

## Key messages

- Data accuracy and completeness is important to the Australian dairy industry
- Australian Breeding Values, national production statistics and research data produced from industry data are relied upon to make good industry and farm-level decisions.
- Farmers, herd recording organisations and ADHIS all have a role to play in improving data

## Data – a national resource

The Australian dairy industry uses data at many levels to provide advice to farmers and its many stakeholders. Farmers, herd recording centres and ADHIS through its role as manager of the genetic evaluation database share responsibility for ensuring the accuracy and completeness of data.

The ADHIS database stores information collected through herd recording as demonstrated in Figure 1.

- ADHIS uses the information in its calculation of Australian Breeding Values (ABVs), preparation of national production statistics and export heifer information.
- Herd recording centres use the data to produce reports after each herd test to aid farmers in making decisions about individual cows, improving their herd and managing their farm business.
- Research and Development projects use ADHIS data to support farmers to manage on-farm issues like mastitis and fertility and to investigate options to improve ABVs.

## Data used to calculate ABVs

ADHIS uses information supplied by herd recording centres and breed societies to calculate ABVs.

Data is scrutinised to ensure its suitability for the purpose of genetic evaluation. The rules used to be included in ABVs are appropriate for the specific task of estimating the genetic merit of cows and bulls for various traits.

Bulls used in Artificial Insemination (NASIS bulls) are included in the ABV analysis. In addition, natural bulls are included if they have a known breed and have at least two relatives with ABVs.

Cows with data that passes quality assurance checks are included in the genetic evaluation. In particular, a cow must have:

- lactation records in an Australian herd recording system
- a unique national ID
- a valid birth date and breed code
- a known sire that has also been given an ABV

Some cow lactation information may not be used in calculating an ABV because of:

- abnormally high or low lactation performance
- lactations commencing at less than 18 months or calving at more than 20 years of age
- lactations that are too close to another or overlap

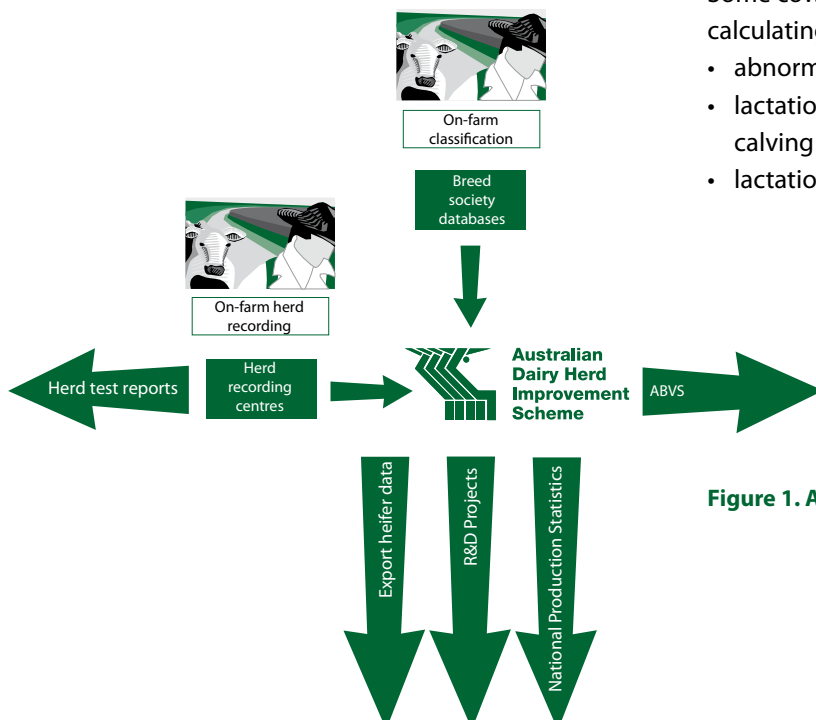


Figure 1. ADHIS data flow

## Improving data quality for ABVs

The reliability of ABVs improves as data quality and quantity increases. For example, a considerable increase in data used for genetic evaluation would occur if all herd recorded animals had a valid sire ID recorded.

At a minimum, the following details on each animal should be recorded:

- Calf details, including herd recording ID, date of birth, and breed
- Dam and sire – double check the Bull ID is correct
- Calving ease
- Mating dates and sires
- Workabilities on two year old heifers
- Health events such as cases of mastitis and lameness



## Data for production statistics

ADHIS uses information supplied by herd recording centres to produce national production statistics. In some cases, data received by ADHIS does not conform to the standard required for the national statistics and so the information is excluded, for example:

- There is no record that the cow's lactation has been terminated and there are no 305-day milk, fat and protein yields.
- There is not sufficient test day data present to calculate lactation yield with sufficient accuracy. For example, the first test was more than 100 days post-calving or two tests were more than 150 days apart.
- The lactation length was less than 120 days.
- The herd recording centre has excluded the data. For example, a collection error may have occurred.
- There is an invalid yield, such as a missing standard milk yield or the yield exceeds 20,000 L in 305 days.

In the 2007/2008 national production averages, 73% of herd recorded cows are included in the statistics.

Figure 2 identifies the percentage of cows excluded and reasons for exclusion from the national production averages.

The predominant reason cows are excluded in production statistics is because their lactation is not terminated.

### More data = better statistics

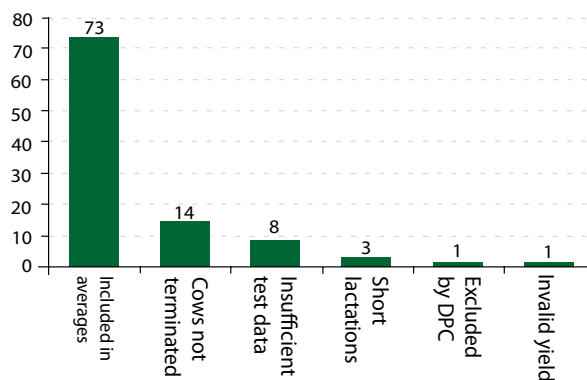


Figure 2: Percentage cows included and excluded from National Production Statistics 07/08

## Improving data for production statistics

National production statistics are based on lactation yields in a specific dairy season, for example 1 July 2007 – 30 June 2008. It is a 'snapshot in time'. Therefore, the data rules remain consistent so that an accurate picture of trends across many years can occur.

Improvements in production statistics data can be achieved by:

- maintaining individual identification for each cow in a herd, including date of birth, breed and sire ID.
- accurately recording calving and termination dates.

Continuous improvement in the quality and quantity of data collected is a benefit to farmers and industry. For example, improvements in the national production statistics would occur if more lactation termination information was collected.

## Conclusion

ADHIS aims to provide efficient management of Australia's herd improvement data system and services. It works with Herd Recording Centres to improve data accuracy and completeness and is seeks to improve linkages between data sources and the ADHIS database.

Farmers, herd recording centres and industry are all stakeholders and as such have a role to play to ensure a quality data source from which quality decisions can be made.

ADHIS is an Australian Dairyfarmers Ltd (ADF) initiative that is backed by dairy farmers through their Dairy Service Levy and government funds.

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