



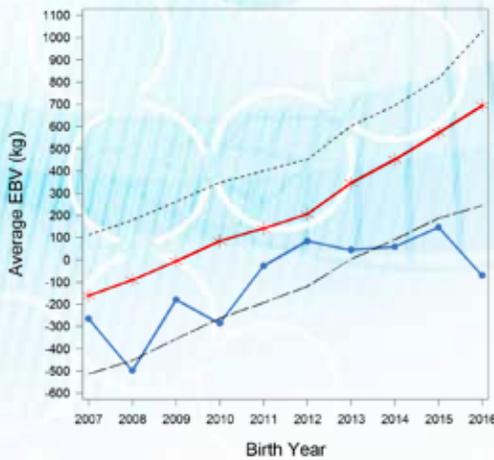
## GENETICS 101

# NATURE VS NURTURE: WHERE IS THE BOTTLENECK ON YOUR FARM?

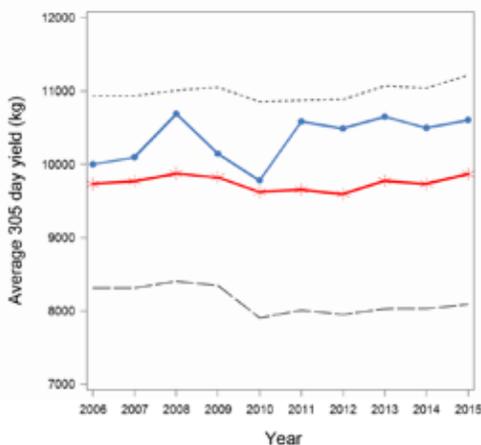
### “Sunny Acres” Milk Trends

- Herd-avg
- National-avg
- ⋯⋯⋯ 90th percentile
- — — 10th percentile

Genetic Milk (Genotype)



305 Day Milk (Phenotype)



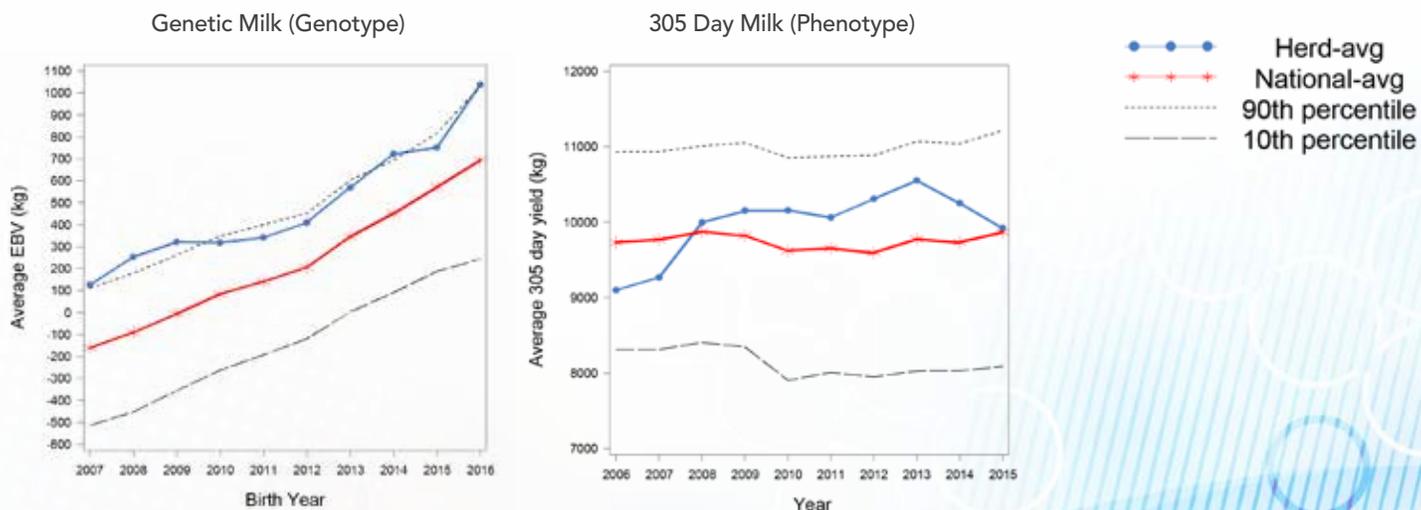
In a herd that is exceeding national averages for production, is management the key factor for herd performance, or is the result a reflection of superior genetics? The answer? It could be either, or a balanced combination of both factors. Every farm situation is different; the strengths and weaknesses vary significantly.

Holstein Canada Herd Trend reports can help shed light on the answer to the question above. For many traits, both the genetic trend (genotype) and the performance trend (phenotype) are graphed. A side by side comparison of the two graphs reveals a lot about the herd.

Take for instance, “Sunny Acres\*” milk trends. The top graph on the left shows the average genetic milk potential in the herd by birth year. Genetic improvement for this specific trait in the Sunny Acres herd has not increased at the same rate as the national rate of improvement. In fact, the farm has dropped below the 10th percentile of Canadian herds ranked by the genetic Milk trait. But on the bottom left, the actual herd average 305 day milk yield shows that on-farm milk performance for Sunny Acres is well above average – especially in recent years. The farm performance exceeds what would be expected based on its genetics. Therefore, it is not genetics but rather management that is facilitating the milking performance of the herd. The genetics seem to be the bottleneck. If Sunny Acres placed stronger emphasis on genetic production traits in their breeding strategy, any increased genetic potential could be realized and result in higher milk yield performance, given the strength of the management on farm.

# “Mistyview” Milk Trends

In another herd example, “Mistyview\*” has maintained their 90th percentile rank amongst Canadian herds for genetic milk potential over the past 10 years. But when it comes to milk in the tank, the Mistyview herd is not yielding what would be expected of their superior genetics. The trends suggest that the bottleneck is related to environment. If deciding between investing more resources into genetics or farm management, Mistyview would see higher returns on investment from enhanced management that positively affects the herd environment. Currently the herd is not meeting their genetic potential, so increasing that potential more wouldn't make a marked difference in performance until the environment improved. At the same time, Mistyview shouldn't completely ignore genetics; any increase OR decrease in genetic merit does get passed to successive generations and affects long term genetic potential.



There are countless factors that affect your herd's profitability, tools to help you meet your goals, and ways to identify where you may want to focus your resources for the greatest return on investment. Analysis of Holstein Canada Herd Trend reports allows producers to assess whether it is their on-farm environment, or their herd's genetic merit, that is currently providing the most benefit to the bottom line, and to see what is limiting it. Herd Trend reports are available online through your web account.

\*Herd names have been changed.

## Update to Herd Trend Reports

Do you classify? If so, check out your herd's updated Herd Trend Report available online in your Member Login account. Make sure to have a look at the newly added genetic trends for:

- Herd Life
- Daughter Calving Ability
- Calving Ability
- Daughter Fertility

These new trends are based on genetic trends, not actual (phenotypic) trends. Keep an eye out for the August Herd Trend Reports for some additional new formatting and updates.

