

# **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 350 producers from our region on mailing list, membership and social media.





# Mandate

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- 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

# 2018 Projects Summary

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- **Crop Trials**

- 135 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.

Overall about 1300 small plots work (Total 24 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 North Central or Peace Region of 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-2018

12 milling oat varieties tested at two sites in Alberta

- |                  |                |
|------------------|----------------|
| • AC Morgan      | • Akina        |
| • CS Camden      | • AC Summit    |
| • CDC Seabiscuit | • CDC Arborg   |
| • Triactor       | • ORE3542M     |
| • CDC Ruffian    | • CDC Norseman |
| • CDC Orrin      | • OT3087       |



# Methodology

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- 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 3 or 4 replications
- Observations recorded and data collected for yield measurement throughout the season.
- Samples sent to University of Alberta for Beta-glucan analysis.



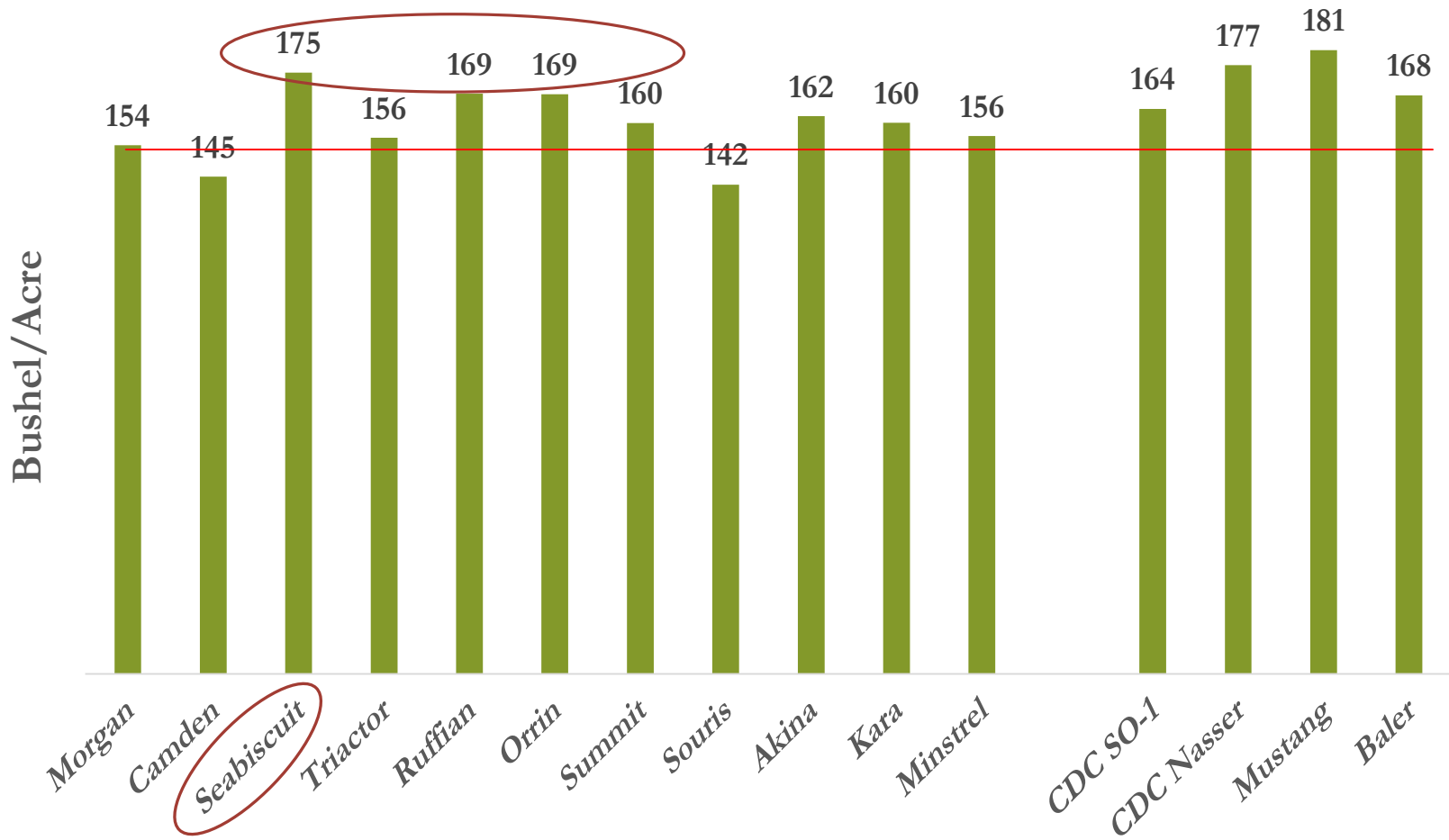
# POGA Trail Info-2018

Location:	Peace region (Falher)	Westlock
Seeding Date:	May 24th, 2018	May 18th, 2018
Seeding Rate:	Sept 25th, 2018	Sept 27th, 2018
Soil Temp & Moisture:	16.9 Celsius Adequate	10.4 Celsius Very Good
Seeding Depth:	1.5 inch	$\frac{3}{4}$ inch
Herbicide & Fungicide	Applied	Applied
Fertility*	107N-30P2O5-25K2O-25S	107N- 25P2O5- 84K20- 8S
Harvest date:	Sept 25th, 2018	Sept 27th, 2018
Precipitation (mm)	311	248

\* Based on soil test; # Target Yield of 120 bushel/Acre

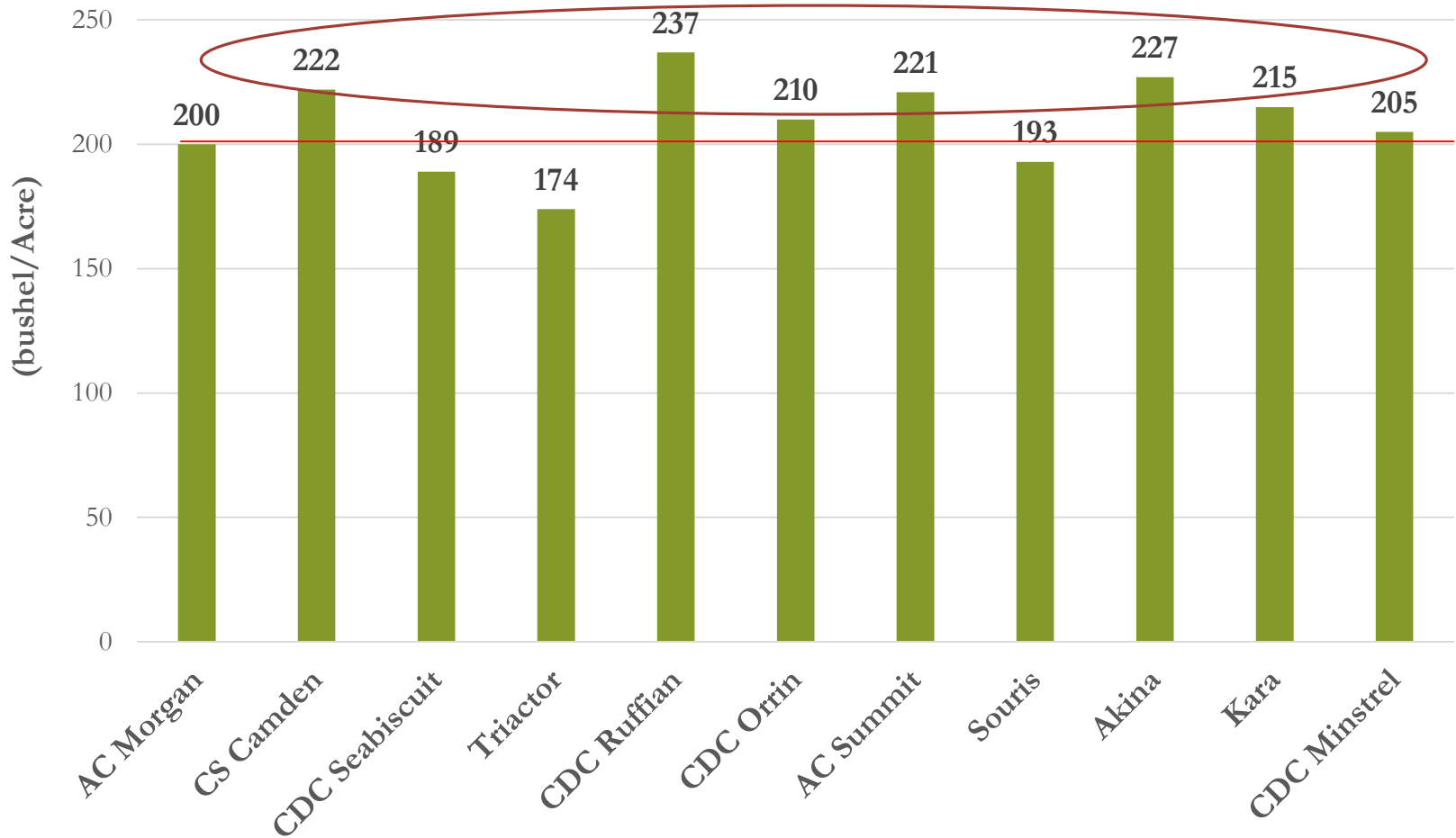


# Yield Data 2016 - Westlock



CDC Seabiscuit 113% higher compared to Morgan; CDC Ruffian and CDC Orrin 109%

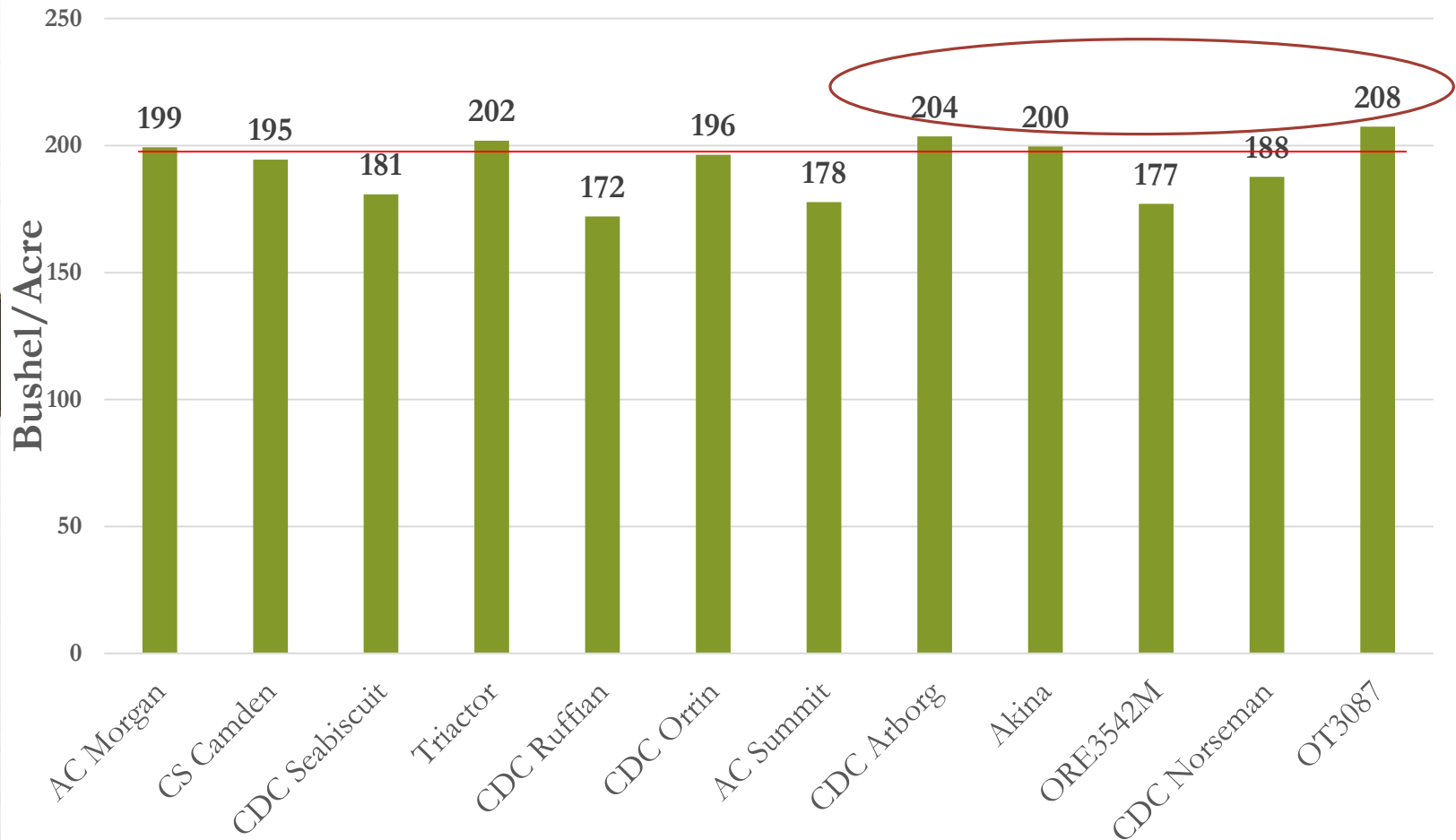
# Yield Data 2017 - Westlock



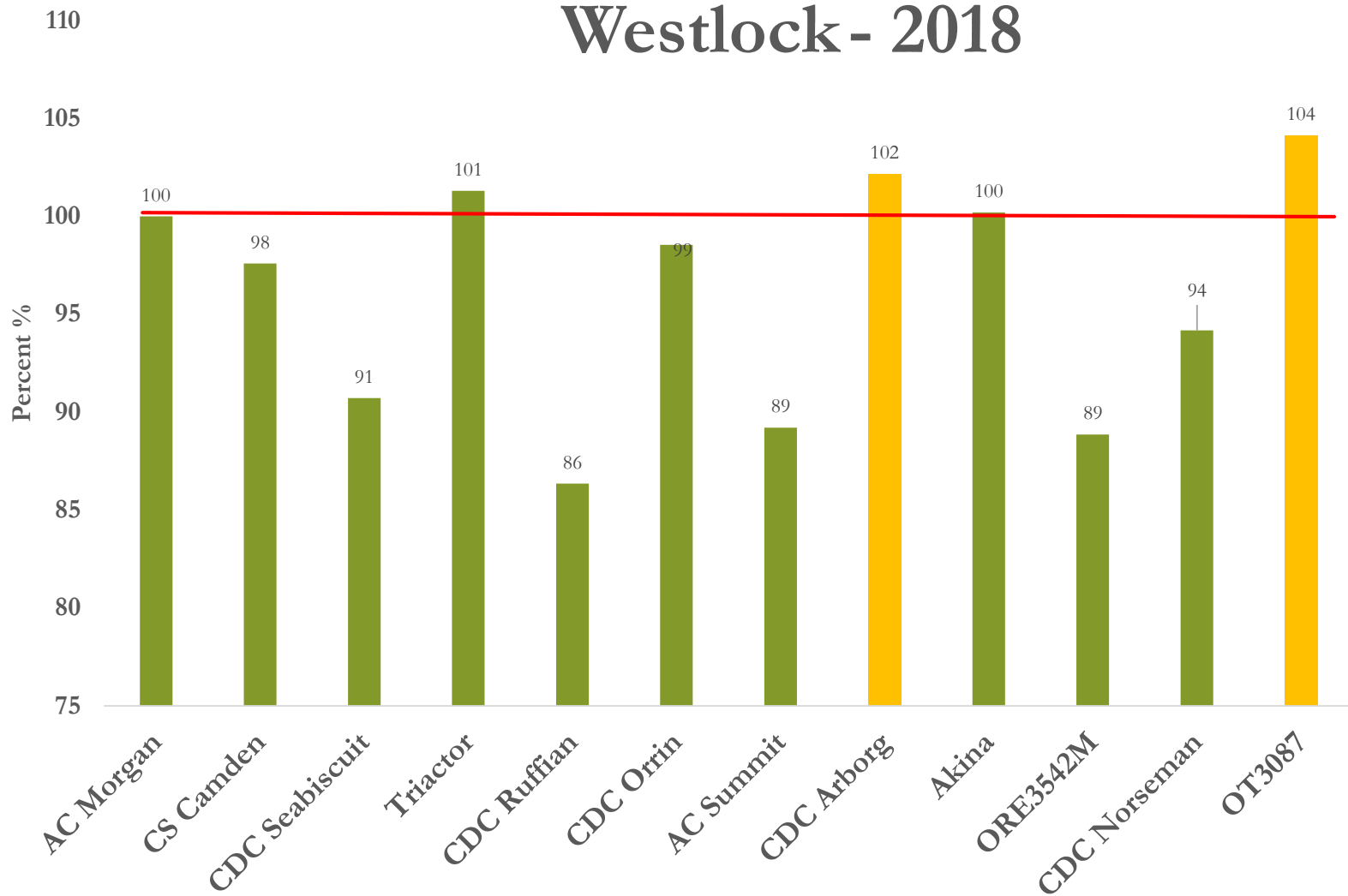
CDC Ruffian 118% higher compared to AC Morgan; and Triactor 113%



# Yield Data 2018 - Westlock



## Yield as compared to AC Morgan Westlock - 2018



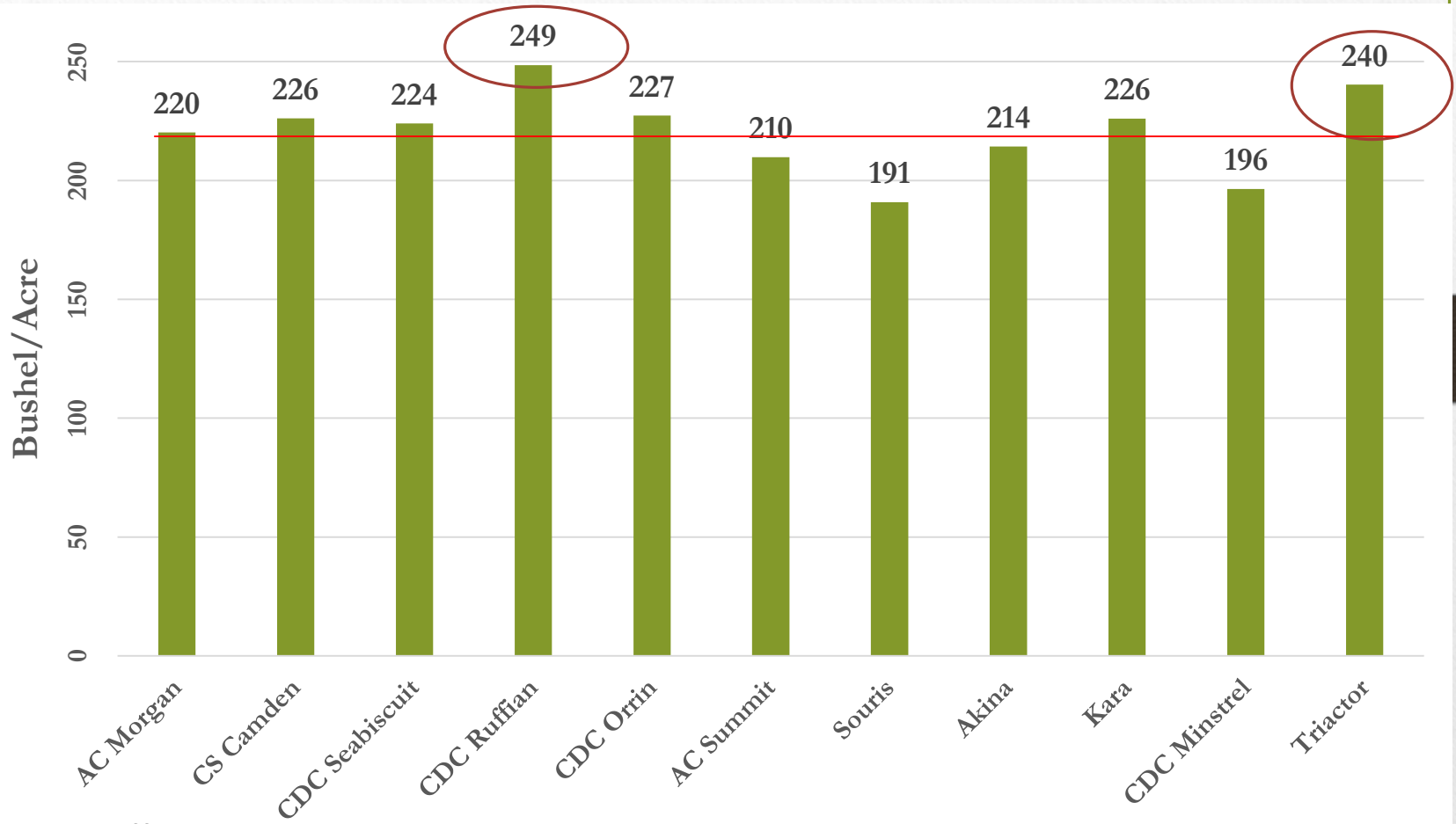


# Yield Data 2016 – Peace Region



CDC Ruffian 107% higher compared to Morgan

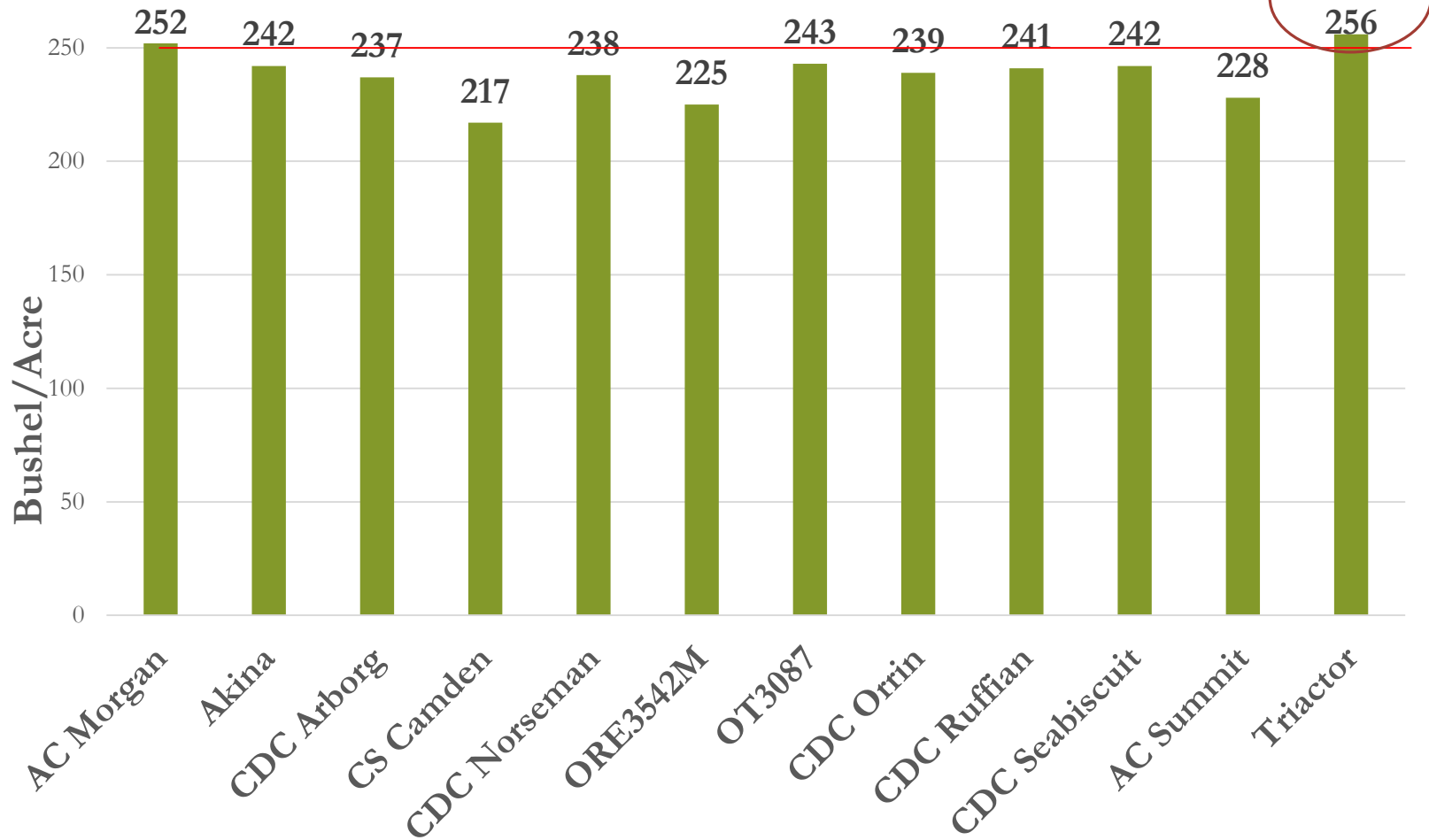
# Yield Data 2017 – Peace Region



CDC Ruffian 113% higher compared to Morgan; and Triactor 109%



# Yield Data 2018 – Peace Region



## Yield as compared to AC Morgan Falher 2018





# Will New Varieties beat Morgan 3 years in a Row???

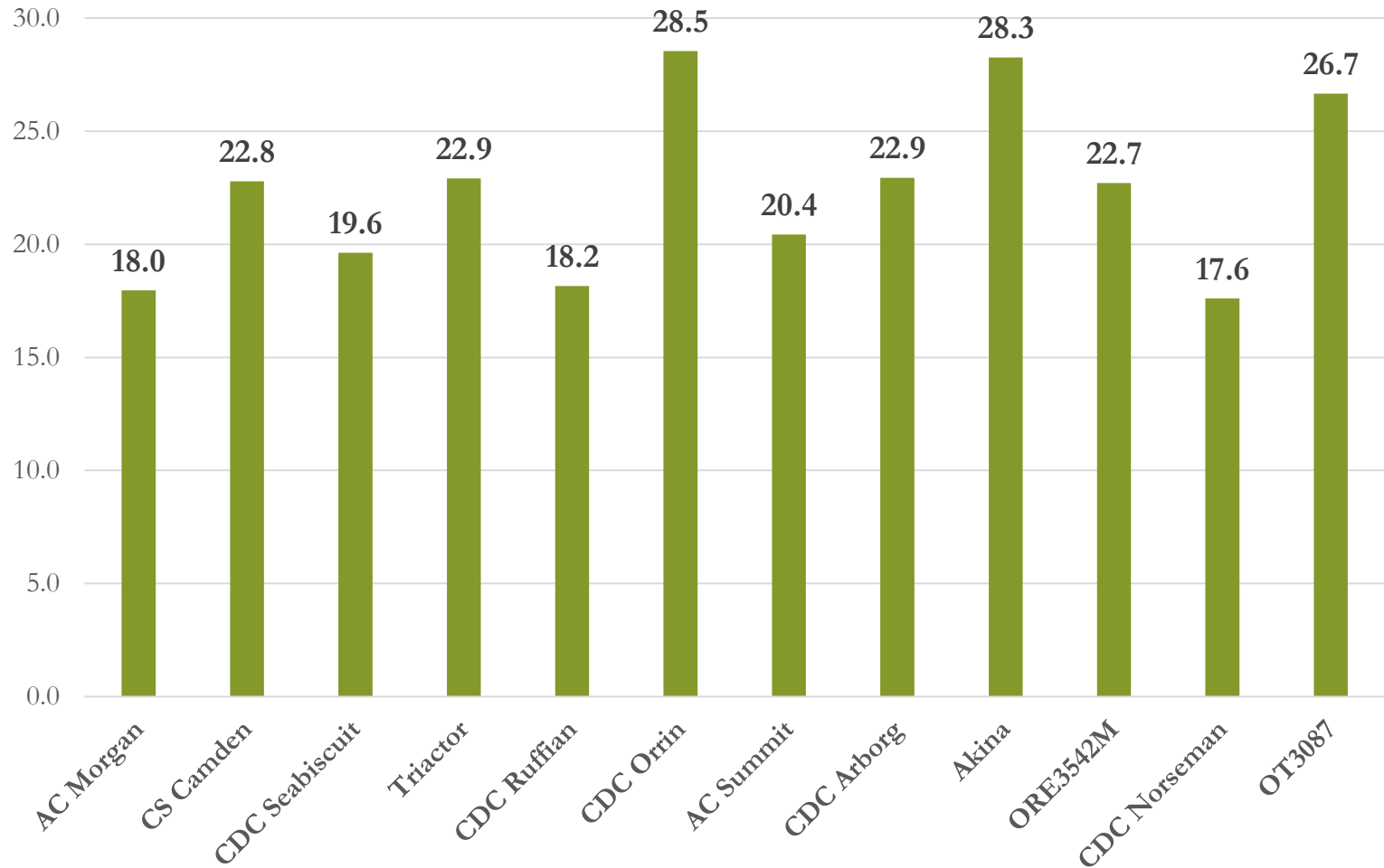
## Top 3 varieties at Westlock

2016	CDC Seabiscuit	CDC Ruffian	CDC Orrin
2017	Camden	Akina	CDC Ruffian
2018	OT3087	CDC Arborg	Triactor

## Top 3 varieties at Peace Region

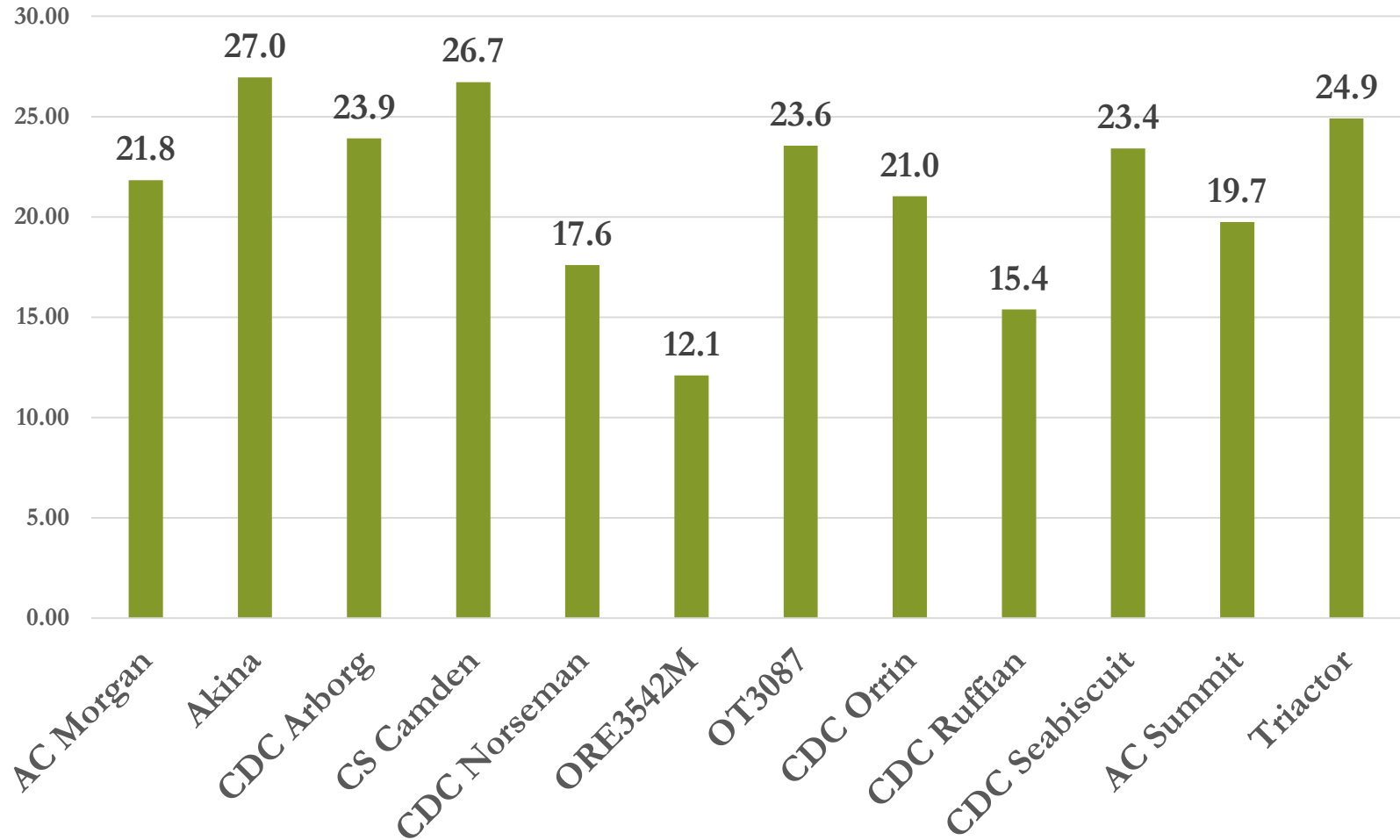
2016	CDC Ruffian	AC Morgan	CDC Seabiscuit
2017	CDC Ruffian	Camden	CDC Orrin
2018	Triactor	AC Morgan	OT3087

# Hull Percentage - Westlock 2018

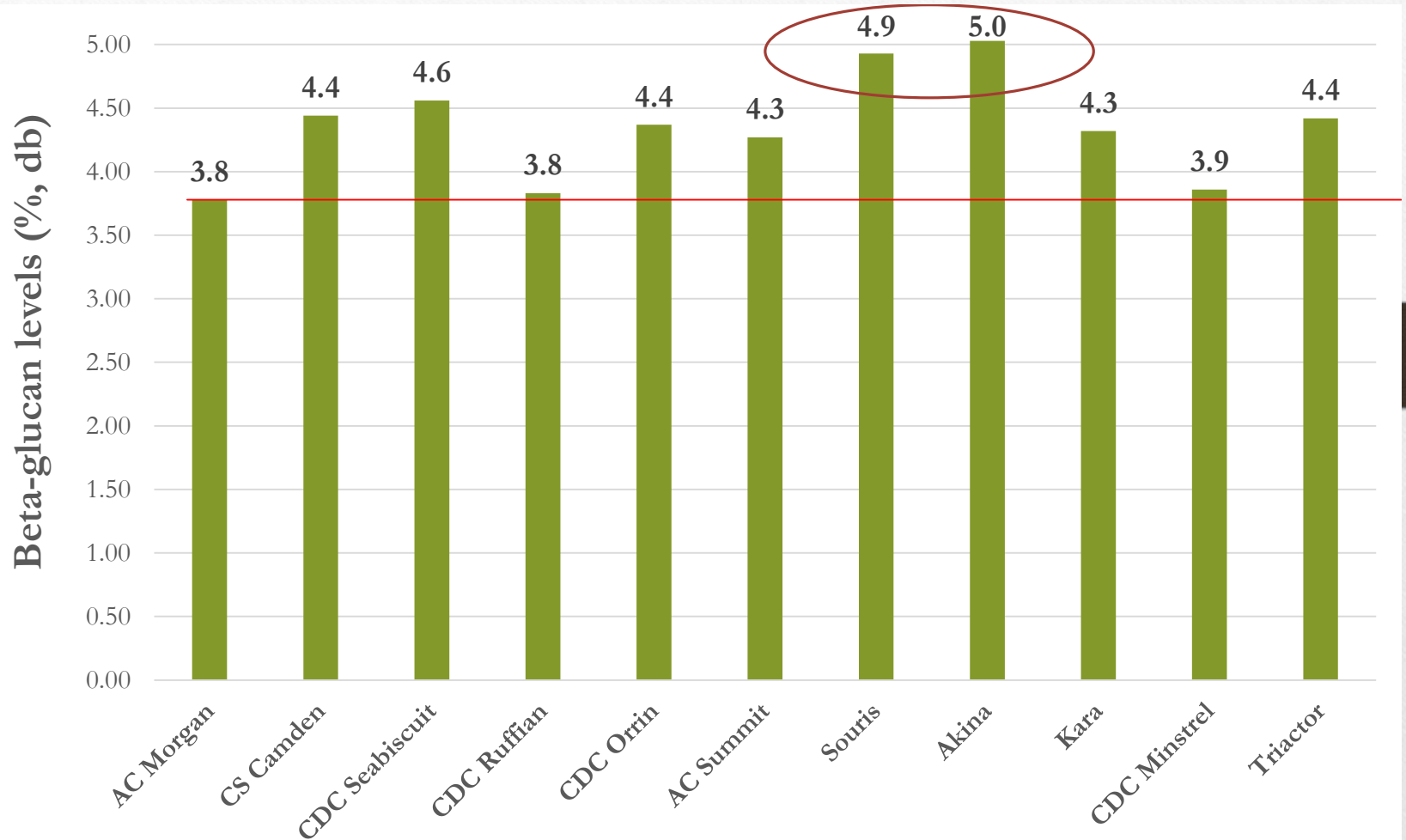




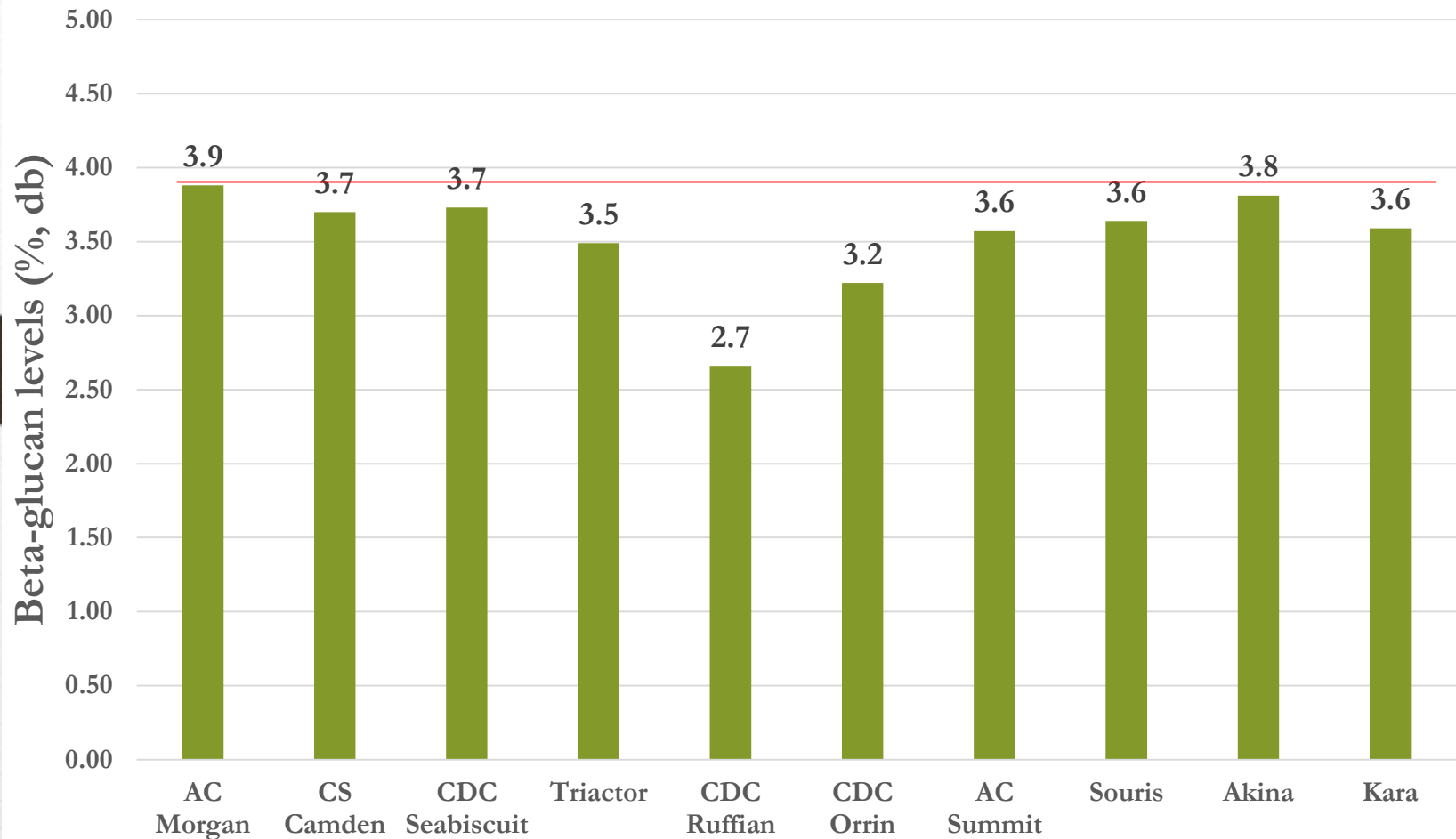
# Hull Percentage- Peace 2018



# Beta-Glucan 2016 – Westlock

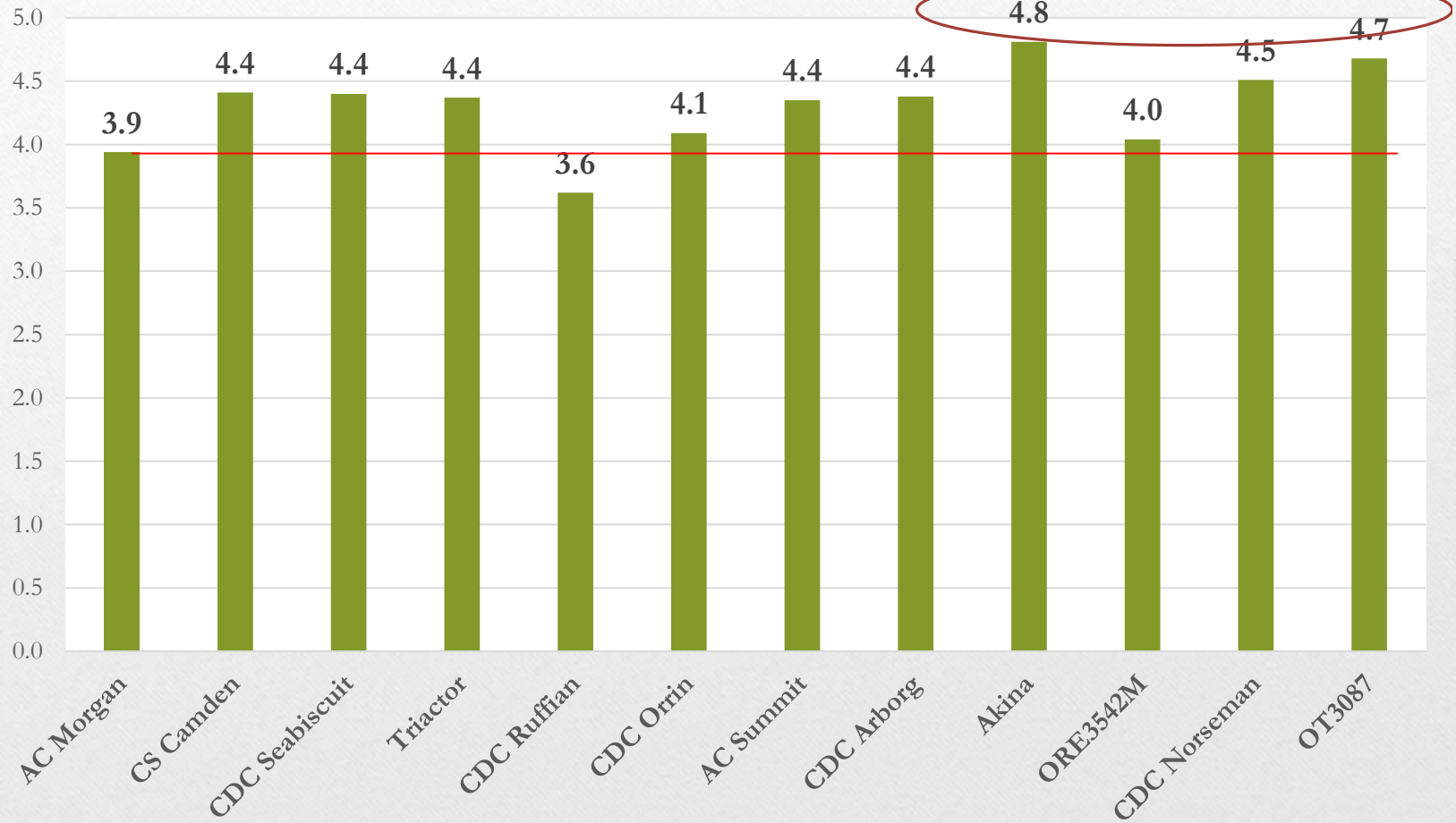


# Beta-Glucan 2017 – Westlock

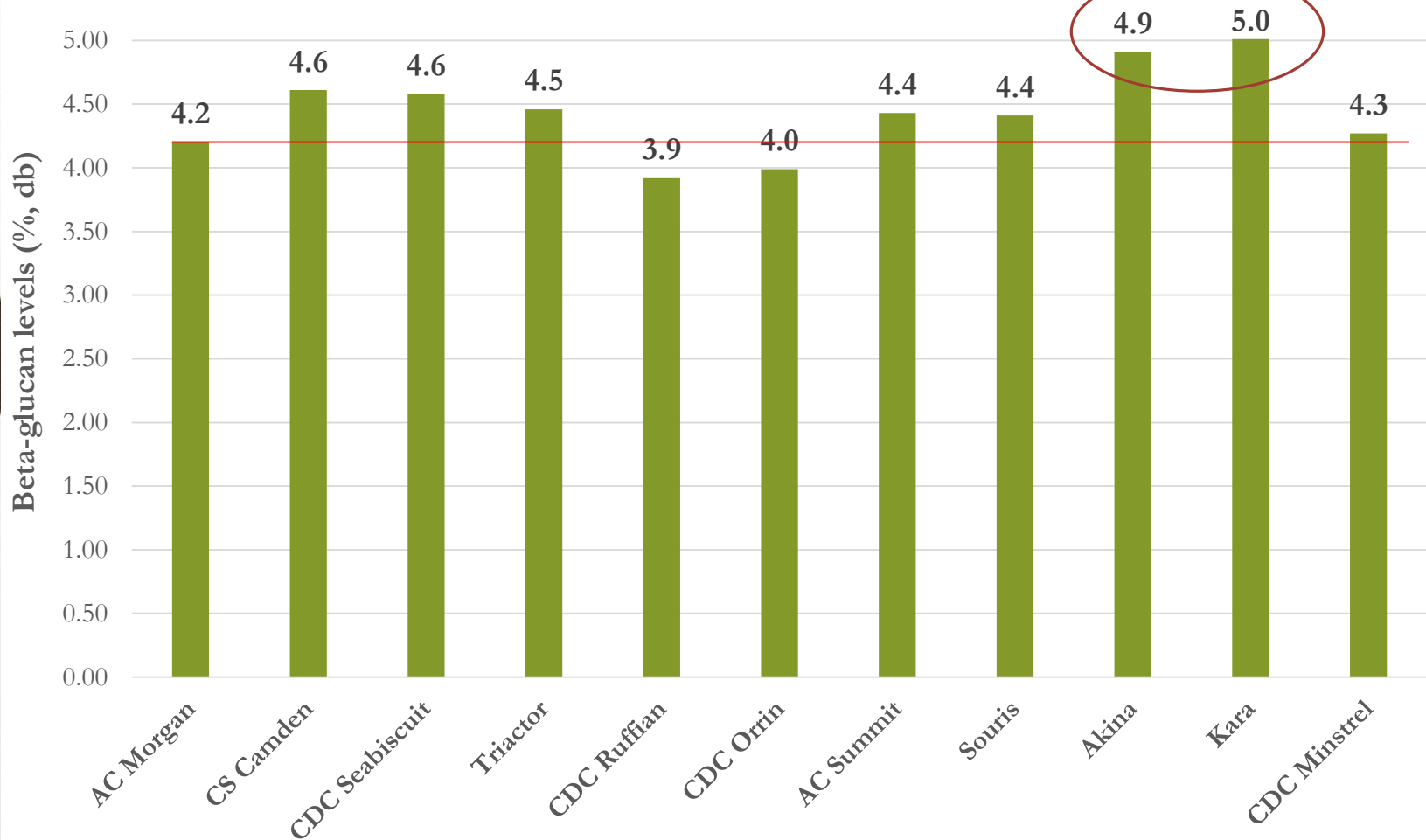




# Beta-Glucan 2018 – Westlock



# Beta-Glucan 2016– Peace Region

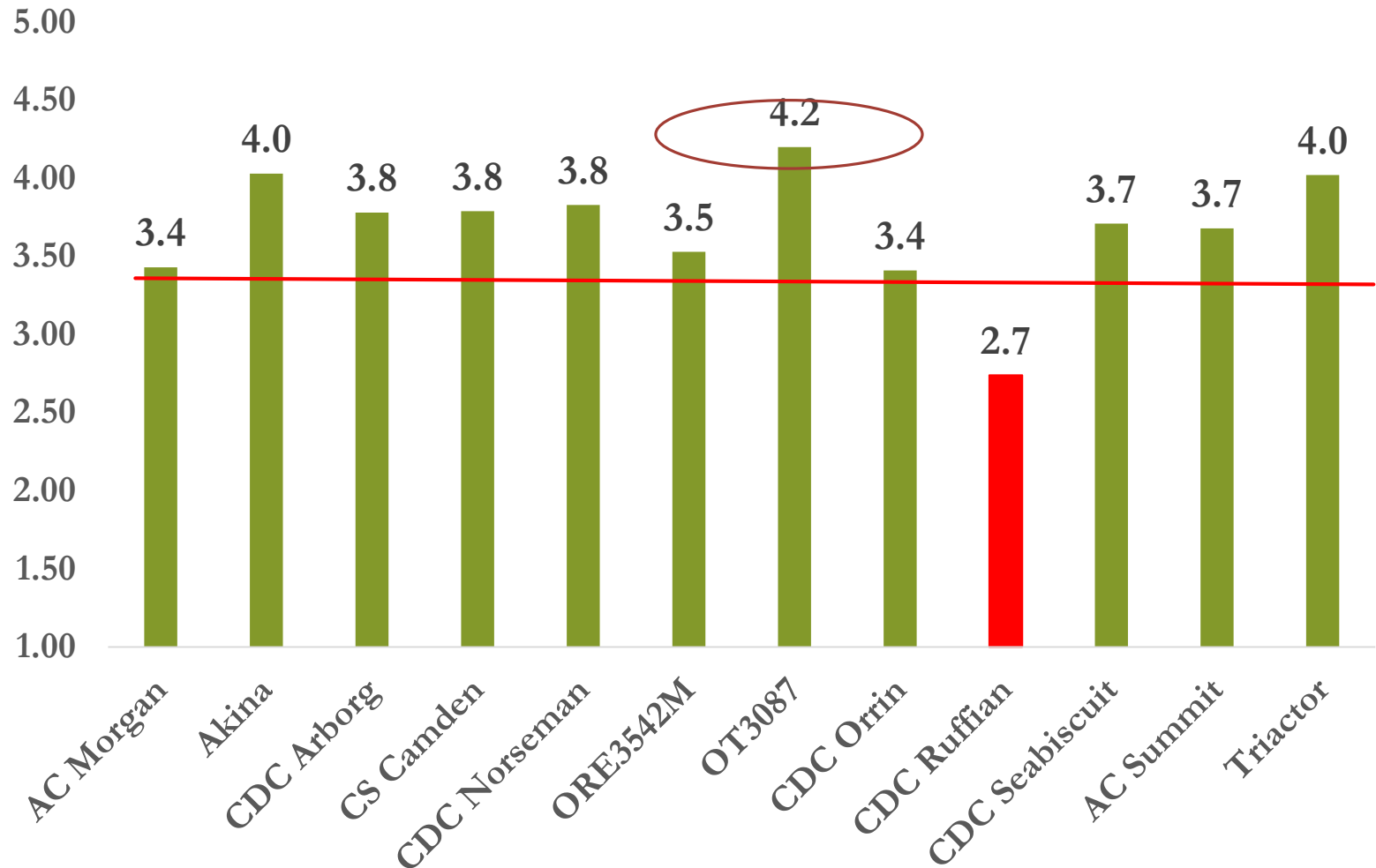


# Beta-Glucan 2017– Peace Region





# Beta Glucan- Falher 2018



# Updated Summary

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- Significant effect of location and varietal difference for the yields as well as beta-glucan levels in 2016, 2017 and 2018.
  - 2018: Good yield overall with even higher level of Beta-glucan levels in most oat varieties at Westlock.
- **CDC Ruffian:** has lowest levels of beta-glucan among all tested milling oat varieties at both location consistently.
  - One of top yielding varieties in Peace as well as westlock area
  - Lower hull percentage = milling advantage

# Updated Summary

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- Environmental conditions effect yield capacity of a variety to a higher degree than the effect on Beta-glucan levels.
- OT3087 had shown to be great milling oat with **high yield** and **higher beta-glucan** and **high test weight**, which are preferred characteristic for the grain millers.
  - CDC Arborg





# GRO: Active on Internet

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

# Acknowledgment

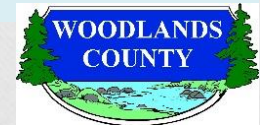


- **Prairie Oat Growers Association (POGA)**
- **Research collaborator peace region site : Smoky Applied Research and Demonstration Association**
- FP Genetics (financial assistance in lab analysis)
- **Dr. Thava Vasanthan ( University of Alberta) for  $\beta$ -glucan analysis**

Thanks for providing Seed donations:

- Nick Jonk
- Canterra Seeds
- Alliance Seed
- FP Genetics
- La Coop Federes

**WESTLOCK**  
SEED CLEANING CO-OP LTD.







Thank you

