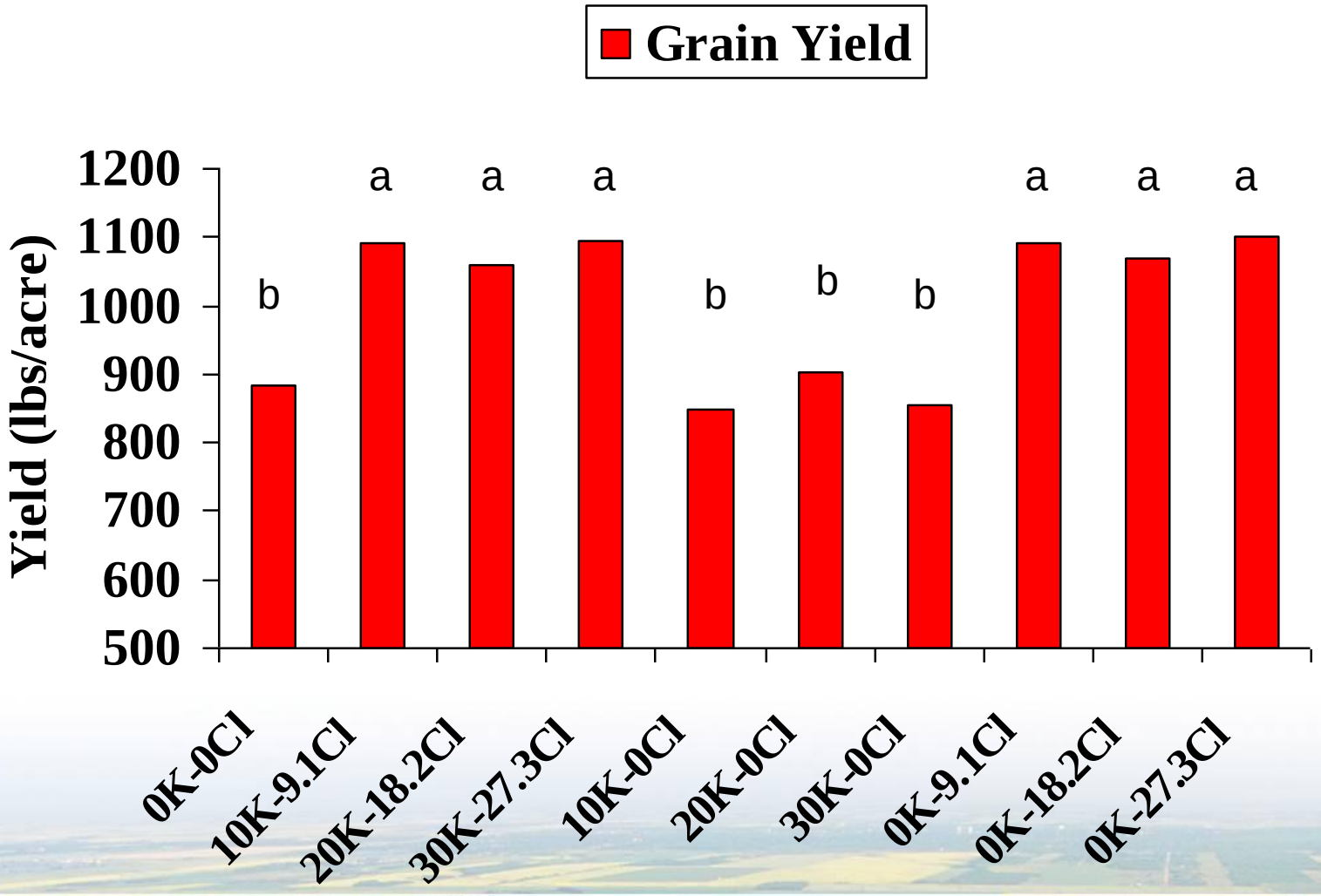
Effect of slope on Cl in canaryseed

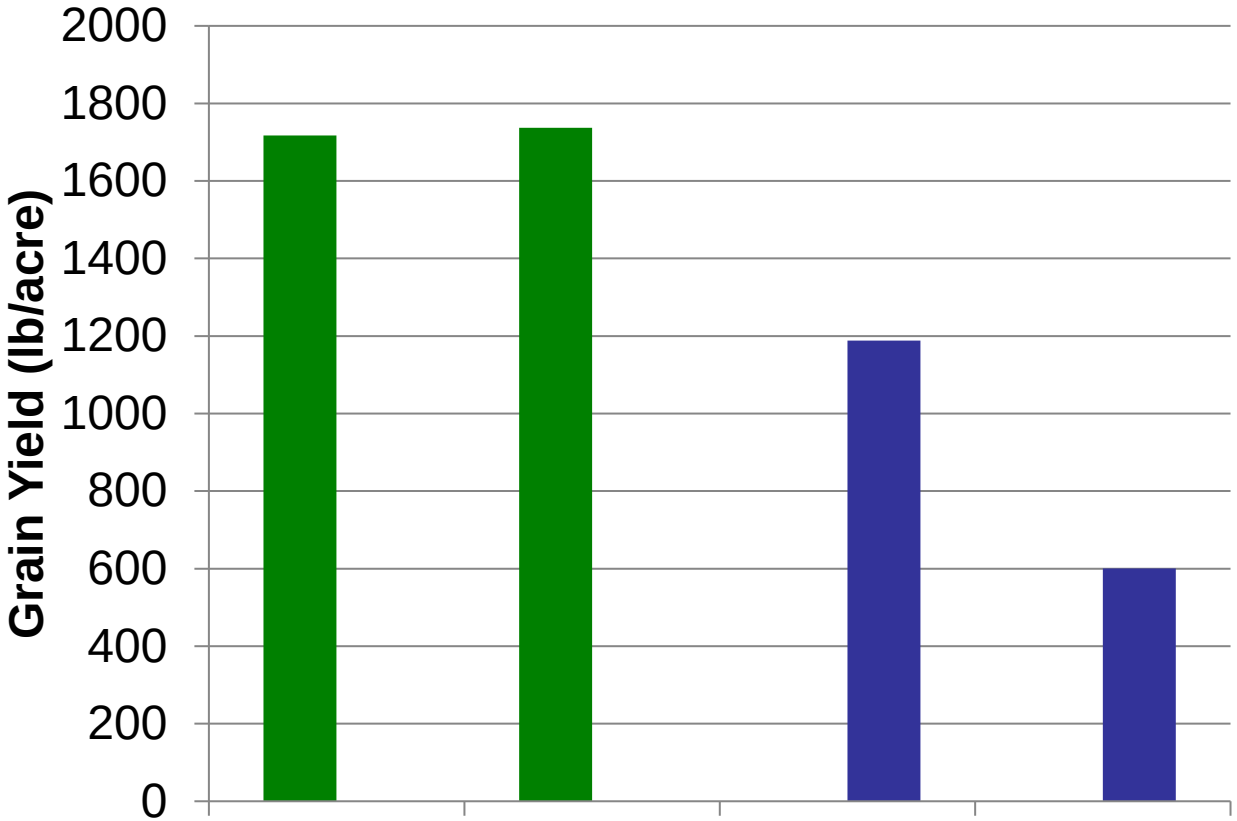
I would like to thank the

Canary Seed Development Commission of Saskatchewan

For their ongoing support

Chloride and Grain yield Yield





N	**60**	**60**	**60**	**60**
P	**30**	**30**	**30**	**30**
CL	**18**	**0**	**18**	**0**
S	**15**	**15**	**15**	**15**

Effect of slope and Cl on canaryseed

Slope –top, upper slope, middle, lower slope and bottom

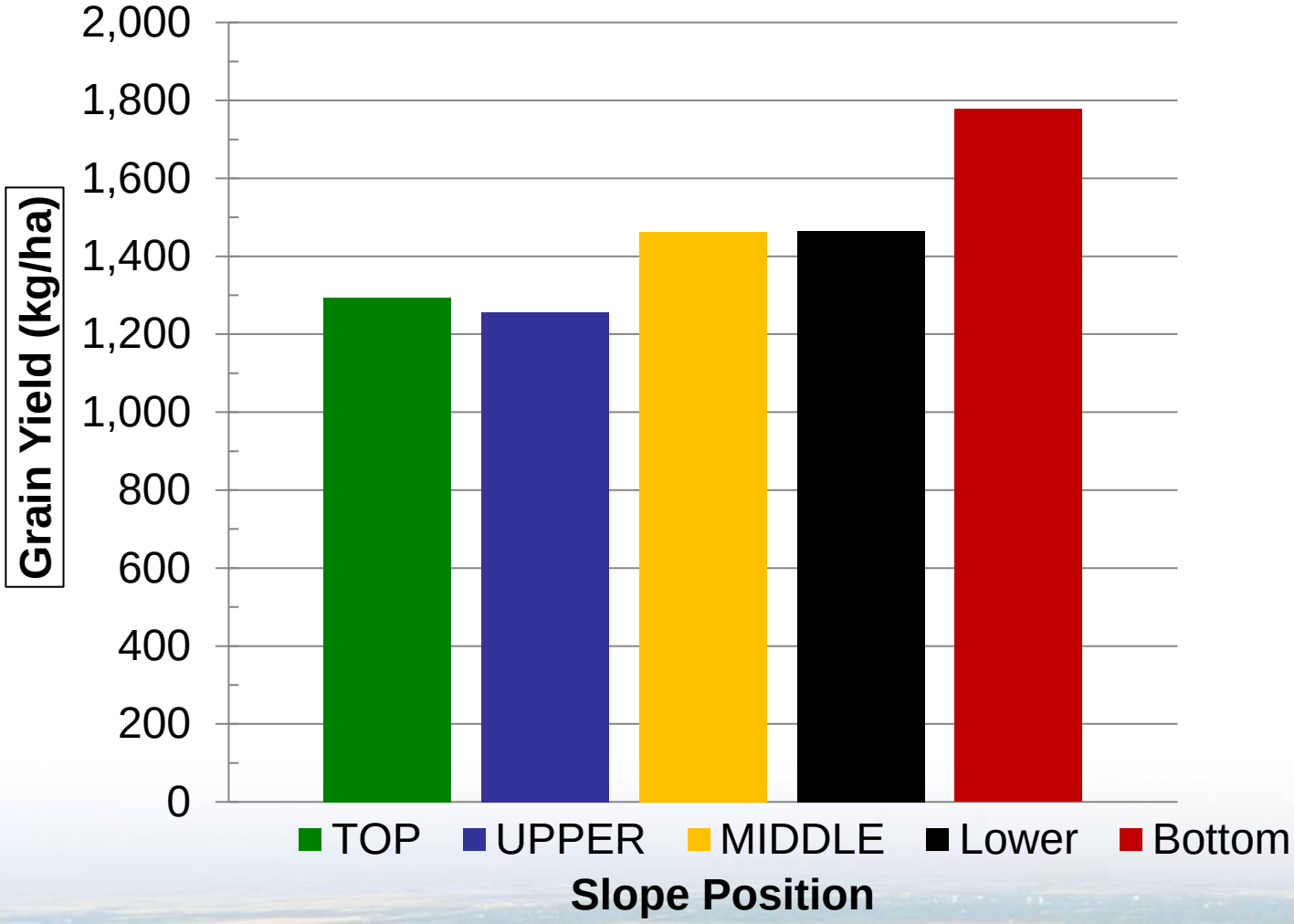
Cl rate - 0, 9, 18 and 27 kg Cl/ha

Funding

- **Canary Seed Development Commission of Saskatchewan**

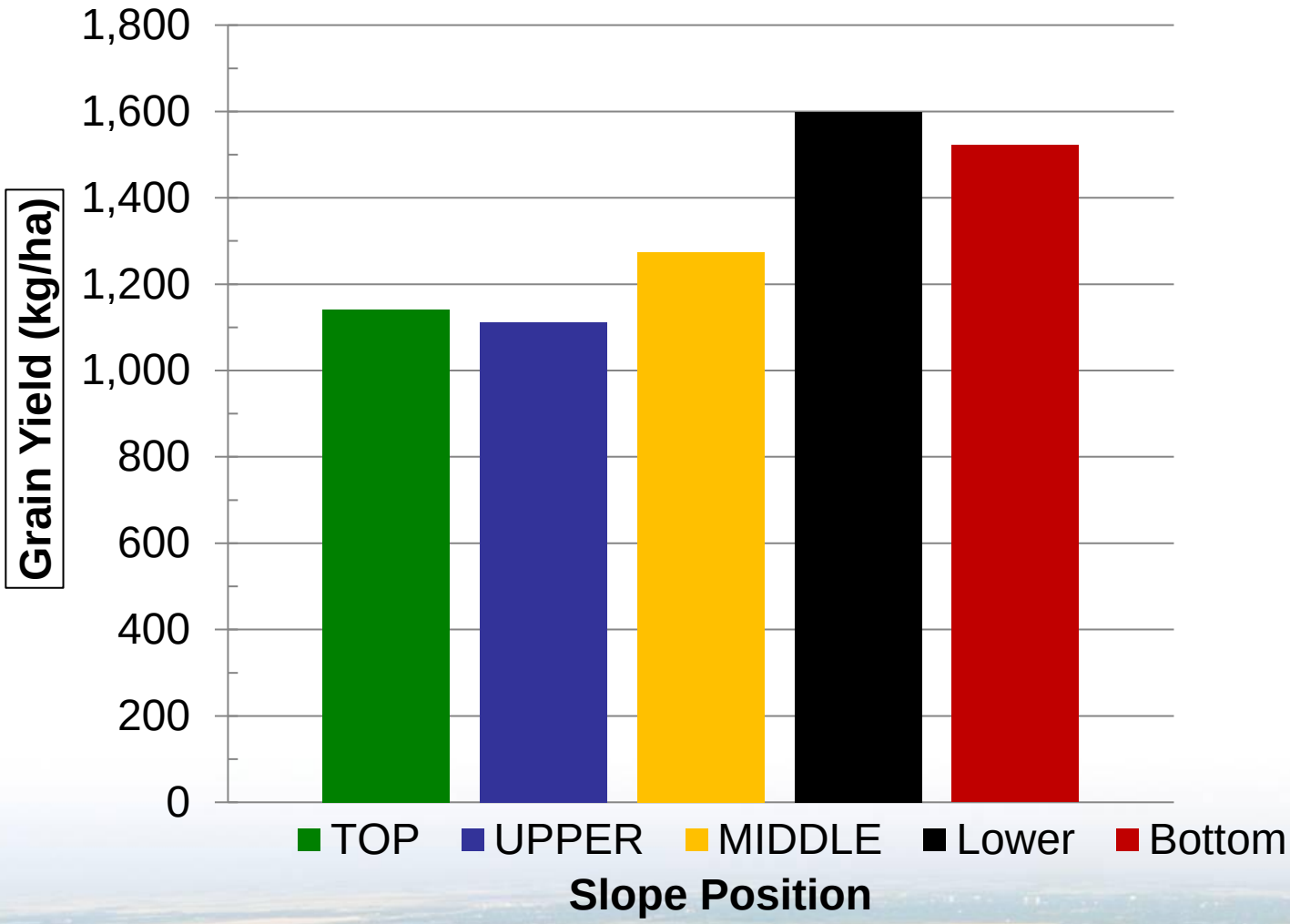
Canaryseed Grain Yield 2020

Chloride x Slope Canaryseed Yield 2021

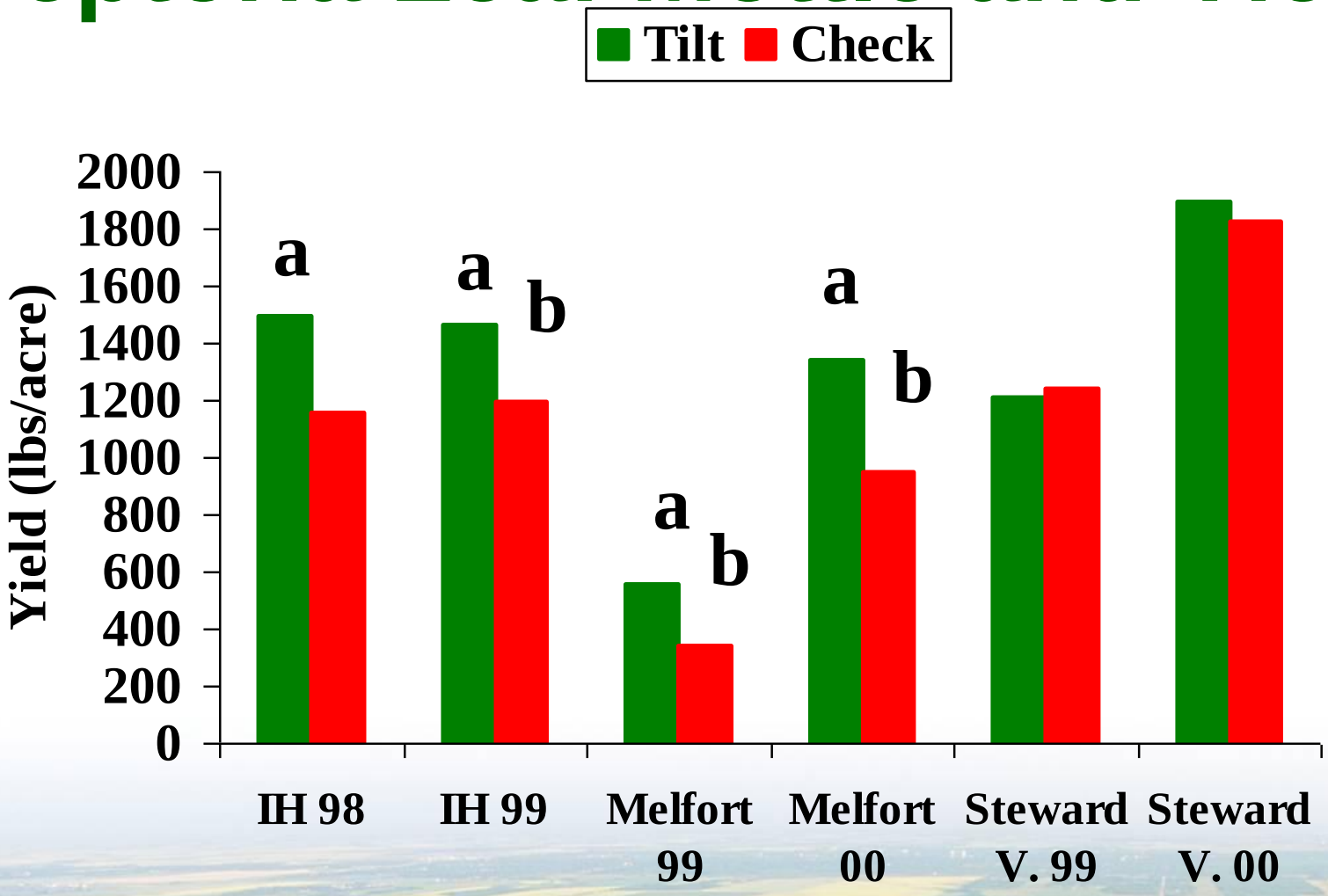


Canaryseed Grain Yield 2022

Chloride x Slope Canaryseed Yield 2023



Septoria Leaf Mottle and Yield



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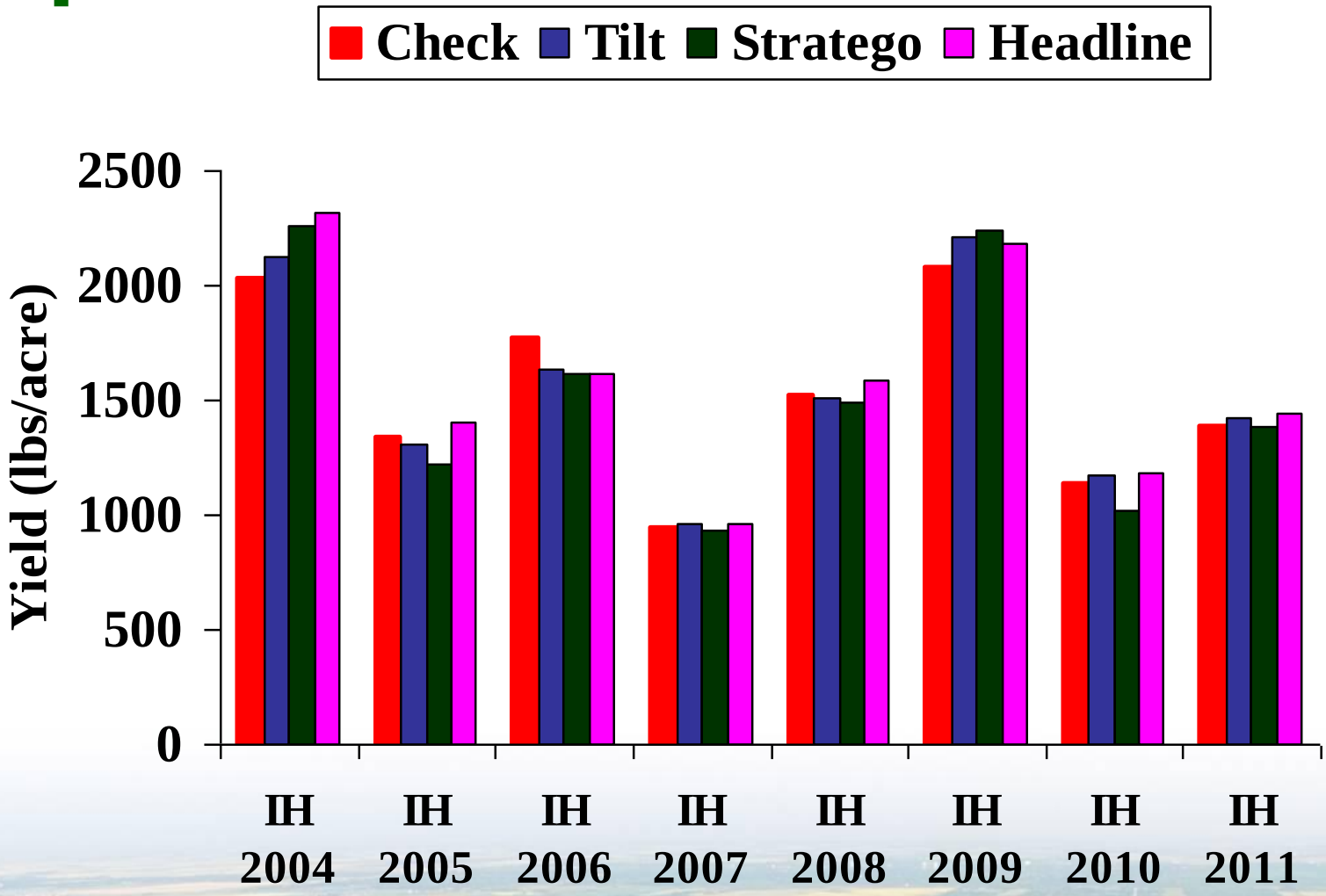
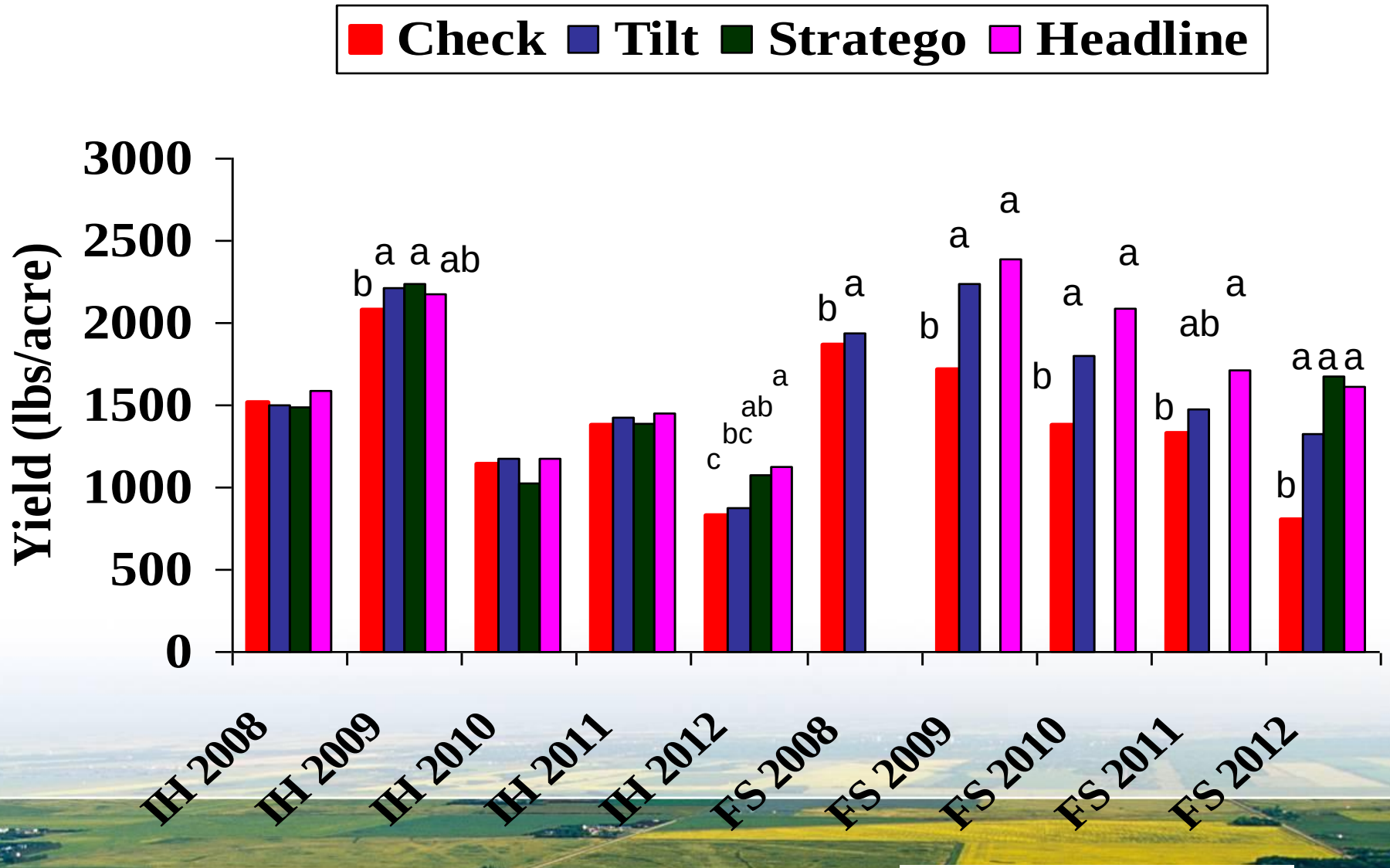


Septoria Leaf Mottle and Yield



FS – Field Scale Plots

Septoria Leaf Mottle

Plot Size (ft)

- 13 x 35
- 26 x 35
- 39 x 35
- 13 x 70
- 26 x 70
- 39 x 70

Test is conducted in Two fields one with no canaryseed and the other with the rest of the field seeded to canaryseed

Fungicide Treatments

- Check
- Tilt
- Twinline
- Prosaro
- Prosaro late

Septoria Leaf Mottle and Yield