

GATEWAY RESEARCH ORGANIZATION

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Gateway Research Organization (GRO)

- Not for profit **Applied Agricultural Research Association.**
- Producers run board :
 - 11 board of directors
 - Office is located in Westlock
 - More than 450 producers from our region on mailing list, membership and social media.



Mandate

- Produce high quality, unbiased, and scientifically sound research.
- Produce research based on local soil and growing conditions.
- Provide a good resource for information transfer and extension to producers.
- Collaborate with specialists from the agriculture industry, government and educational institutions

2019 Projects Summary

- **Crop Trials**

- 145 varieties of Barley, Oats, Wheat, Triticale, Winter Wheat, Flax, Yellow and Green peas, Fababeans
- Research trials on Wheat and Oat agronomy, Manipulators in wheat/barley, product efficacy trial on canola.
- **Federated Coop Xtreme site- Alberta**

Overall about 2200 small plots work (Total 30 research/demo trials including forages)

- **Forage Trials**

- **Regional Silage Trials**
 - Barley, Oats, Triticale
- Perennial & Annual forage mix trial
- Demo. of Cell Design patterns and effect of grazing on pasture





GRO – POGA Oat trial

Objective: To identify oat varieties with superior milling quality grades and higher yield, when grown in the Northern and Central Alberta.

Measurements: Milling Grade (Laboratory analysis)

- Lesser Hull percentage = MORE GROAT = more flour
- ***Rolled oats/Oatmeal*** must provide at **least 4% of beta-glucan**
 - Higher Intake (3g or more per day) oat beta-glucan had shown in humans:
 - a reduction of blood cholesterol levels
 - a reduction of blood glucose rise



POGA Oat Trial-2019

11 milling oat varieties tested at two sites in Alberta

- AC Morgan
- CS Camden
- CDC Seabiscuit
- Triactor
- CDC Ruffian
- CDC Orrin 2017-18
- Akina 2017-18
- AC Summit
- CDC Arborg
- ORE3542M
- CDC Norseman
- OT3087
- OT3097

Methodology

- Best management practice to mimic the producers.
 - Seeding rates were calculated based on 1000 kernel weight of each variety with a Seed Counter, desired plant density and germination percentage.
 - Trial seed as randomized block design with 4 replications
- Observations recorded and data collected for yield measurement throughout the season.
- Samples sent to University of Alberta for Beta-glucan analysis.

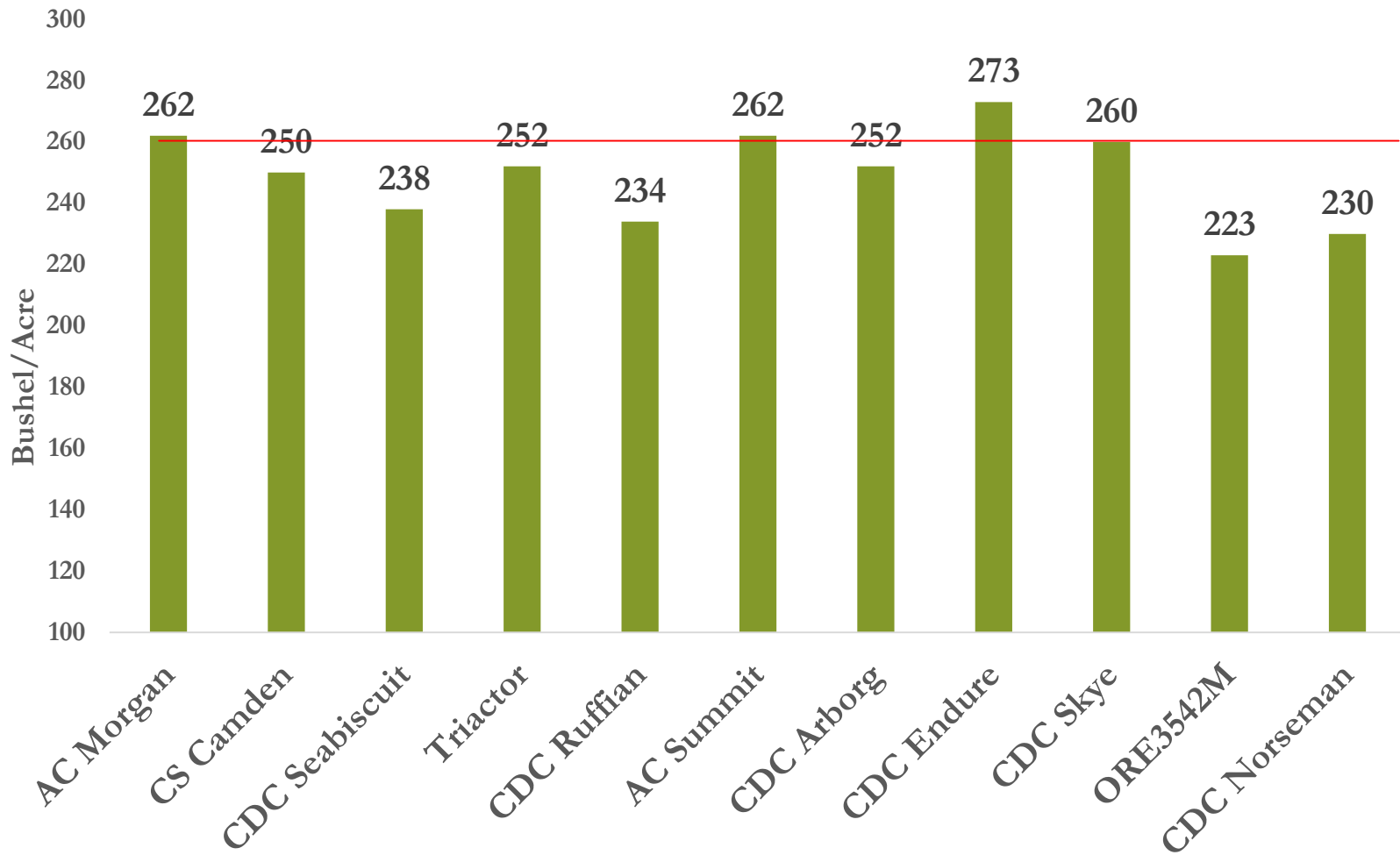


POGA Trail Info-2018

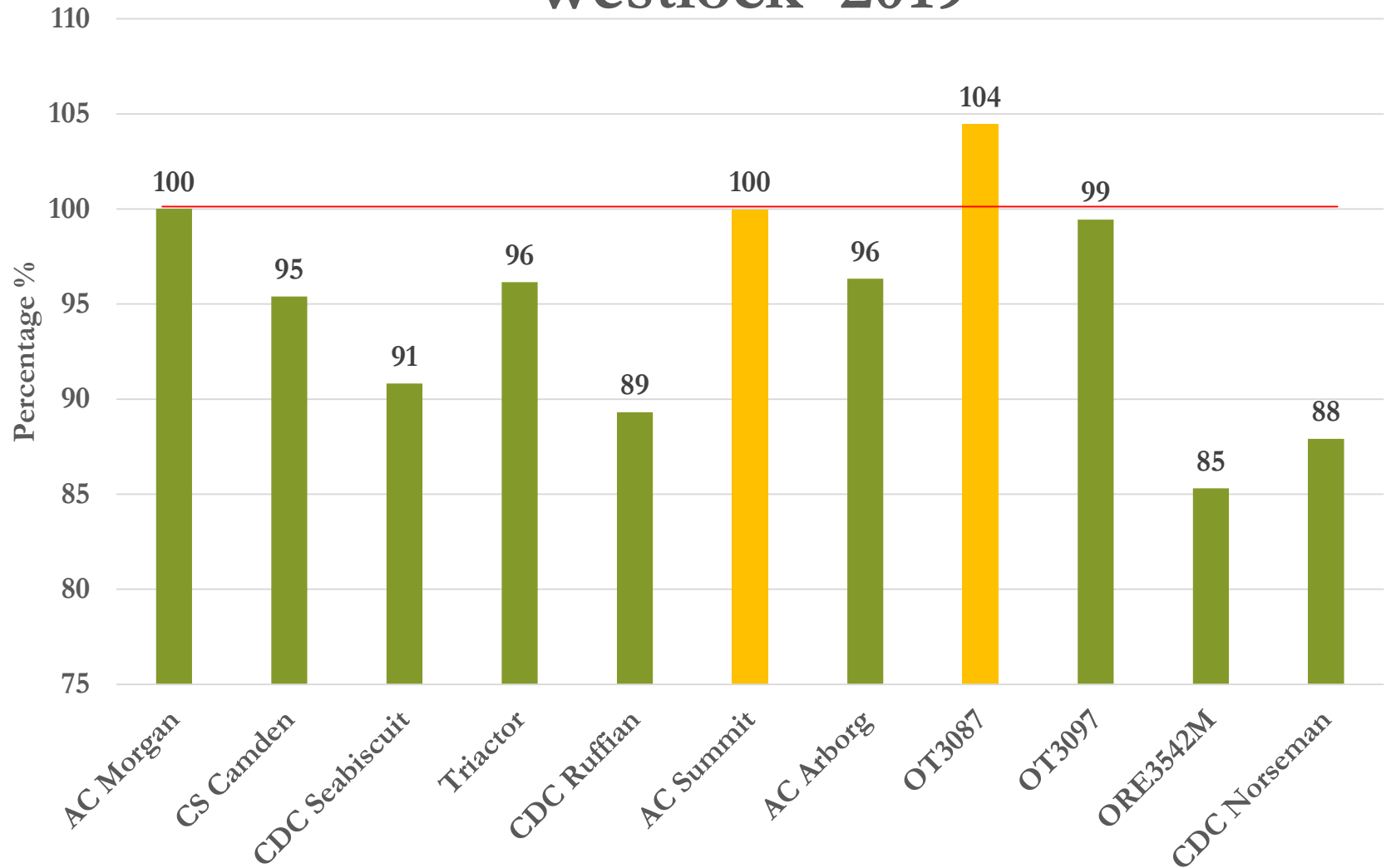
Location:	Peace region (Falher)	Westlock
Seeding Date:	May 16th, 2019	May 10th, 2019
Seeding Rate:	300 Plants/m ²	300 Plants/m ²
Soil Temp & Moisture:	7.5 Celsius adequate	10.1 Celsius Very good
Seeding Depth:	³ / ₄ inch	³ / ₄ inch
Herbicide & Fungicide	Applied	Applied
Fertility*	110 N-40 P2O5-15 K2O-25 S	127 N-31 P2O5-75 K2O-15 S
Harvest date:	Sept 23th, 2019	Oct 10th, 2019
Precipitation (mm)	251	374

* Based on **soil test** to allow maximum yield output

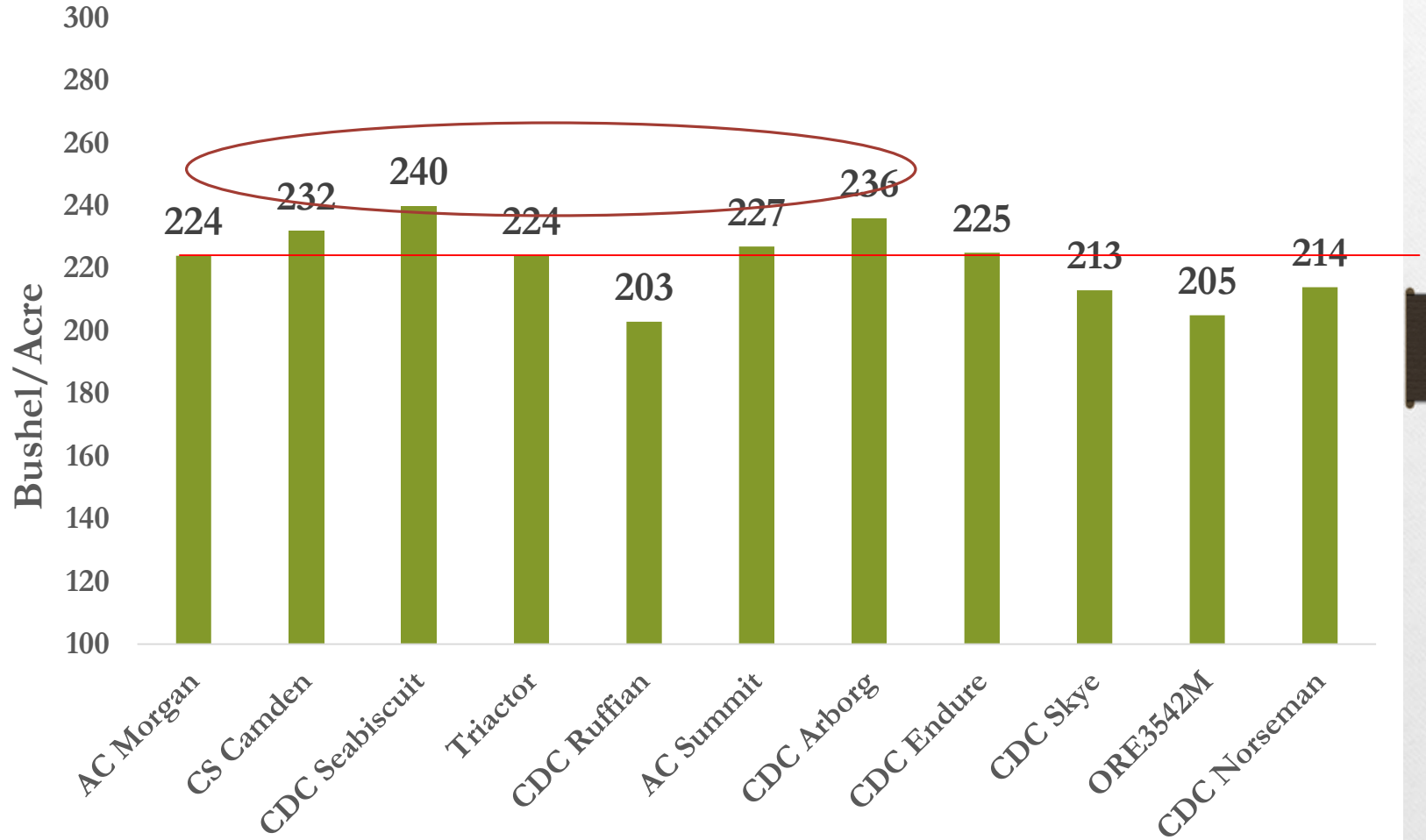
Yield Data 2019 - Westlock



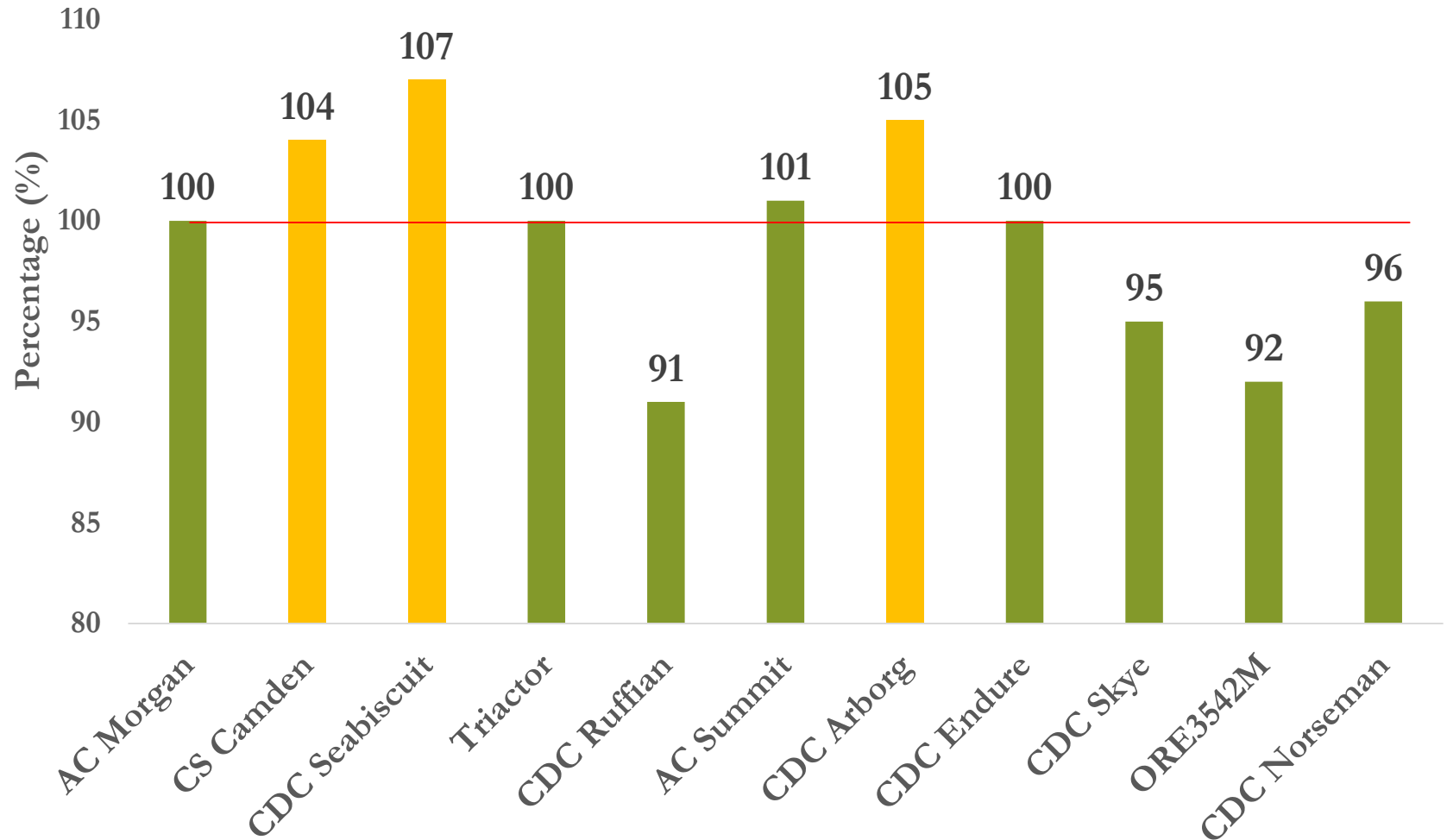
Yield as compared to AC Morgan Westlock- 2019



Yield Data 2019 - Peace



Yield (%) as Compared to AC Morgan Peace Region 2019



Will New Varieties beat AC Morgan???

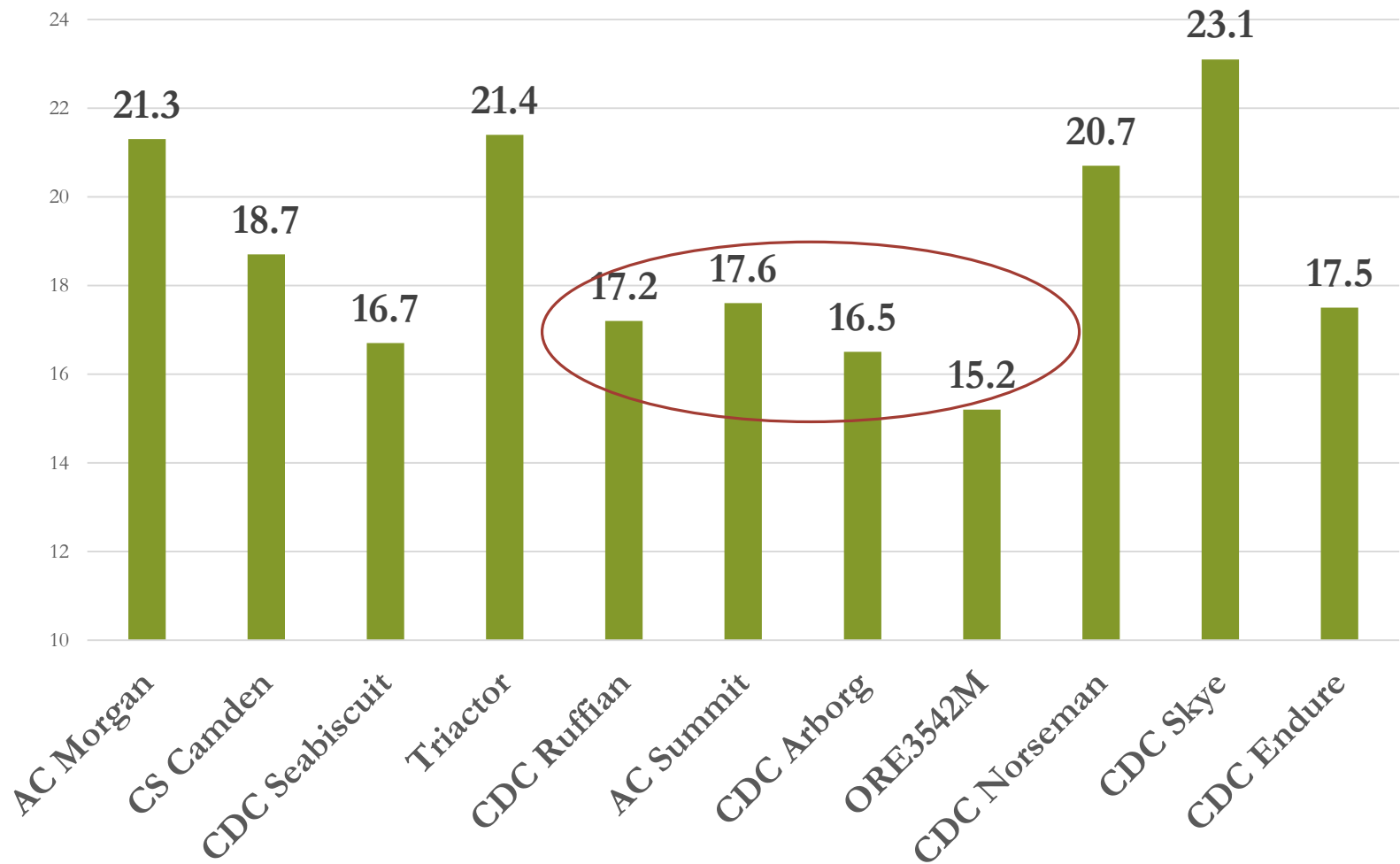
Top 3 varieties at Westlock

2019	CDC Endure	CDC Arborg	AC Morgan
2018	CDC Endure	CDC Arborg	Triactor
2017	CS Camden	Akina	CDC Ruffian
2016	CDC Seabiscuit	CDC Ruffian	CDC Orrin

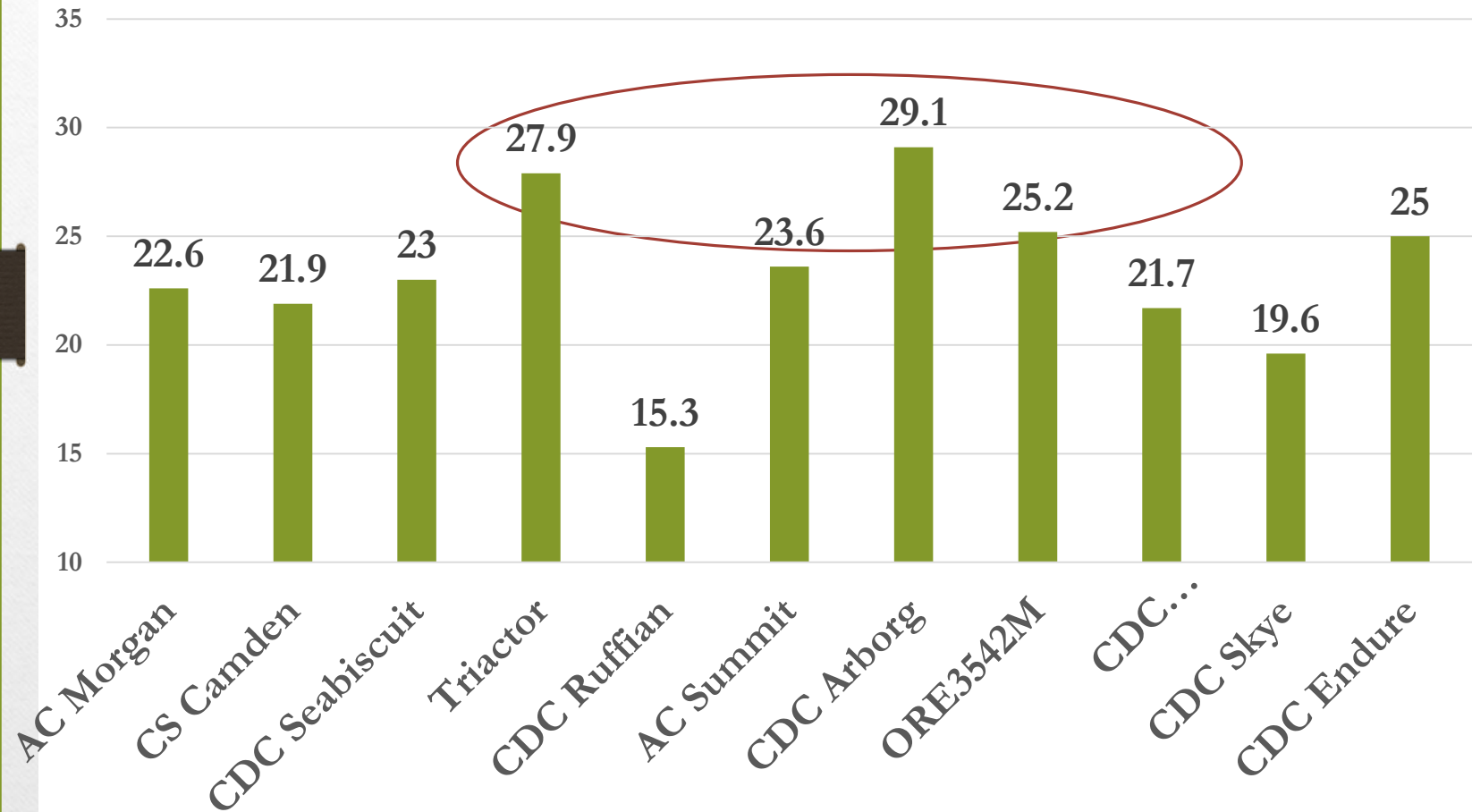
Top 3 varieties at Peace Region

2019	CDC Seabiscuit	CDC Arborg	CS Camden
2018	Triactor	AC Morgan	CDC Endure
2017	CDC Ruffian	CS Camden	CDC Orrin
2016	CDC Ruffian	AC Morgan	CDC Seabiscuit

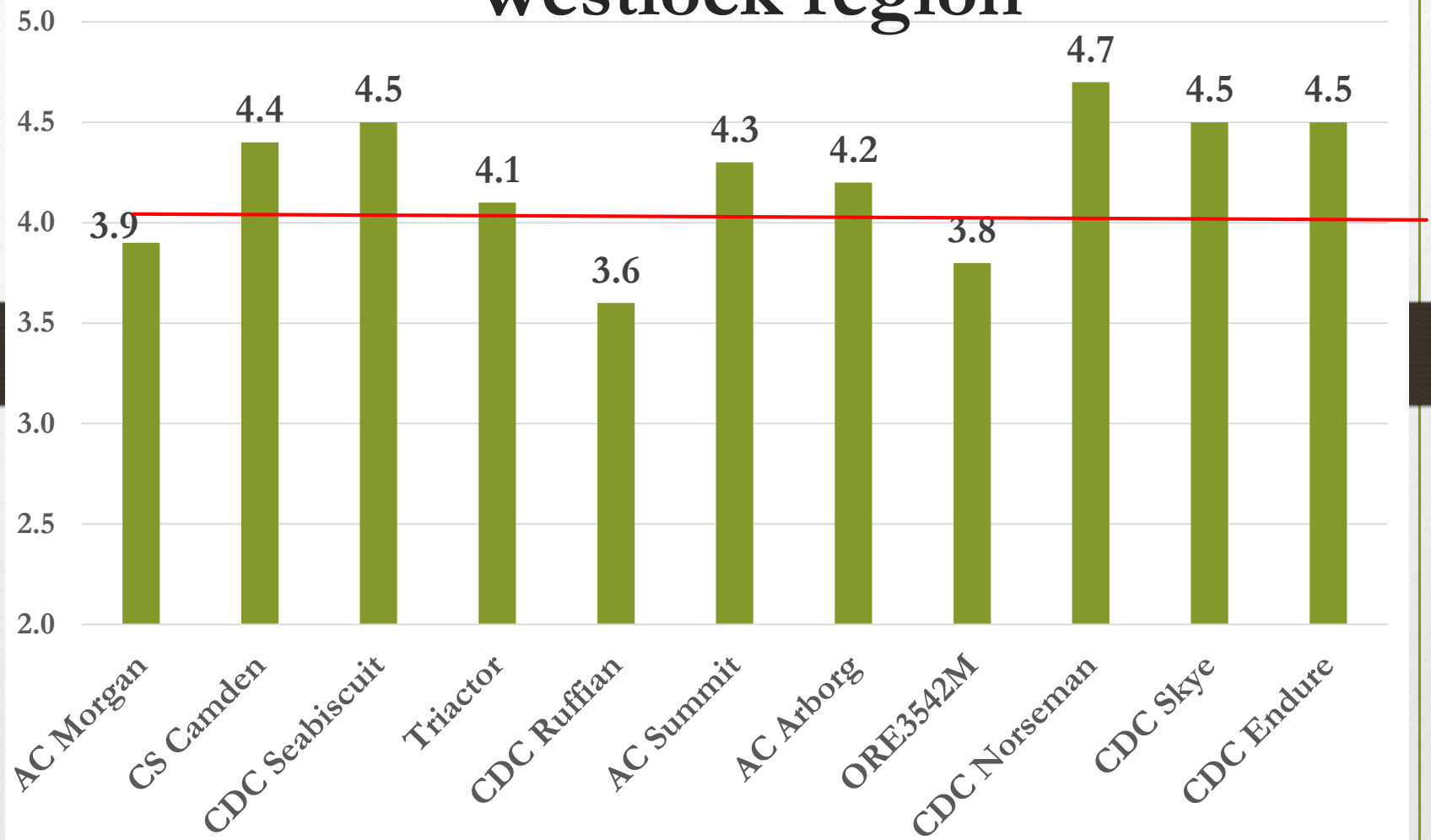
Hull Percentage - Westlock 2019



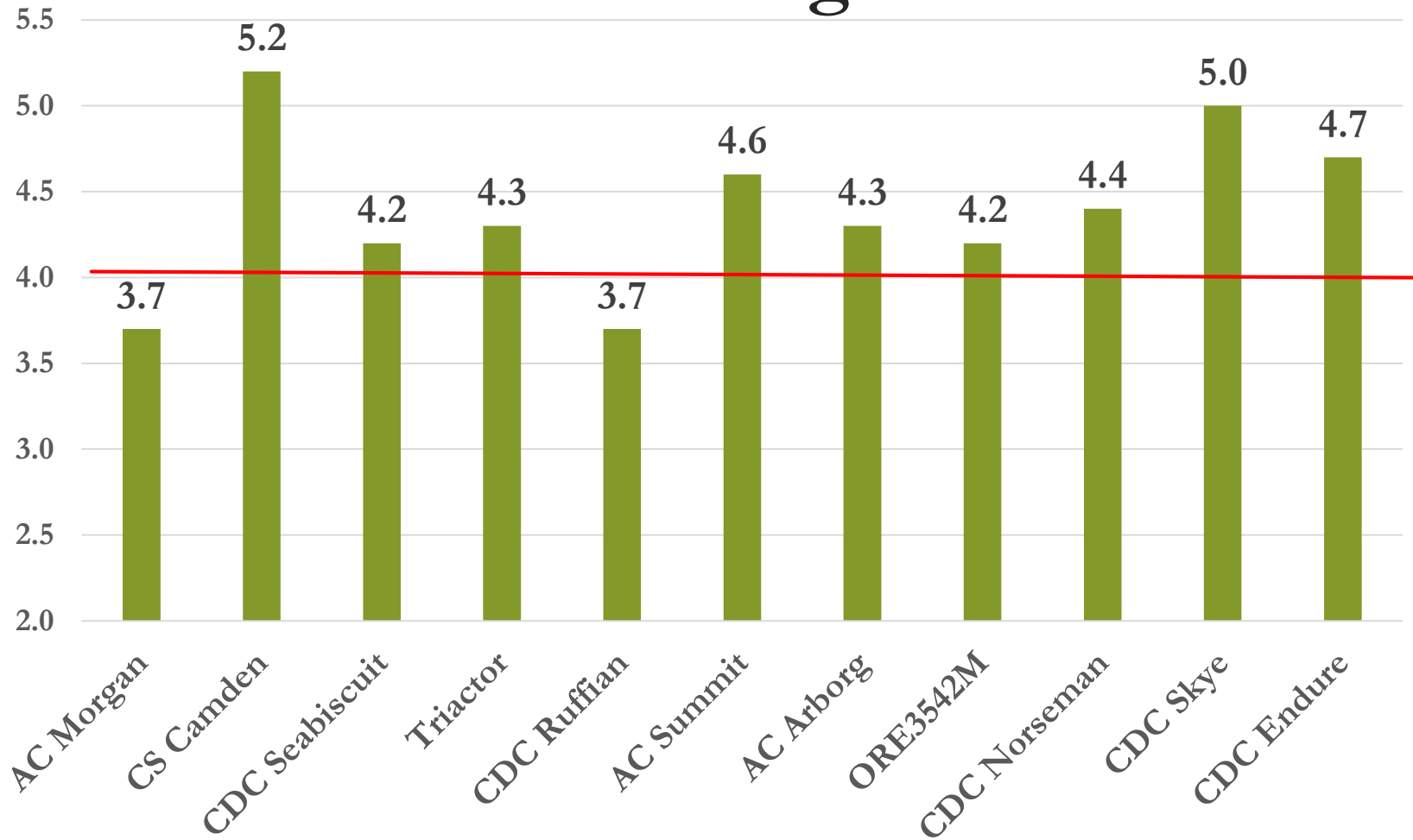
Hull Percentage – Peace 2019



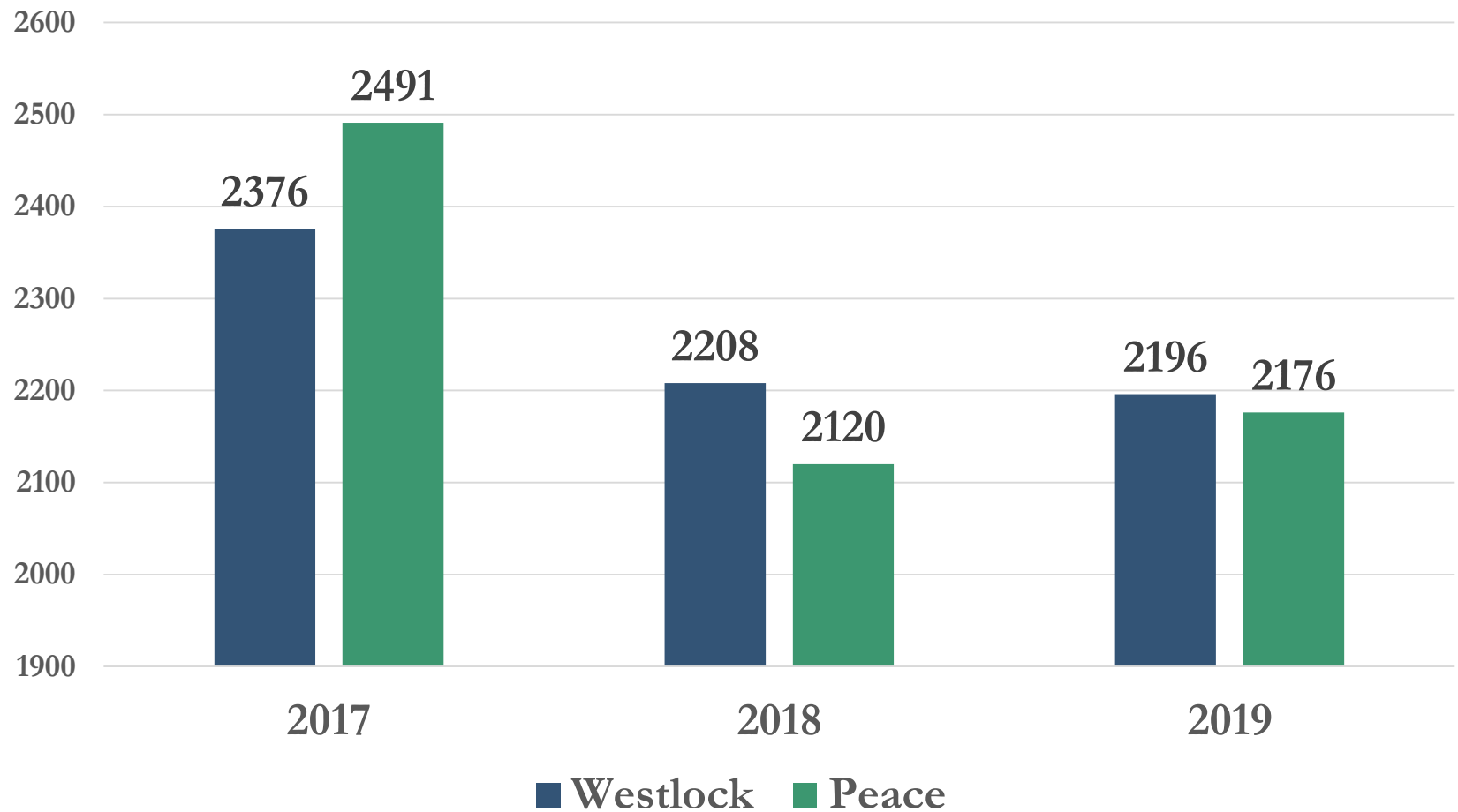
Beta glucan (%) 2019 : Westlock region



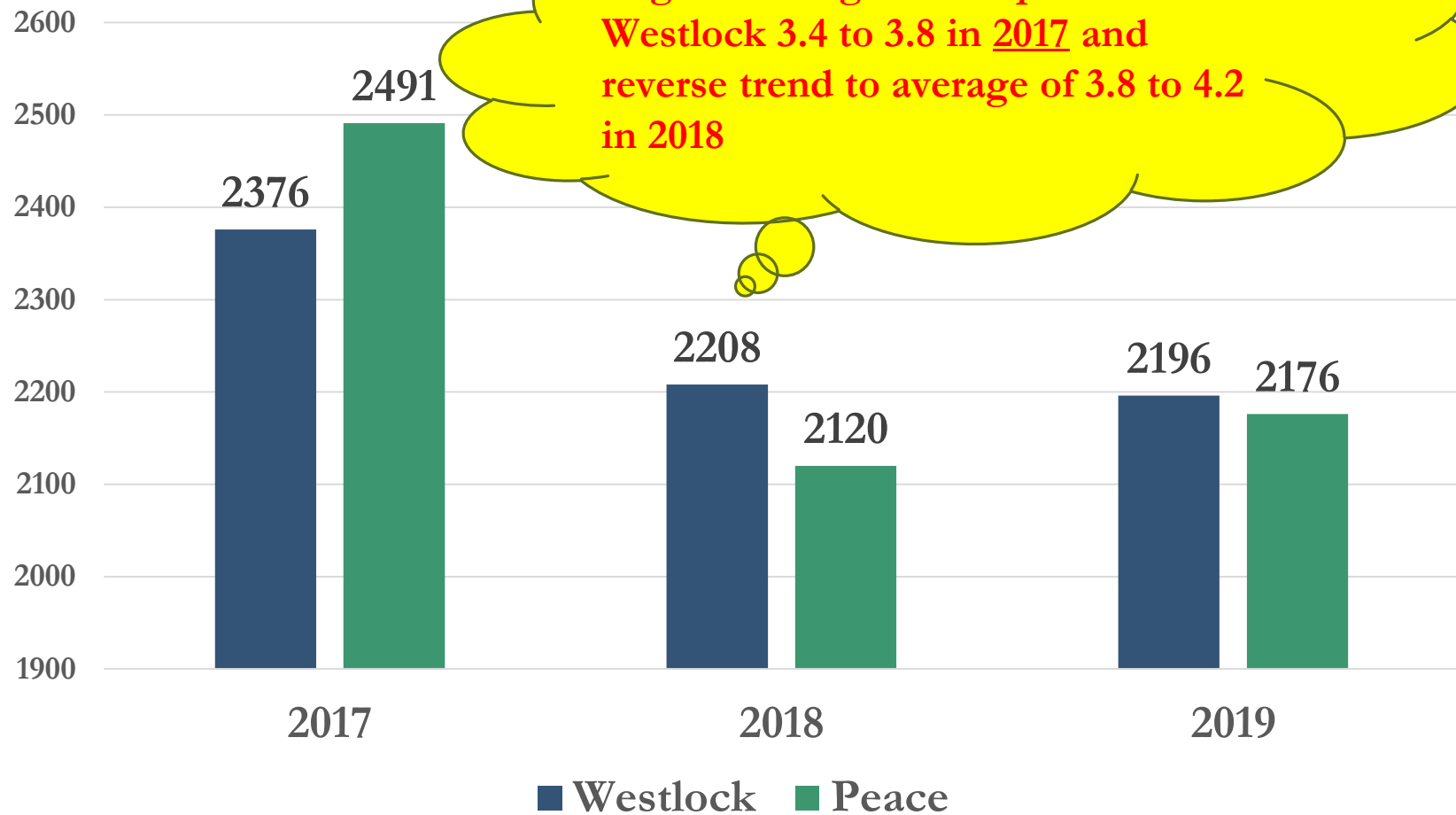
Beta glucan (%) 2019 : Peace region



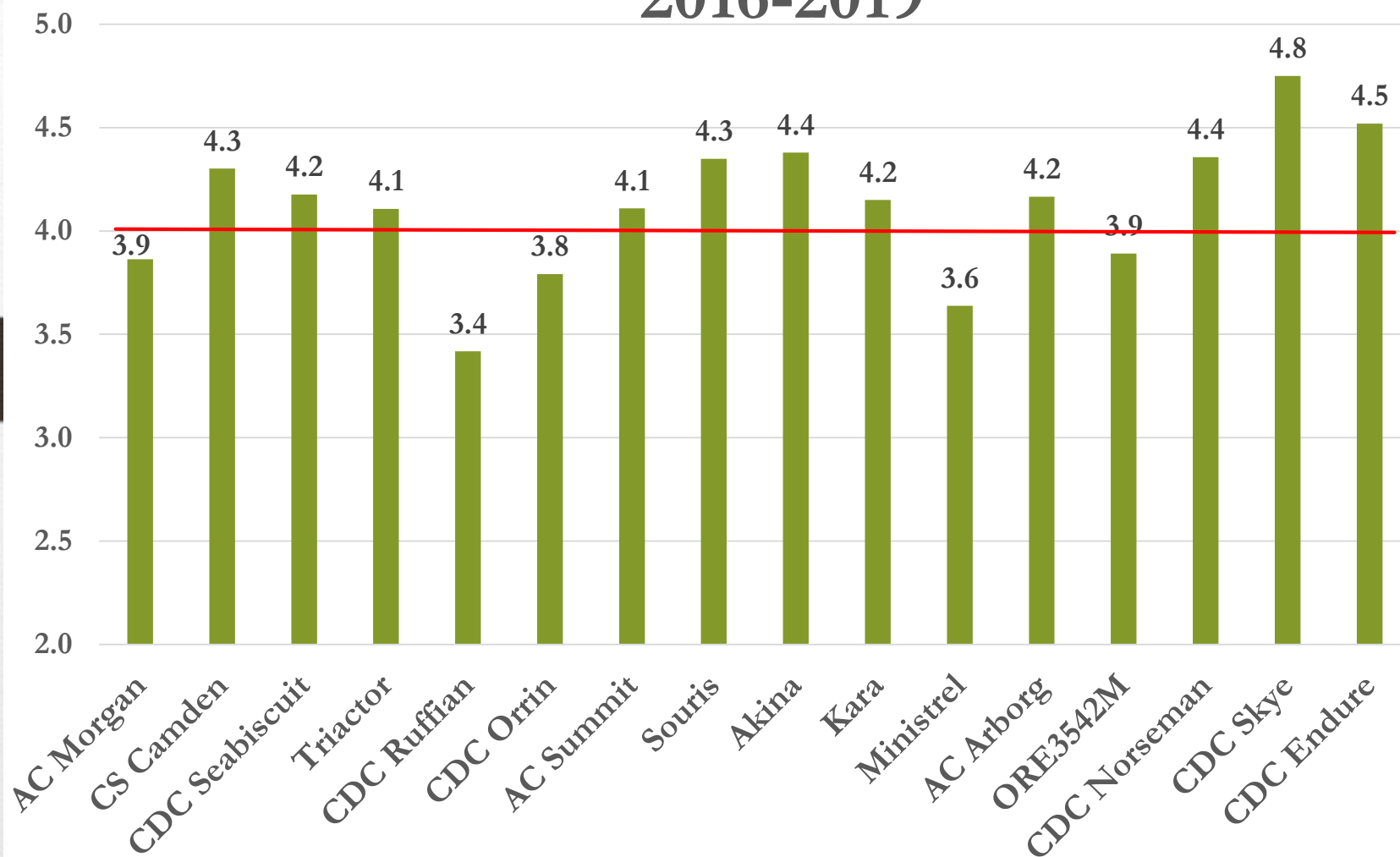
Cumulative Growing Degree days for Oats



Cumulative Growing Degree days



Beta-Glucan content in milling oat 2016-2019



Summary

- Significant effect of location and varietal difference for the yields as well as beta-glucan levels in 2016, 2017 2018 and 2019.
 - 2019: Good yield overall with higher level of Beta-glucan levels in most oat varieties at Westlock.
- Environmental conditions effect yield capacity of a variety to a higher degree than the effect on Beta-glucan levels.
 - Moisture
 - Eg: CDC Ruffian lowest beta-glucan in all year at both site

Summary

- Newer milling oat varieties are better for beta glucan content and yield as well.
 - On farm performance (Harvest ability, lodging etc. still need to be discussed.
- CDC Endure had shown to be great milling oat with **high yield** and **higher beta-glucan** and **good test weight**, which are preferred characteristic for the grain millers.
 - CDC Arborg
 - CDC Skye
 - AC Morgan, CS Camden and Triactor: still holds good for yield



GRO: Active on Internet

- Our new website is:
www.gatewayresearchorganization.com
- Follow us :
- Facebook: [Gateway Research Org](#)
- On Twitter at: [@GatewayResearch](#)

Acknowledgment

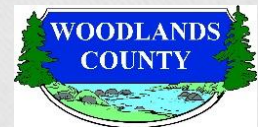


- **Prairie Oat Growers Association (POGA)**
- **Research collaborator peace region site** : Smoky Applied Research and Demonstration Association
- FP Genetics (financial assistance in lab analysis)
- **Dr. Thava Vasanthan** (University of Alberta) for β -glucan analysis

Thanks for providing Seed donations:

- Nick Jonk
- Canterra Seeds
- Alliance Seed
- FP Genetics

WESTLOCK
SEED CLEANING CO-OP LTD.





Thank you

