Wheatland Conservation Area Inc

Agri-ARM Research Update 2018

"Profitability of Various Wheat Classes"

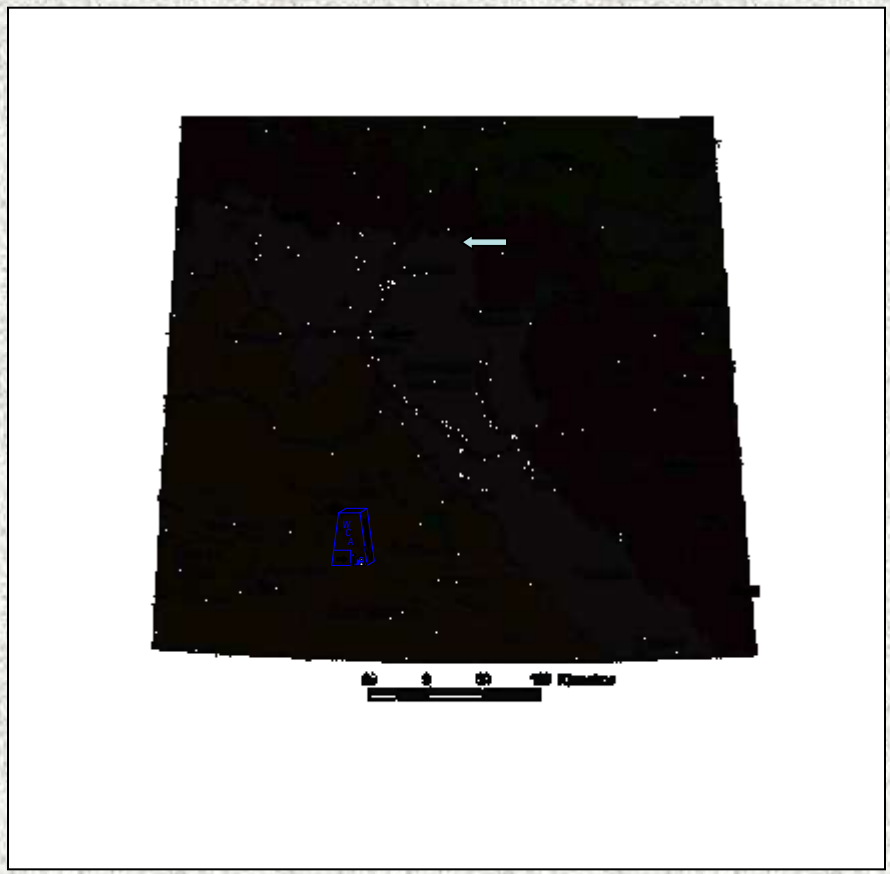
Presentation Outline

- Wheatland Conservation Area / Agri-ARM background
- Look at various wheat classes and their end uses.
- Demonstrate two levels of inputs to optimize traits or characteristics of that particular wheat class.
- Overview of our study done in Swift Current.
- Economic analysis.
- Wrap up and acknowledgements

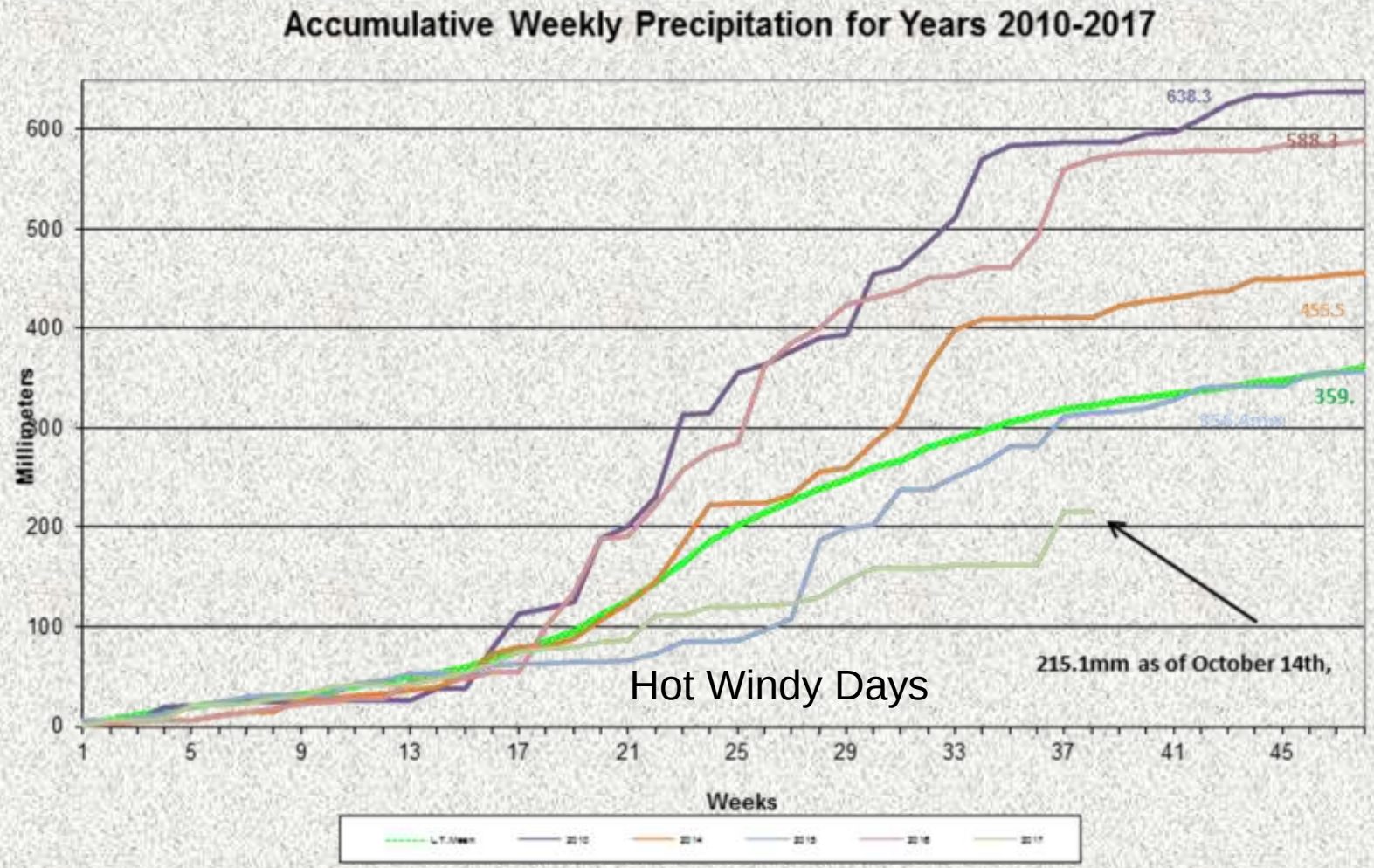
Wheatland Brief History

- Non-profit / producer run since 1982.
- We operate under the Agri-ARM umbrella of Applied Research sites (8 sites)
- Trials from the Dry Brown Soil Zone of Southwest Saskatchewan

  -presenting results from Swift Current 2017



2017 Accumulative Precipitation



Response of Lower Wheat Classes to Various Inputs for Improved Economic Returns

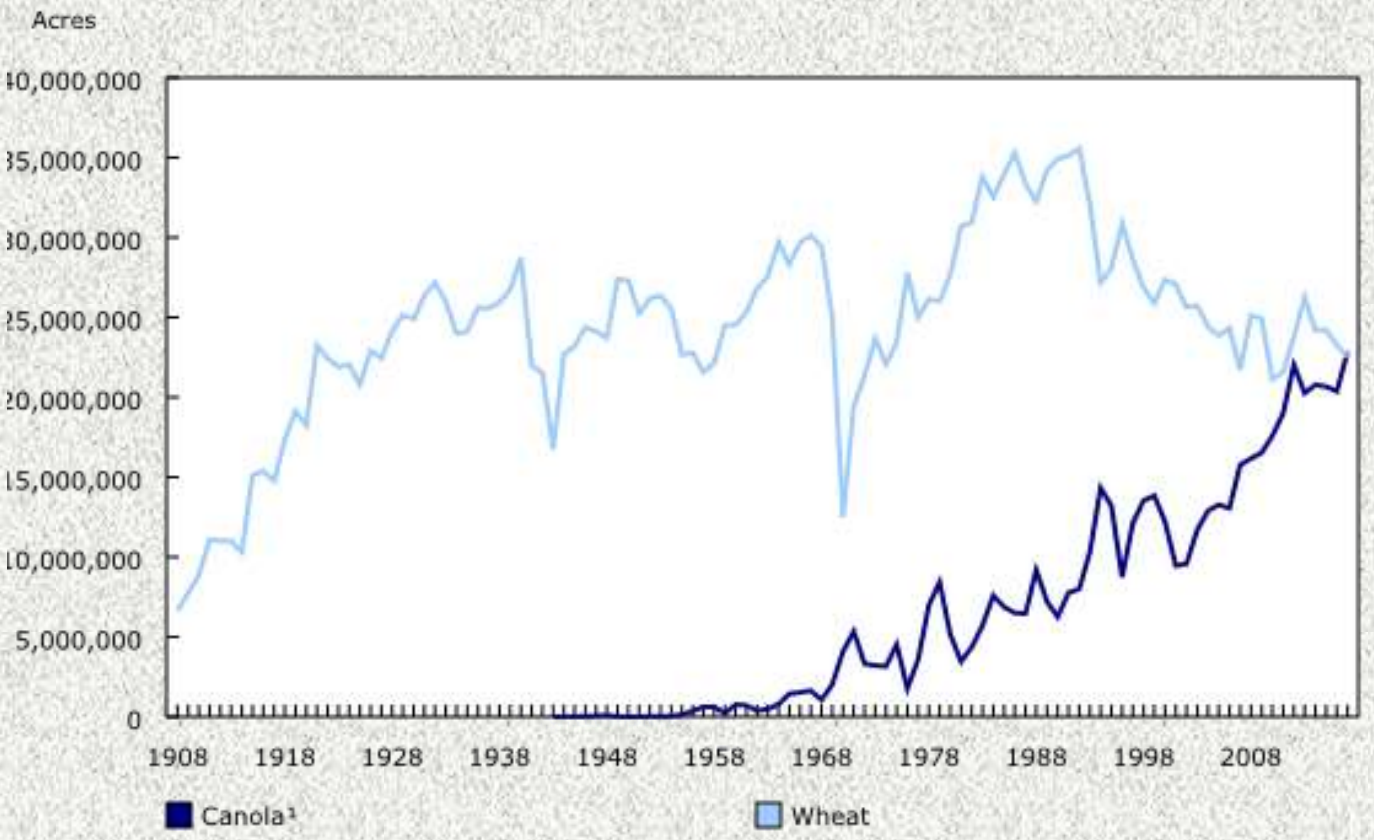
The objective of this project is to demonstrate to producers how the lower wheat classes like CPS, CWGP and CWSW respond to various levels of inputs to improve economic returns and compete with high quality wheat classes like CWAD, a wheat class that is quickly loosing its appeal due to its susceptibility to fusarium.

Why are Wheat Acres Declining?

Saskatchewan farmers reported the area seeded to all varieties of wheat decreased for a fourth consecutive year, falling 6.9% from 2016 to 11.3 million acres in 2017. The overall decline was the result of a decrease in durum wheat acres, which fell 18.0% to 4.1 million acres.

Statistics Canada

Wheat and Canola – The race for first place.



Why are Wheat Acres Declining?

- This suggests that some of the declining cereal acres are being replaced by canola acres because producers are realizing better economic returns from canola.
- This does not become an issue until canola rotation become tight and open the door to disease and pests.
- Diverse rotations are key management tools to prevent weed resistance and break disease and pest cycles.
- Cereals are still an important part of a rotation, and even if a small percentage of cereals removed, that puts additional pressure on other phases of the rotation.
- Growing wheat must be financially beneficial.

Risk Management

- Targeting high quality and high protein CWAD and CWRS requires a significant investment in crop inputs and, in some years, can produce significant returns when marketing a premium product in high demand.
- This however involves a fair amount of risk with input dollars invested with no guaranteed return. If the crop is hit with disease or inclement weather at harvest (2016), producers are forced to sell into moderate quality or feed markets.
- In this scenario the producer has made a large investment, and lost both the quality available in the premium wheat class and the yield potential offered by other wheat classes.

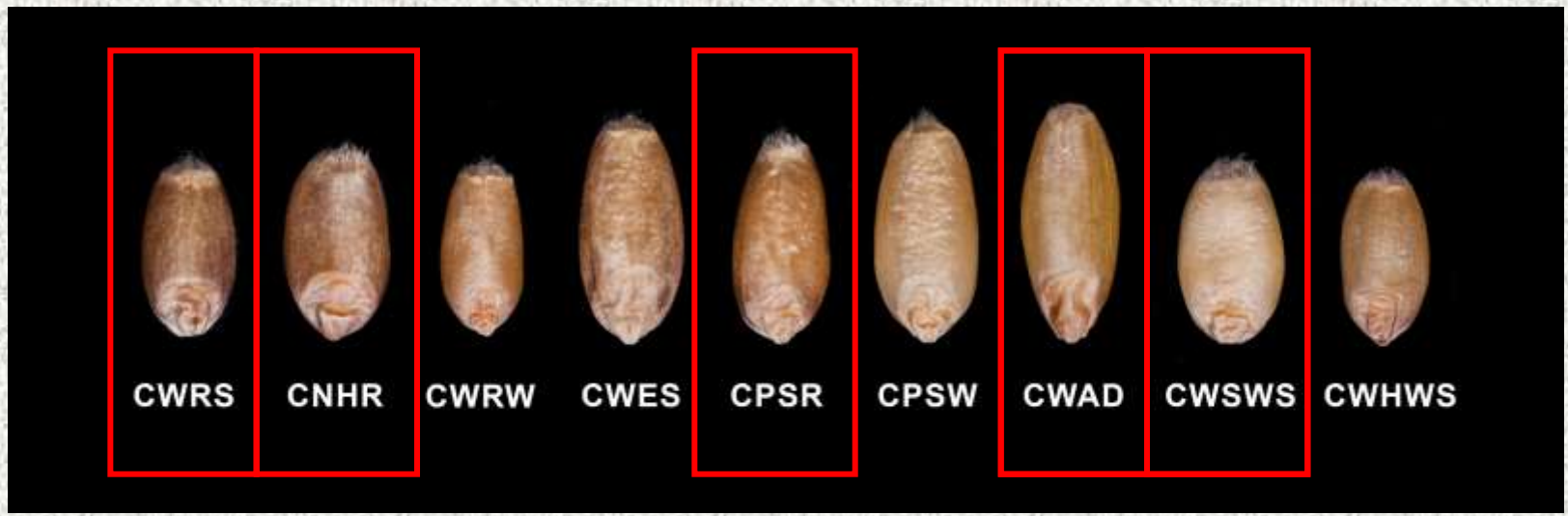
Cropping Alternatives

- Can profit be made by targeting higher yielding wheat, with less emphasis on quality?
- According to an article in the Western Producer from 2015, hard red spring wheat could deliver about $43 to $45 per acre and Durum wheat around $75 per acre of net return. It also shows that lower quality cereals can potentially return a net of $126 per acre.
- Can we reduce risk by moving some cereal acres to a different wheat class like CPSR, CWGP, or CWSWS.

Cereals are Still an Important Part of the Rotation

In 2017, we set up an ADOPT trial in Swift Current to demonstrate a number of wheat classes in the field under a high input management program verses a low input management program to determine both yield potential and economic returns of each wheat class.

Wheat Classes for Western Canada



The Canadian Grain Commission designates Canadian wheat varieties into classes and each class is unique. The varieties within each class are grouped by their functional characteristics. For example, varieties in the Canada Prairie Spring Red class have medium hard kernels and medium dough strength. Canadian wheat classes are categorized by Canada Western and Canada Eastern, the regions in which the varieties are grown.

Wheat Varieties, Classes and Their End Use 2017

1) AC Carberry (CWRS)
2) Shaw VB (CWRS)
3) AC Cabri (CWAD)
4) Conquer VB (CPSR)
5) SY Rowyn (CPSR)
6) AC Andrew (CWSWS)
7) ELGIN ND (CNHR)
8) Pasteur (CWGP)

Wheat Varieties, Classes and End Use 2017

1) **AC Carberry (CWRS)**
2) **Shaw VB (CWRS)**
3) AC Cabri (CWAD)
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- high volume pan-breads
- hearth breads and flatbreads
- good mixing and fermentation tolerance
- bright crumb colour and high loaf volume
- wide-range of noodle and other Asian product apps.

Wheat Varieties, Classes and End Use 2017

1) AC Carberry (CWRS)
2) Shaw VB (CWRS)
3) **AC Cabri (CWAD)** →
4) Conquer VB (CPSR)
5) SY Rowyn (CPSR)
6) AC Andrew (CWSWS)
7) ELGIN ND (CNHR)
8) Pasteur (CWGP)

- Superior semolina yield
- Highest quality dried and fresh pasta products and couscous
  - Bright yellow colour
  - Firm pasta strong and extensible gluten
- Well-suited for hearth-style, artisan and flat breads

Wheat Varieties, Classes and End Use 2017

1) AC Carberry (CWRS)
2) Shaw VB (CWRS)
3) AC Cabri (CWAD)
4) **Conquer VB (CPSR)** →
5) **SY Rowan (CPSR)**
6) AC Andrew (CWSWS)
7) ELGIN ND (CNHR)
8) Pasteur (CWGP)

– Strong physical dough properties comparable to CWRS
  - Production of pan-breads, hearth-breads, flat breads and crackers
  - High quality white-salted and instant noodles with exceptional elastic texture

Wheat Varieties, Classes and End Use 2017

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8) Pasteur (CWGP)

- Ideal for confectionary goods (cookies, cakes, biscuits, pastry) and applications that require low protein content
- Highly sought after by industrial ethanol industry
- Used in wheat blends for Asian products including noodles and steamed bread

Wheat Varieties, Classes and End Use 2017

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6) AC Andrew (CWSWS)
7) **ELGIN ND (CNHR)**
8) Pasteur (CWGP)

- Medium gluten strength (lower than both CWRS and CPSR)
  - Suitable for production of pan breads, hearth breads and noodles
- More end-product applications available after more quality analysis in the future

Wheat Varieties, Classes and End Use 2017

1) AC Carberry (CWRS)
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6) AC Andrew (CWSWS)
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8) **Pasteur (CWGP)**

- Not required to meet the strict quality requirements of milling classes and generally are not appropriate for milling.
- Typically high-yielding. Due to the combination of high starch and low protein, they are most suitable for uses such as ethanol product or animal feed.

Project Objective Review

We studied a wide range of wheat classes with unique characteristics that are sought after by very different markets.

These range from wheat possessing traits with high quality and low yield potential to varieties with low quality traits and high yield potential.

Our objective is to demonstrate how each wheat classes responds to a high input management program verses a low input management program to determine the economic returns of each wheat class.

Two Input Management Programs and Input Costs

High Inputs- 300 seeds/m^2

Seed Treatment (Cruiser Maxx Vibrance)

Enhanced Fertility (110 kg/ha N and 35 kg/ha P2O5)

Fungicide @ early flower (Caramba)

Cost per acre = **$129.77 - $154.02***

Low Input- 200 seeds/m2

No seed treatment

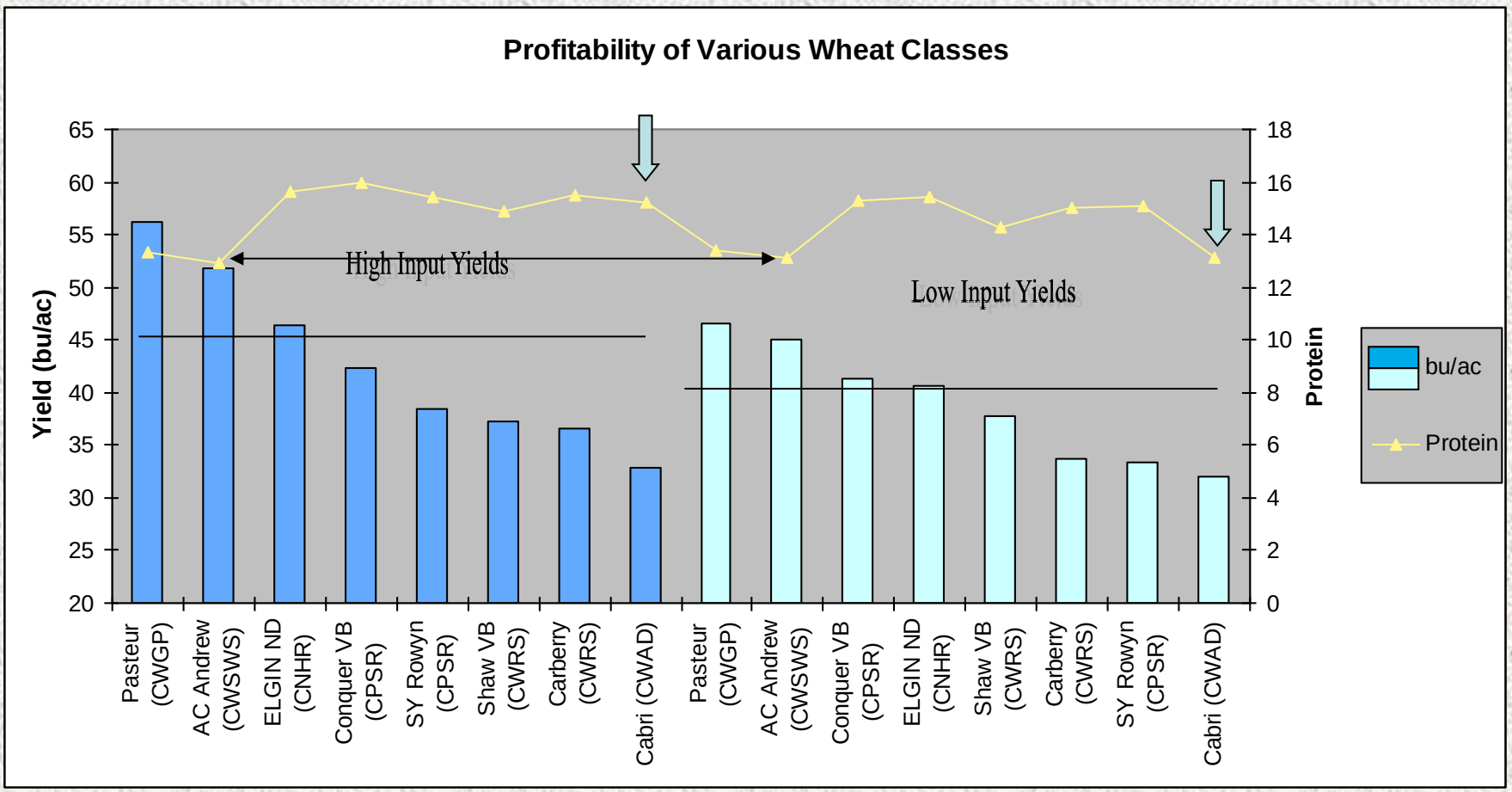
Base fertility (70 kg/ha N and 25 kg/ha P2O5)

No Fungicide application

Cost per acre = **$78.77 - $92.54***

*Costs per acre range due to different seed costs and seed rates.

Results (Profitability of Various Wheat Classes 2015)



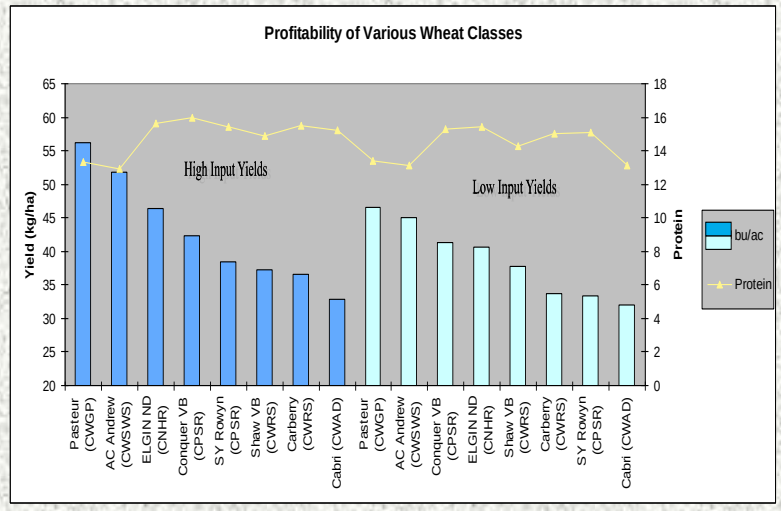
Results (Profitability of Various Wheat Classes 2015)

High Inputs resulted in higher yields

High Inputs resulted in much greater protein in CWAD and a slight increase in the CWRS. Since there are no more price premiums above 12.5% for durum and 13.5%for wheat, did the increase in yield pay for the extra inputs invested?

High Inputs did not result in higher protein in CWGP or CWSWS. Since this is not the objective form these classes of wheat or the markets they are sold into, did the increase in yield pay for the extra inputs invested?

Finally, how do the lower wheat classes compare economically to the high wheat classes?



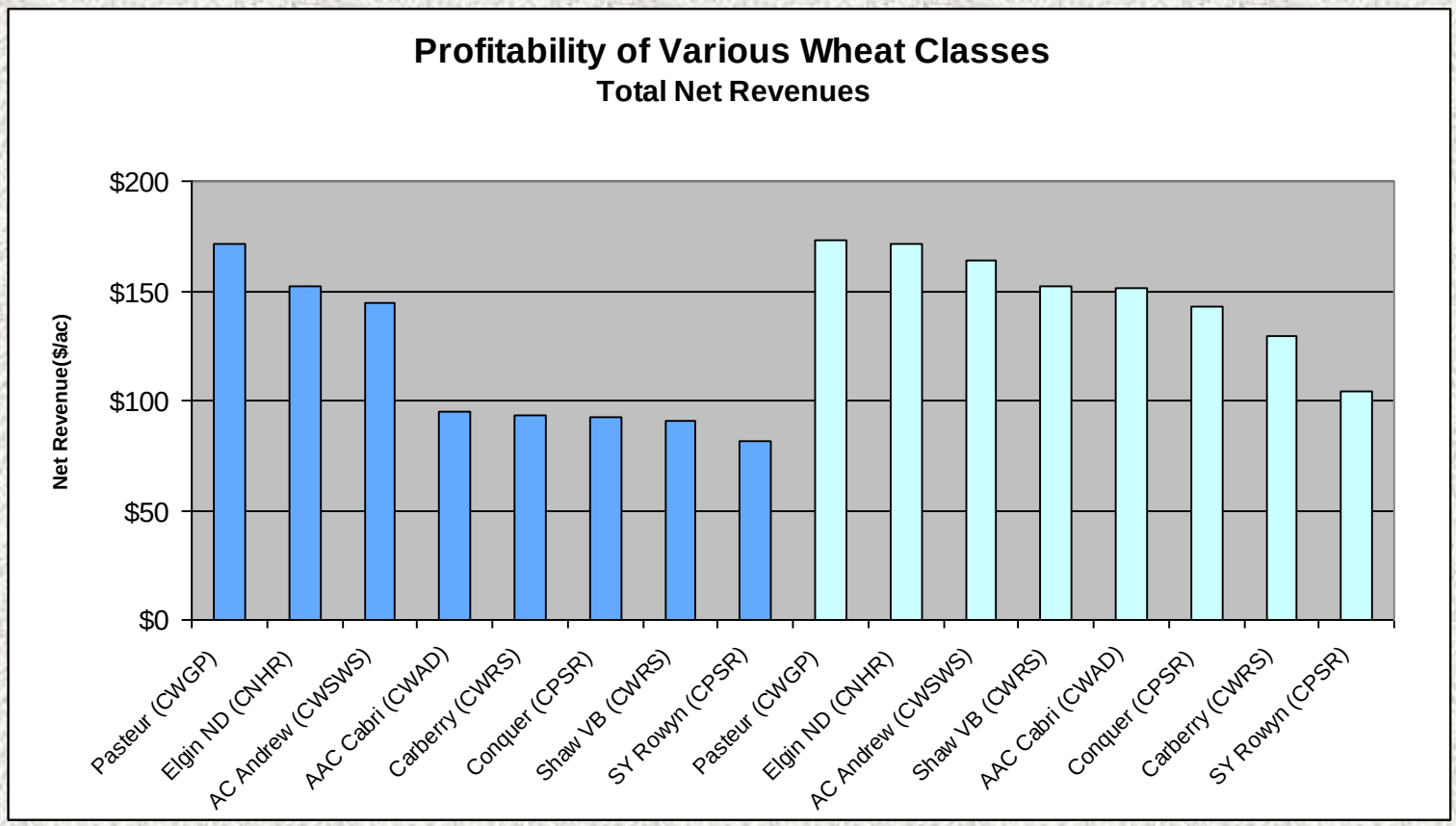
Basic Economic Analysis

Costs and Pricing Used

	Sell Price	Seed (low)	Seed (high)	Total (low)	Total (high)
Pasteur (CWGP)	$5.50	$15.60	$23.40	$82.76	$138.22
AC Andrew (CWSWS)	$5.50	$16.66	$24.98	$83.82	$140.46
Elgin ND (CNHR)	$6.31	$17.56	$26.34	$84.73	$140.80
Shaw VB (CWRS)	$6.31	$19.12	$28.68	$86.29	$143.96
Conquer (CPSR)	$5.50	$16.77	$25.16	$83.94	$140.71
Carberry (CWRS)	$6.31	$16.37	$24.55	$83.54	$138.39
AAC Cabri (CWAD)	$7.60	$25.37	$38.06	$92.54	$154.02
SY Rowyn (CPSR)	$5.50	$11.60	$17.40	$78.77	$129.77

Pre-Seed Herbicide @ $4.72/ac
Caramba @ $15.50/ac
46-0-0 @ $490/T
11-52-0 @ $686/T
Traxos / Buctril M @ $18.88
Seed cost include Cruiser Maxx Vibrance

Basic Economic Analysis



Excludes: Storage costs, Transportation cost, Fixed Costs, Depreciation, Fuel, Insurance

Conclusions

- 2017 was very dry in SW Saskatchewan.
- Added inputs in the higher wheat classes increased yield somewhat, but not enough to realize a positive return.
- Added inputs in the higher wheat classes increased protein but returned no economic benefit with no price premiums for protein. (Blending opportunities???)
- Added inputs in the lower wheat classes also increased yield, but resulted in a similar net return as those from the reduced input level (less risk).
- Added inputs in the lower wheat classes did not increase protein but did not have a negative effect on net return, since the main markets for these wheat classes are not necessarily looking for protein.
- CWGP, CWSWS, and CNHR had an economic advantage over the CWAD, CPSR, and CWRS under both input management levels.
- There can be profitable opportunities by assigning some cereal acres to a CPS, CWSWS, CWGP, or a winter cereal.

Acknowledgements

- ADOPT
- Saskatchewan Ministry of Agriculture
- Reisner Seed Farms (Limerick, Sk.)
- Canadian Grain Commission
- WCA Staff

Saskatchewan AgriARM Applied Research Management

Thank-you!

2018 Cropportunities Conference , March 15

2018 Wheatland Annual Tour July 19, 2018

www.wheatlandconservation.ca