

December Evaluations Surface High New Genomic Sires

By David Selner

The December genetic release was noteworthy by not having any major changes in genetic evaluations and for having numerous new genomic sires added to the top of the index lists. Several prominent sires added more progeny information to their genetic estimates and solidified their previous rankings.

HIGH NEW GENOMIC SIRES

The new genomic release sires add high credentials with modern pedigrees. The new number 1 available GTPI sire at +2543 is Stantons Main Event from Genervations. He is a Mogul son from a Super daughter out of the Wabash Way family. Coming in as the new number 2 sire is River Bridge CO-OP Troy from Genex with a GTPI of +2511. Troy is also a Mogul from a Freddie. The new #4 GTPI sire is Clear Echo Lexor Racer from Accelerated Genetics. He is a Lexor son from an Observer daughter and has a GTPI of +2482. Appearing at number 6, +2467 GTPI, is CO-OP Mogul Lawman from Genex. Lawman is a Mogul out of a Man O Man. Jetstream Genetics has the new #7 in Mr. Moviestar Mardi Gras. This Mogul son out of a Planet is +2467. The Semex Alliance has the number 8 new GTPI sire +2465 with L-L-M Dairy President. He is a Numero Uno son out of a Million daughter. S-S-I Mogul Reflector from Select Sires arrives at number 9 +2459. Reflector is a Mogul son out of a Super daughter. The ABS Global sire Vision Gen Alright is number 10 at +2459 GTPI. Alright is a Shamrock son from a Freddie. Select Sires has the new number 11 genomic sire at +2455 with Rocky Mountain Rebel, a Shamrock son from a Baxter daughter. These high ranking sires will see usage in breeding programs around the world.

HIGH NEW PROVEN SIRES

The official TOP 100 list from Holstein USA also saw several new additions. The new number 7 sire at +2227 is Ladys Manor PL Shamrock from Select Sires. This former genomic superstar now has 140 daughters in 61 herds in his production proof and remained at a high level. Shamrock is one of the numerous Planet sons to enter into proven sire lineups. Shamrock daughters have moderate frames with strongly attached udders. The new number 8 sire is De-Su Gulf from Select Sires at +2214 TPI. Gulf is a Bolton out of a Shottle that sires upstanding daughters with superior udders. Unbelievably snug udders with strong fore and rear attachments. Another former genomic leader for Alta Genetics comes in at number 9 Regancrest Altaiota +2214. This Oman son from an Ito daughter now has over 3800 daughters in 1376 herds. He offers high percentage components and a very high level of +80 pounds of Fat. Iota daughters are tall & framey with wide rumps and excellent rear udders. The

new number 16 sire comes from Genex at +2157. He is a Planet from a Ramos named Kings Ransom Erdman CRI-ET. Erdman is another high component sire with high Productive Life (+7.7) that is also recommended for use on heifers. Finally the new number 19 is Fustead Jetstream Soto from ABS Global. He is a Jet Stream son from a Shottle dam that sires tall and wide rumped daughters. He is an all-round type improver with a no holes breeding pattern. The previous sires on the top of the 100 TPI list remained solid and should offer pleasing genetics for the future.

Visiting with numerous readers of the Holstein World has sharpened our focus on what they want to know about the latest genetic evaluations. Certainly new sires are high on their list, but they also want to know about the latest changes to the genetic evaluations and how these evaluations stand the test of time in terms of accuracy. Previous genetic evaluations were very time tested and everyone had a great deal of faith in their accuracy. The advent of genomics has caused some doubt among many as to the accuracy of this new science. All of the genetic studies that have been done thus far indicate that genomic evaluations do work and are better than previous pedigree only evaluations. When you look at a large population, genomic information can help you sort out the top from the bottom of the population. Currently there is a commercial company that is using this genomic technology to provide that type of service to dairymen. However the majority of the profit and passion in the industry is focused on the very top end of the population. Does genomic technology do a better job of picking the winners and losers in the quest for high end genetics? Do the underlying principles of population genetic selection work equally as well at the extreme top end of the population? For people in the genetic business these are the only animals that count.

GENETIC STUDIES

To that purpose the Holstein World has done several studies over the last four years to shed more light on this top end breeding population and the changes that have occurred in their evaluations. Early studies showed that even though the vast majority of sires in the population showed remarkable stability, the top end genomic sires when they achieved proven sire status were over evaluated as young bulls by about 200 points in TPI and 0.50 PTAT. These studies have been redone at the request of many breeders and still show that the early genomic proofs were overly generous on young bulls. This has led several breeding advisors to caution breeders to make sure that they use even higher levels of genomic sires so they can guard against this over-estimate bias. This seems prudent but will it really accomplish the task of avoiding having daughters from your best cows from a lower proven sire?

Let's look at the available high genomic sires of January 2010 that now have milking daughter information. Remember these were the bulls that were selected by the AI studs to actively market because of their genetic potential. How many top sires are still on top and are there some sires that were ranked lower but now are high?

Table 1

<u>Sire</u>	<u>Jan 10 TPI</u>	<u>Rank</u>	<u>Dec 13 TPI</u>	<u>Rank</u>
Coyne Farms Dorcy	2288	13	2267	1
Co-op Bosside Massey	2104	101	2253	2
Lotta Hill Shottle 41	2304	11	2228	3
Co-op Style Oman Just	2132	74	2179	4
Springway Blvr Chase	2120	91	2119	5
Mel Crest Altarazor	2131	77	2116	6
Coyne Farms Bolton Dom	1926	226	2114	7
Mr Boliver Enid	2125	83	2109	8
Foxberry Bax McNuggets	2142	86	2106	9
Mountfield Altaexacter	2172	51	2099	10
Crockett Acres Bol Bevin	2007	178	2092	11
Co-op Jetstream Army	1981	195	2091	12
Welcome Bol Latham	2166	53	2082	13
Bomaz AltaMarauder	2202	39	2074	14
Brigeen Russell	2237	23	2067	15
Sildahl Mr Mudd	2193	44	2065	16
Wa-Del Surefire	2051	143	2051	17
Wilra Boliver Sequoia	2032	157	2049	18
Cabernet Bolton Suntan	1904	240	2046	19
Lars Acres Shot Trigger	2385	3	2043	20

Only 3 of the top 20 sires from January 2010 are in the top 20 for December 2013. Of today's top 20, seven were not in the top 100 in January 2010 and 2 sires were not even in the top 200. So just selecting only top end genomic sires you would have missed some of the top genetics available. Adding daughter information and DNA data on related bloodlines does cause some re-ranking of sires as they gain more information. Just selecting from a small portion of the top end genomic sires of today does not guarantee outstanding results for the future. So the old adage about not putting all your eggs in one basket and using groups of sires is still a very valid and important rule that should be followed when using genomic sires.

This study brings up another question that has been often asked, "Are these high genomic sires really better than the best proven sires?"

Table 2 Top Genomic Sires of January 2010

Sire	Jan 10 <u>NM\$</u>	Jan 10 <u>GTPI</u>	Dec 13 <u>NM\$</u>	Dec 13 <u>GTPI</u>
Rosylane LLC Altagr8m8	810	2395	531	1980
Wabash Elite	745	2390	397	2012
Lars Acres Shot Trigger	744	2385	558	2043
Ronlee Toystory Domain	729	2384	308	1858
Dream Prairie Shadow Boxer	725	2366	338	1853
Mr Regelcreek Shot Alan	728	2342	452	1945
Mr Regelcreek Shot Al	755	2327	478	1966
Pine Tree Shottle Marco	744	2321	433	1924
Laeschway Jet Bowser	719	2319	394	1836
Klassic Big Time	656	2313	298	1900
Top 10 Average	735	2354	419	1932
All 312 Average	486	2013	320	1810

Table 3 Top 100 TPI Proven Sires of January 2010

Sire	Jan 10 <u>NM\$</u>	Jan 10 <u>GTPI</u>	Dec 13 <u>NM\$</u>	Dec 13 <u>GTPI</u>
Picston Shottle	729	2374	401	1951
Badger Bluff Fanny Freddie	824	2313	747	2249
Charlesdale Superstition	670	2224	614	2133
Bosside AltaRoss	644	2186	416	1859
Long Langs Oman Oman	610	2155	595	2189
O Bee Manfred Justice	729	2130	614	1973
Ensenada Taboo Planet	659	2129	668	2107
Co-op Oman Logan	642	2116	530	2017
Schillview Garrett	589	2089	609	2117
Co-op Oman Cavana	620	2055	558	1972
Top 10 Average	671	2177	575	2057
Top 100 Average		1925		1878

This analysis reveals that even though the genomic sires showed an almost 200 point advantage over the proven sires of the same time, today when all have milking daughters they were not superior to the top proven sires. The top 312 genomic sires did not equal the top 100 proven sires of their day. Then compare that to today's population where there are over 400 genomic sires higher than the top TPI proven sire. These figures indicate that proven sires can still be an important part of any breeding program.

It is also interesting to follow the trends of the top sires over time. High ranking genomic sires should be displacing the older proven sires from the tops of rankings at a much faster pace and a higher level as we make genetic progress. Does the huge influx of previously top genomic sires now gaining daughter information actually surpass the top proven sires over time and raise the very best of the TOP 100 TPI list?

Table 4 Top Sire Genetic Values

<u>Date</u>	<u>Range Top 100 Genomic</u>	<u>Range Top 100 Proven Sire</u>
January 2010	2105 - 2395	1825 - 2374
August 2010	2110 - 2359	1840 - 2258
December 2010	2122 - 2450	1860 - 2222
December 2011	2295 - 2621	1910 - 2217
December 2012	2311 - 2530	1979 - 2295
August 2013	2341 - 2546	2019 - 2273
December 2013	2365 - 2543	2033 - 2267

There is advancement in the very best genomic sires over the last 4 years, but surprisingly the highest proven sire has not risen appreciably. Even though thousands of sires have received milking daughter information since January 2010 not many of these sires have jumped to the top of the TPI list. Remember that these changes are also happening in the female population. Since the levels of high genomic females are far superior to the top young genomic sires there maybe even more re-ranking with the top female listings.

As we follow the progress of genetic evaluations over time it will be interesting to see if these trends change as we gain more genomic information. The Holstein World will continue to provide as much information as possible to help you select the best genetics for your herd.

Industry Genetic Conference

In February the US genetic industry will have a conference to discuss the future direction of genetic research and potential future models for genetic evaluations. The representatives of AI studs and breed associations along with university & industry researchers will be discussing the latest information on various genetic topics. Please inform you Holstein Board members of what the topics you feel are important for the future genetic direction of the Holstein breed. Remember if you fail to voice your opinion you will have no impact on what will be decided. The decisions that come out of this conference will be described in future issues of the Holstein World.