




CA Data Driven Approach to Sourcing Profit Focused Beef Bulls for Holstein Based Dairy Industry

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American Simmental Association**






Four-State Dairy Nutrition & Management Conference

A Data Driven Approach to Sourcing Profit Focused Beef Bulls for Holstein Based Dairy Industry

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SimGenetics
PROFIT THROUGH SCIENCE
www.simgenetics.com

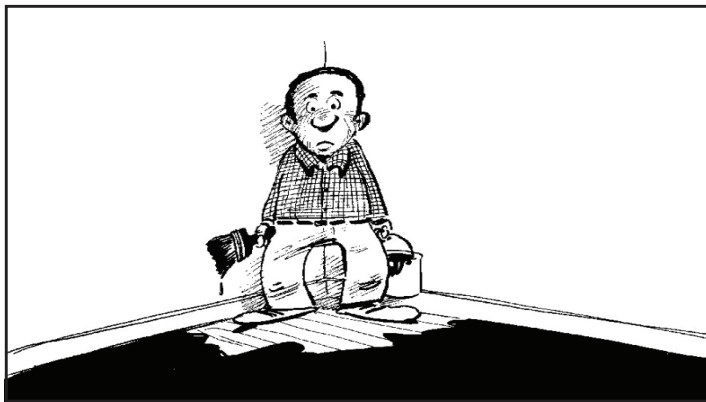
IGS International Genetic Solutions
www.internationalgeneticsolutions.com
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Transforming **FRUSTRATION** to *Leverage!*

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What is  International Genetic Solutions ?

- Collaboration of numerous associations and industry groups.
- Largest Beef Genetic Evaluation on the planet. (~**20,000,000 head**)
- Only Mega, Multi-Breed Evaluation in existence.
- Allows for direct comparison of cattle - regardless of breed type.
- No Breed bias.
- Most Importantly for this conversation...
Allows for genetic awareness of largest population in the beef business...
The Crossbred Terminal Beef Calf!

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IGS is a tech company

- Data-driven tools to empower serious producers and the industry
- The key – take billions of data points, remove the noise, and make genetic tools to add value.
 - EPDs and Indexes on any breed of cattle
 - EPDs and Indexes on commercial, crossbred cattle
 - IGS Feeder Profit Calculator
- Significant growth in non-IGS seedstock types
- Tremendous growth in commercial clients



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A little background...

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A simple look at semen sales numbers...

Excluding import numbers which are small and export numbers that don't directly impact US beef market.

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Combined Dairy Domestic Sales & Custom

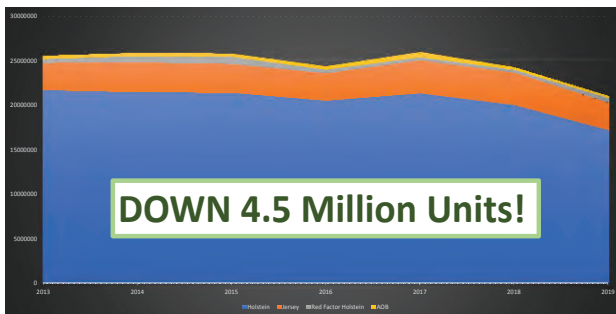
Total Dairy Semen (NAAB)

	2013	2014	2015	2016	2017	2018	2019	% Change
Holstein	21645443	21421445	21346838	20474167	21287608	19976218	17162554	-20.7105
Jersey	3048823	3333879	3243907	3072640	3703766	3630467	3074001	0.825827
Red Factor	416175	703441	782435	390038	343857	314176	500270	20.20664
AOB	401464	392582	391764	390462	609260	306804	262544	-34.6034
TOTAL	25511905	25851347	25764944	24327307	25944491	24227665	20999369	-17.688

NOTE: Dairy industry down 4,512,536 unit of semen.

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Combined Dairy Domestic Sales & Custom



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Combined Beef Domestic Sales & Custom

Total Beef Semen (Sales & Custom)

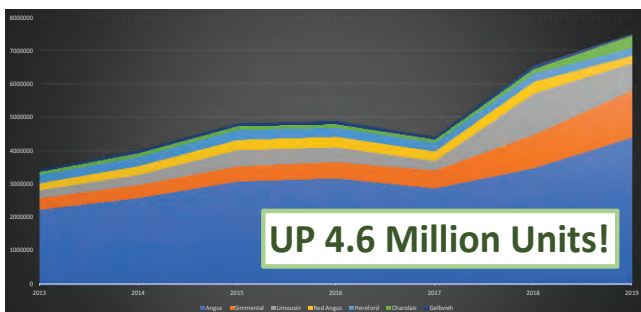
	2013	2014	2015	2016	2017	2018	2019	% Change
Angus	2241974	2595931	3090752	3180929	2881182	3489149	4411231	96.75656
Simmental	356369	386278	450136	493057	537386	996978	1412403	296.3316
Limousin	229878	299106	483099	434565	279856	1238743	807181	251.1345
Red Angus	207734	266282	308861	316277	291410	347441	228691	10.08838
Hereford	246881	271536	296837	274465	258375	249125	236462	-4.22025
Charolais	89880	119202	111198	103386	99619	136891	364647	305.7043
Gelbvieh	66091	78724	84933	98394	79792	110185	51484	-22.1013
AOB	932400	895105	889525	735164	810837	1142369	1438536	54.28314
TOTAL	4371207	4912164	5715341	5636237	5238457	7710881	8950635	104.7635

NOTE: Only three breeds beat the average % change.

NOTE: Beef semen units up 4,579,428.

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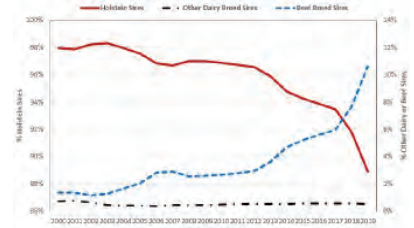
Combined Beef Domestic Sales & Custom



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Beef on Dairy

Figure 1: Trend in Breed of Service Sire for Insemination of Holsteins

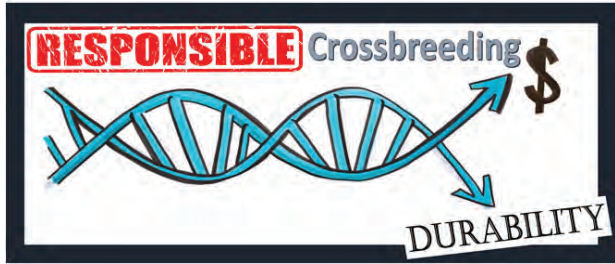


Canadian Dairy Network



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WHY?



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All the while...

- Despite struggles dairy cow numbers are growing (albeit slightly).
- USDA numbers show steady year over year increase. 9 million.
- 50% or more of beef semen presently goes into dairies.
- No clear increase in beef semen usage in beef business.
- ~ 3 units of semen/dairy cow/pregnancy.

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Beef breeds used in the beef x dairy model

Angus

- Large Supply
- Marbling Genetics
- High Growth
- Less REA
- High BF
- Large Frame Size



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Beef breeds used in the beef x dairy model

Charolais

- High REA
- High Growth
- High Retail Yield
- Less Marbling
- Large Frame Size
- Calf Color is Limiting



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Beef breeds used in the beef x dairy model

Limousin & LimFlex

- High REA
- High Cutability
- Moderate Growth/Size
- Lower Marbling
- Lower Growth
- Particularly Popular for Jersey



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Beef breeds used in the beef x dairy model

Simmental & SimAngus

- High REA & Cutability
- Moderate Size & Mod/High Growth
- More Marbling than LM or CH
- Have to avoid excessive white mark



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Semen purchase What are the producer's expectations

- Get them bred
- Fairly priced relative to the ROI
- Convenient, consistent, reliable quality and service
- Add more profit to the bottom line of the enterprise
- Outperform semen company competitors

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Reality – we've set the bar way too low.

Most have grown to accept:

- Cheap
- Easy
- Fertility

We can do more!

Dollars, convenience, and fertility are crucial. BUT, shouldn't that be a given??

You are buying semen to breed a cow after all.

Where is the value add?

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Adding a Profit Center to Dairy Business

- The BeefxDairy calf has become relatively commonplace.
- Too frequently, the beef sire has been a **byproduct** of other enterprises.
- This has resulted in some added value...
- However, also **wide variability in the true profit potential of BD calf.**
- Thus, buyers are still skeptical. This restrains their spend.
- **Data is needed** to provide decision support to ensure most profit focused BeefxDairy cross that is available.
- Need ongoing data feedback to refine and improve the model.

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Precision Agriculture – or lack thereof

- Beef on Dairy = "Vague on Vague"
- There is a distinct difference in the "beef" between Holstein & Jersey.
- First, we need to determine what is necessary to fit your cow base.
- Secondly, we have to be honest about what best complements.
- Excessive carcass length is a significant concern in Holsteins.
- Jerseys have greater marbling capacity than Holsteins.
- Calving ease, muscle conformation, dressing percent are problems in both.
- Two different approaches.
- The bulls appropriate in one may not be ideal for the other.

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Without data-driven tools
we aren't deciding
We are **Guessing!**



Let's study the
Beef X Holstein model...

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Step 1

- Late 2017/Early 2018
- IGS was asked to assist a group trying to solve the dilemma of identifying the appropriate Beef sire for Holstein operations.
- Group included:
 - Major packer (who provided carcass metrics)
 - Feedlots heavily vested in dairy cattle
 - Dairy Operators
 - Seedstock Producer
 - Various association group personnel
- Agreement that most important phenotypes were: MB, REA, Size/Growth, CE.

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I digress...

- Marbling
 - Economic import of intramuscular fat

\$28.15
Choice/Select Spread.

That is over \$250 difference on 900 lb carcass!

USDA National Daily Boxed Beef Cutout And Boxed Beef Cuts - Negotiated Afternoon
Agricultural Marketing Service
Livestock, Poultry, and Grain Market News

	Choice	Select
Current Cutout Values:	318.73	290.58
Change from prior day:	(22.42)	(26.35)
Choice/Select spread:	28.15	

Based on negotiated prices and volume of boxed beef cuts delivered within 0-21 days and on average industry cutting yields reflect U.S. dollars per 100 pounds.

Choice / Prime Combined

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I digress...

- Marbling
 - Economic import of intramuscular fat
 - Jersey vs. Holstein

Jersey carcasses have an advantage of 20 degrees of marbling over Holstein carcasses.

Dr. Bob Weaber, KSU
NALF & IGS data

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I digress...

- Marbling
 - Economic import of intramuscular fat
 - Jersey vs. Holstein
- REA
 - Very Important
 - Not so much

Holstein carcasses have 2/3 of inch advantage over Jersey carcasses.

Dr. Bob Weaber, KSU
NALF & IGS data

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I digress...

- Marbling
 - Economic import of intramuscular fat
 - Jersey vs. Holstein
- REA
 - Very Important
 - Not so much
- Size/Growth
 - AKA – carcass length. Not traditionally a concern in beef.
 - Jersey vs. Holstein. How does this impact or limit cattle feeder?

The cattle feeder's success/failure and confidence in the product is the key to the success and viability of "Beef on Dairy" efforts.

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- CE
 - Dystocia
 - Production impact

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 - Feedlots heavily vested in dairy cattle
 - Dairy Operators
 - Seedstock Producer
 - Various association group personnel
- Agreement that most important phenotypes were: MB, REA, Size/Growth, CE.
- Queried the entire IGS database to provide a view of what breed types fit.

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And the answer was clear...

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Step 2

- May 2018
- Massive change to the beef landscape.
- IGS Multi-Breed Genetic Evaluation *powered by BOLT*
- Allowed for better incorporation of genomic knowledge through single-step.
- Maintain (and enhanced) the multi-breed component of IGS.
- Revisited the Beef on Dairy question.
- Same Answer was delivered...



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The Answer

- Searched IGS database (and the second largest beef database) for sires in:
 - Top 25% REA, MARB, CE, Mid level YW & CW
- Results:
 - 3.125% were straight British
 - 6.25% were straight Continental
 - 90.6% were Composite bulls that were a mix of British & Continental
- Of the list of Composite Bulls – 89.7% were SimAngus.
- So roughly 80% of all bulls that populated were SimAngus.

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Trait	Simmental Rank vs Major Continental Breeds	Angus/Red Angus Rank vs Major British Breeds
Marbling Score	First	Second
Carcass Weight	First	First
Lbs of Retail Product	Second	First
Weight Gain/Feed Efficiency	First	Second
Weaning Weight	Second	First
Post Weaning Gain	Second	Second
Shear Force	First	First

Across-breed EPD Table, GPE Report 22, MARC, USDA

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So where is the BEEF – with Holstein?

- Clearly Continental based cattle are seen as the growth opportunity in the beef on Holstein sector.
- The data is clear that no singular breed type ideally fills this void.
- The data is also clear that composites are most appropriate.
- On the composite front, SimAngus are the largest group that genetically complement Holstein terminal genetics. But, definitely not the only group.

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But...

Limitations exist to a threshold approach.
We need something more sophisticated.

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Indexing is the way to go!

Beef on Holstein Index
Starting with largest population – SimAngus.

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Starts with the...



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IGS Feeder Profit Calculator -Highlights

- Highlights known sires & management approach (*wean & vac*)
- Capitalize on cow herd genetic awareness
- Leverages power of largest database in industry
- USDA MARC & IGS data for breed differences
- Robust science team
- **No cost to producers!** [HOW?](#)



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The How...

- The SimAngus x Holstein (SAXH) index uses the IGS Feeder Profit Calculator™, the industry leader in feeder cattle evaluation, as the foundation for this effort.
- The results from the FPC are then adjusted for the unique economic situations relevant to Holstein cattle, namely, the need for added calving ease, muscle conformation, grading ability and sensitivity to carcass length.

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Using the FPC as foundation for the SAXH Index

- All homozygous polled & homozygous black 3/8 to 3/4 SimAngus bulls.
- FPC ran on a Holstein cow base with high health calves.
- Provided a profit prediction from all of those potential matings.
- Then added curvilinear adjustments to the FPC results for:
 - REA
 - Body Length
 - Calving Ease
- Utilized two separate curvilinear approaches.
- Sires had to be within top 1000 for both approaches to be considered.

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HOLSIm Objectives...

- To provide additional revenue to dairy producers through the production of value-added terminal calves.
- To offer new marketing avenues for progressive beef seedstock operations.
- To offer a consistent supply of high-quality calves better situated to capture market premiums.

**AND MORE
INDEXING WORK
TO COME!**

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Interesting side note...

- Bulls that populate on the HOLSIm index (e.g. look more appropriate in a Beef on Holstein model) tend to be high indexing bulls on a Whole Life Cycle index (All Purpose Index).
- Given the homogeneity of the traditional beef business, one could make a very sound argument that high API bulls are what is actually needed by overwhelming percent of beef operations. Along with strengths of responsible crossbreeding and heterosis.
- Semen companies could have the bulls that can “do both”. Be a data appropriate match for Holstein genetics and add profit to their British based beef audience.

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Opportunities associated with BeefxDairy Model

- Consistency of product
- Relatively known and consistent production costs
- Less impacted by land prices than traditional beef model
- Adoption of traceability and data tracking methodologies.
- Ability to choose strictly for terminally minded traits. No concern for maternal merit – clarity of genetic selection.
- R&D feedback loop and novel traits (fertility).

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Key difference to the SimAngus X Holstein model

It takes advantage of the Premiums and Discounts presently built into the beef business.

Does not require building a complicated Rube Goldberg machine to add profit. It places these carcasses squarely at the center of the beef industry. Not on the periphery!

Simply build better cattle and then retain ownership.

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Want a better understanding?
Want to maximize your return?

Become a cattle feeder!

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Courage to consider the new

- The right kind of partners
- Profit-minded genetics
- The right kind of marketing
- The right kind of tools



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An advertisement for International Genetic Solutions (IGS). On the left, a man in a light blue button-down shirt and a tan cowboy hat looks off to the side. On the right, there is a white box with text. At the top of the box is the IGS logo. Below it, the text reads: "International Genetic Solutions believes in data for all. Regardless of breed, location or herd size, you deserve the best – better information to make better decisions. Decisions that rely on good science and the industry's largest multi-breed cattle evaluation. See why a growing number of the nation's cattle breed associations, commercial producers and seedstock breeders are joining together through IGS in the pursuit of better cattle. IGS STAND TOGETHER 406.265.3033 • InternationalGeneticSolutions.com".

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QUALITY & SAFETY: IT'S ALL BY DESIGN.

Kemin knows chromium.

Our commitment to chromium promises to provide you with a high-quality, safe and efficacious product to help your animals reach their optimal performance while boosting your bottom line.

KemTRACE®
CHROMIUM
Essential to you and your operation.

**THE CHROMIUM LEADER
FOR 20+ YEARS**

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