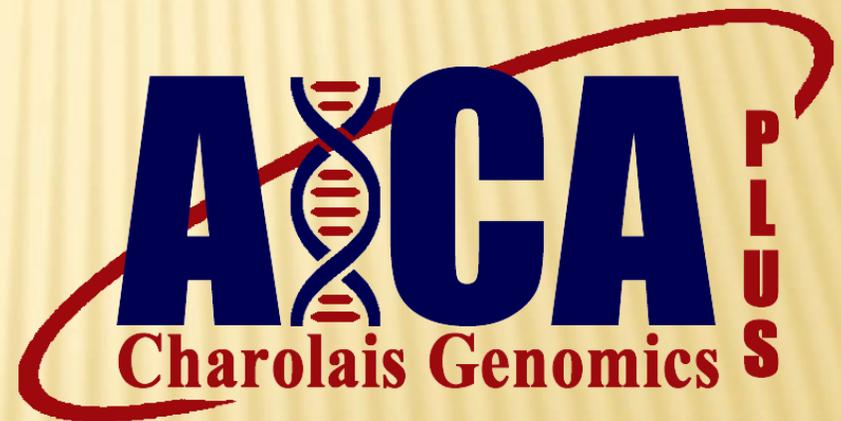
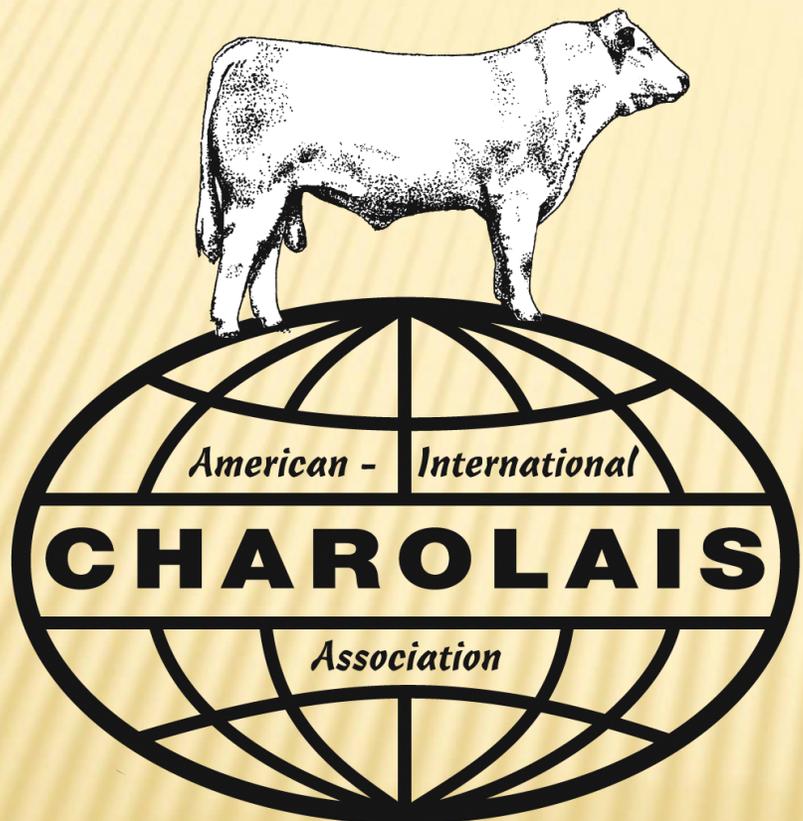


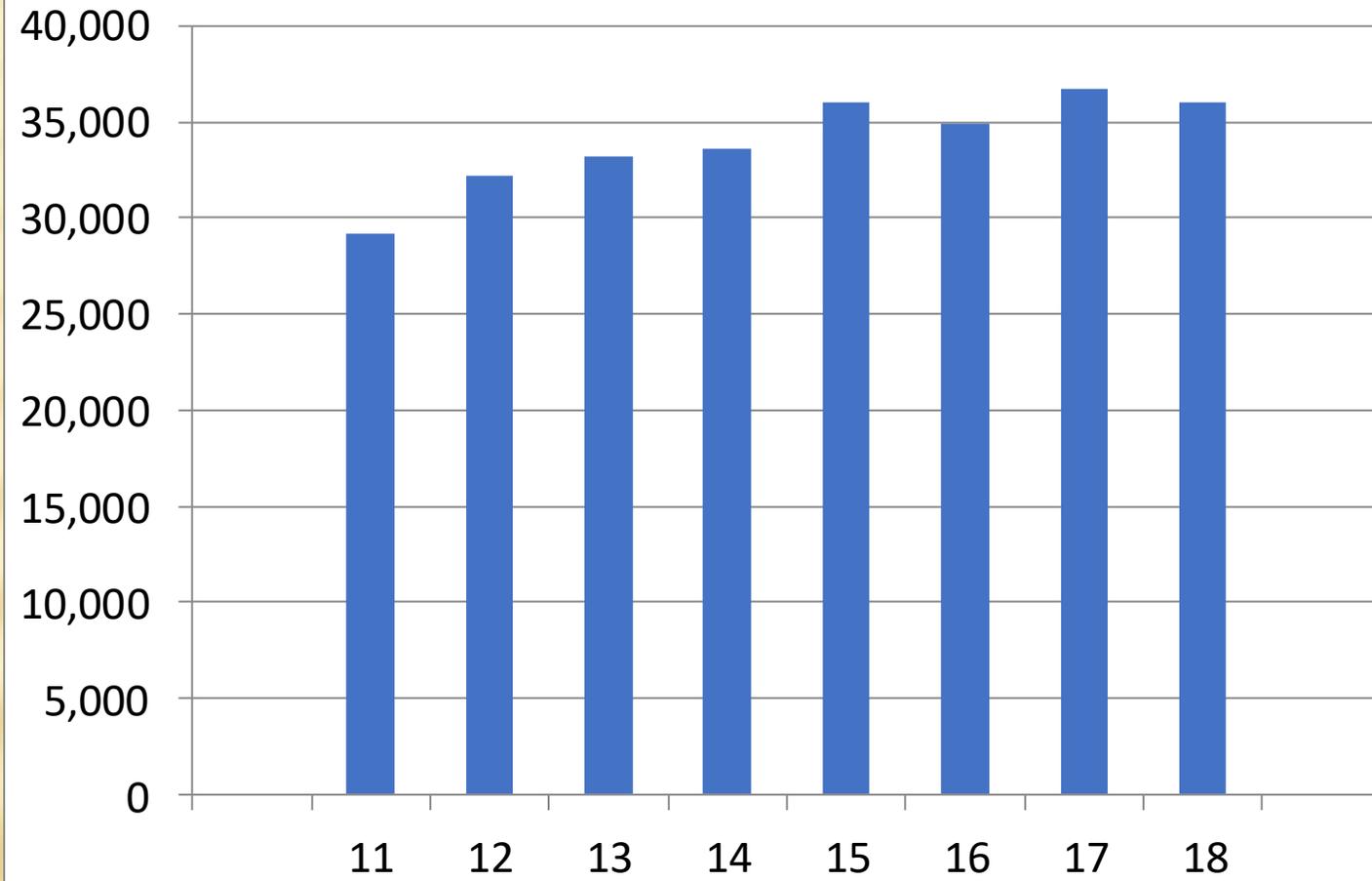
2019 WORLD CHAROLAIS TECHNICAL CONGRESS



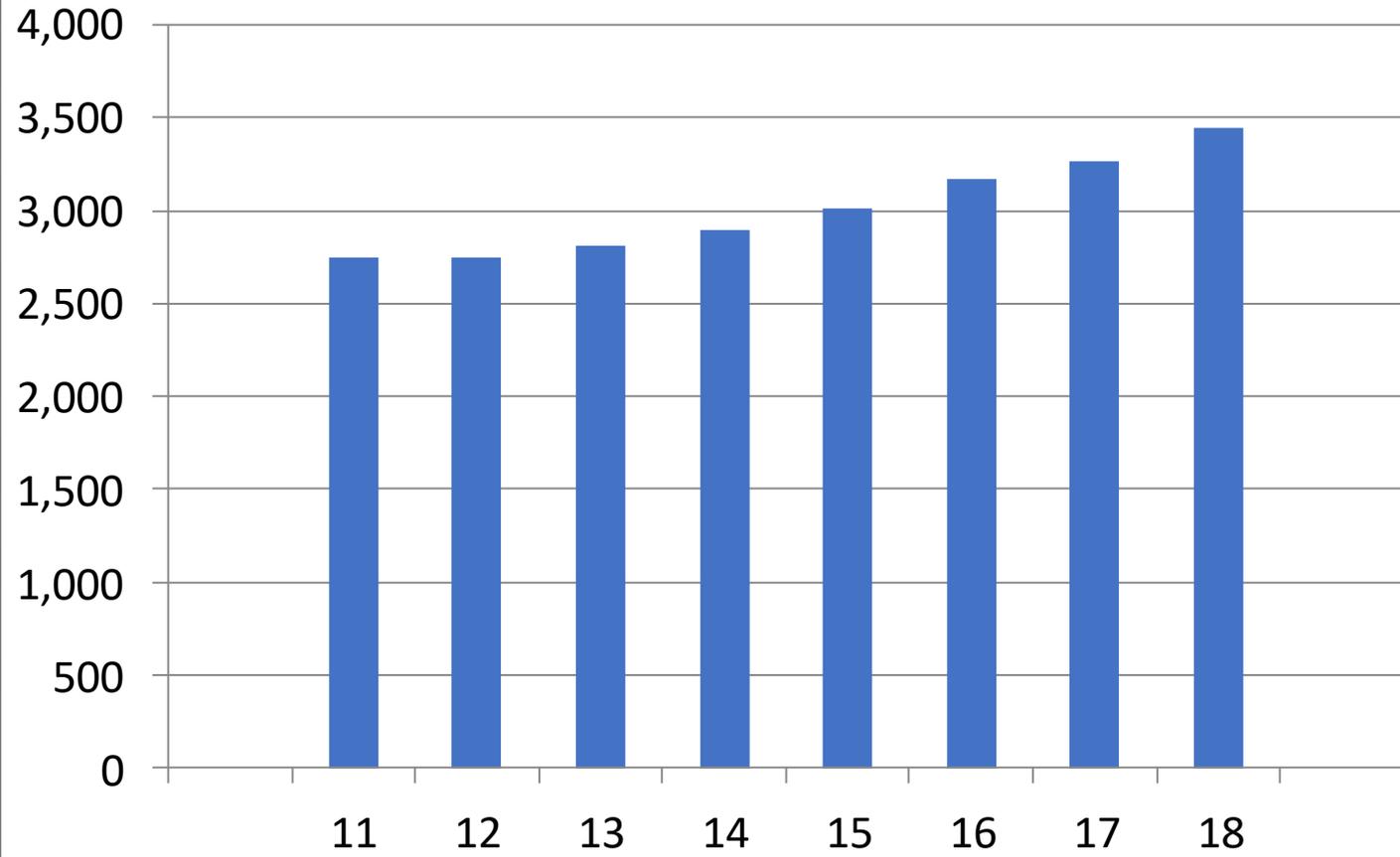
CHAROLAIS REGISTRATION CATEGORIES

	2018	2017
Charolais Purebred	34,037	34,534
Recorded Charolais	1,090	1,133
Percentage Charolais	457	519
Red Charolais	446	485
Charbray	9	12

Registration numbers



Membership



➤ 2015- AICA provides Genomically Enhanced Expected Progeny Differences (GE-EPD)

Utilized a multi-step approach based on calibration research

➤ Spring 2018 AICA National Cattle Evaluation (NCE) released EPD incorporating the use of single-step genomic evaluation.

Single-Step updates genomic information each time the evaluation is run utilizing all sources of information – Pedigree, performance, progeny data and genomic results.

AICA UTILIZES-

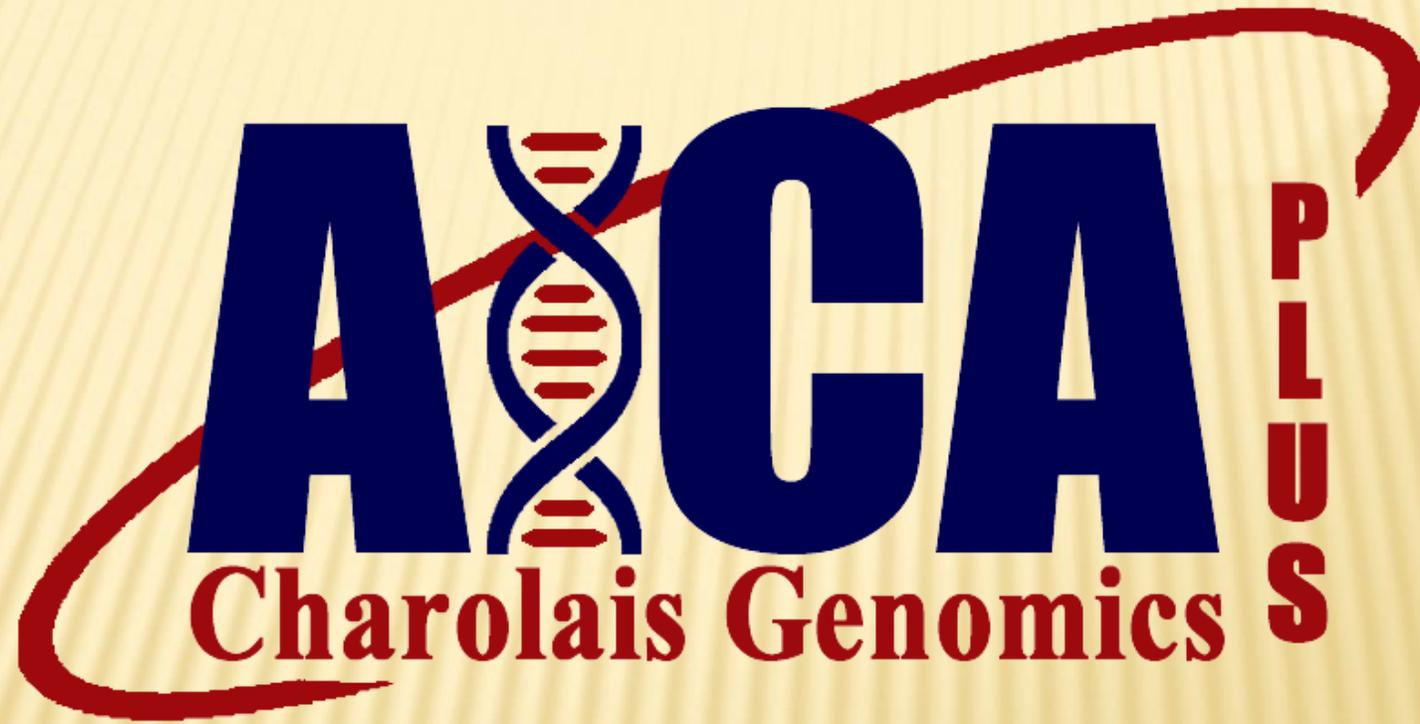


NEOGEN[®]

GGP Bovine 50K

- Detects gene markers that have the greatest influence on economically important traits and the most impact on the Key traits that cattle inherit from their parents.

Breeder Cost - \$25



ANCA

Charolais Genomics

PLUS

**Planned AICA Genetic Evaluation Updates
National Cattle Evaluation (NCE)**

Data Cutoff

Feb. 1st

April 1st

June 1st

August 1st

October 1st

December 1st

Publish Results

March 1st

May 1st

July 1st

September 1st

November 1st

January 1st

Data cutoff and NCE public release dates are approximate.

DNA tests can be run at any age.

Plan ahead for DNA testing results to be included into EPDs

NCE Genomic Counts

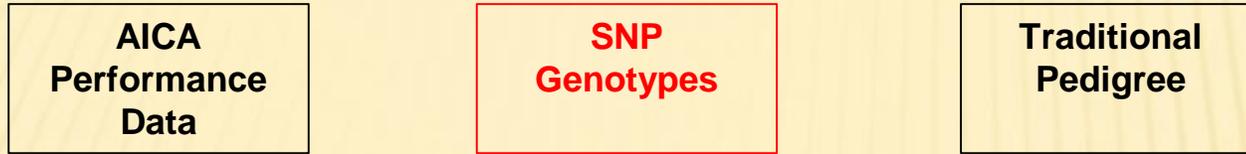
Single-Step Evaluation	Genotypes included
March 2019	5,094
January 2019	4,616
September 2018	4,061
May 2018	2,462
January 2018	1,945

NCE Performance Records Added (for March 2019)

Phenotypes	Records Added
CE Scores	985
Birth wt	5,753
Weaning wt	5,182
Yearling wt	2,589
Scrotal	380
Ultrasound	493

478 Genotypes were added

AICA Single-Step Genetic Evaluation



Genomic-Enhanced EPDs

Single-Step approach:

- Uses the 50K genotypes--- not mbv
- No calibration
- Incorporates Genomic Pedigree
- Evaluation update reflects DNA results

5' -A-T-C-G-A-T-T-3'

5' -A-T-C-T-A-T-T-3'

↑
SNP

AICA NCE Accuracy

DNA test

- No contemporary group weaning performance data
- No previous EPDs in NCE

	bw acc	ww acc	yw acc	milk acc
average	0.30	0.27	0.23	0.20
min	0.14	0.11	0.08	0.06
max	0.39	0.36	0.33	0.31

With
weights



Contemporary group performance data and DNA test

	bw acc	ww acc	yw acc	milk acc
average	0.41	0.33	0.28	0.20
min	0.30	0.24	0.17	0.13
max	0.44	0.37	0.36	0.28

AICA NCE Accuracy

No DNA test

Contemporary group performance data (no DNA)

	bw acc	ww acc	yw acc	milk acc
average	0.35	0.27	0.20	0.15
min	0.22	0.16	0.09	0.07
max	0.39	0.33	0.32	0.24

DNA added 

Contemporary group performance data AND DNA

	bw acc	ww acc	yw acc	milk acc
average	0.41	0.33	0.28	0.20
min	0.30	0.24	0.17	0.13
max	0.44	0.37	0.36	0.28

IMPACT OF GE-EPD

➤ TERMINAL SIRE INDEX

Blends BW, WW, YW, REA, HCW, MB, Fat and economic factors into one economically relevant index

➤ CHAROLAIS ADVANTAGE

Age and source verification program specific to Charolais influenced cattle

➤ UDDER QUALITY AND DOCILITY

NOTES

- A joint Research Genetic Evaluation is agreed upon between AICA and the Canadian Charolais Association, March 2019.
- Hosted Field Day “Pathway to Genomic Enhanced EPD”
- Subsidized initial collection of 50K genotype
- Funded GE-EPD
- Funded Single Step Evaluation
- Subsidizing Genotype Collection
- Funding 6 NCE in 2019
- Financial support, University of Missouri Sequencing Project
- Listening & Learning Industry Sessions