

# ImProving Herds

## – summary of findings

IMPROVING  
HERDS

**The ImProving Herds project brought together world-class experts in a dairy industry collaboration that aimed to turn complex science into simple, data-driven decisions to deliver profits to farmers.**

The project involved four modules of work that investigated:

1. The financial contribution of genetics to dairy businesses.
2. The value of genotyping heifers to the dairy businesses.
3. The value of herd testing to dairy businesses.
4. The contribution of genetics to reducing dairy's environmental footprint.

The project showed that making decisions based on Australian Breeding Values (ABVs) and data pays.

### Contribution of genetics to dairy businesses

At the core of the ImProving Herds project were 34 inspiring focus farms. For the 27 'Genetics Focus Farms,' the emphasis was on demonstrating the financial impact of the use of higher genetic merit bulls, and from genotyping heifers. For the seven 'Herd Test Focus Farms,' the emphasis was on the impact of herd testing on the farm business. We are immensely grateful to all the ImProving Herds focus farmers.

The project has shown that compared to their herd contemporaries, cows with a high Balanced Performance Index (BPI) have higher margins over feed and herd costs. On average, the top 25% of cows (based on BPI) have a \$300/cow/year greater margin over feed and herd costs than the bottom 25%. The analysis drew upon more than 10 years of financial and herd data on 7,700 lactations from 2,600 cows. The top 25% of cows produced 88kg more milk solids per cow per year and lasted on average eight months longer. The additional feed demands of high BPI cows were easily recouped through additional milk income.

### Genotyping heifers

Genotyping of heifer calves is increasing in popularity in many countries as a tool to:

- help choose replacements based on ABV(g)s
- improve mating decisions by using high value (sexed) semen for selected animals
- reduce errors in parentage assignment.

The ImProving Herds project evaluated the relationship between pre-calving ABV(g)s and first lactation production records in the Genetic Focus Farms. The results showed that there was a strong relationship between ABV(g)s and production records. In fact, the relationship is very similar to published national mean reliabilities for equivalent traits.

After accounting for the cost of genotyping, we have calculated that the benefit of picking the top 50% of replacements based on genomic BPI is typically worth about \$40/head more than using parent average.

### Herd testing

Seven Herd Test Focus Farms went under the microscope for herd-testing and shared their experiences with the ImProving Herds team. Six of the seven decided to continue herd-testing after the project was complete. All used the herd-test information in decision making, with four saying that herd-test data was especially valuable to help them respond to high pressure events. After a short time, the seventh farm, who had discontinued herd-testing at the end of the project, started back up again because they found they missed the data and couldn't make the management decisions they wanted to.

### Reducing dairy's environmental footprint

Assessing the impact of genetic improvement of dairy cattle on the environment was one of the activities of ImProving Herds. Selecting for high BPI leads to a reduction in greenhouse gas emissions because high BPI cows are more efficient producers and live longer, which leads to lower greenhouse gas emissions per unit of product. Even though per cow greenhouse gas emissions are increasing (as milk volumes and feed intake increase), the rate of increase is slower for BPI than its predecessor Australian Profit Ranking (APR), which is partly attributable to having the Feed Saved ABV included in the BPI.

ImProving Herds was a collaboration of the Gardiner Dairy Foundation, Dairy Australia, the Victorian Government, DataGene, Holstein Australia and the National Herd Improvement Association of Australia.

**IMPROVING  
HERDS**

**\$300 more  
per cow  
per year**

ImProving Herds found that, on average, the top 25% of cows in a herd (based on BPI) produce a margin over feed and herd costs of \$300 more than the bottom 25%.

The findings hold across dairying regions and feeding systems.

Analysis drew on 10 years of financial and herd data from real Australian dairy farms and included 7,700 lactations from 2,600 cows.

**The message is clear:  
The daughters of high BPI bulls perform better under Australian conditions.**

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FOUNDATION**

**AGRICULTURE VICTORIA**

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Australia**  
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**DataGene**  
Solutions for Herd Development

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