

Precision dairy technology

Walkover weigh scale systems

Case study:

Mark Billing, Colac, Victoria

Mark Billing's family has been milking at Craiglands Dairy, near Colac, Victoria, since 1928. The dairy farm now runs about 450 cows on a 280-hectare dryland milking platform. Summer crops such as millet, turnips, sorghum and lucerne, supplement perennial ryegrass pastures and grains and concentrates are fed in the bail.

Mark has been an active investor in new dairying technology since he installed a 44-bail rotary milking platform in 1994, and often works closely with Westfalia to test new products developed for the industry.

Six years ago Westfalia offered Mark a walkover weigh scale to trial on his herd for 12 months. Mark became convinced of the value he could gain from regular body weight readings and agreed to purchase the equipment, at cost, at the end of the 12-month trial period.

Each cow walks over the scales twice a day when exiting the dairy after milking. The scales feature load cells connected to a control box that links directly by cable into the Westfalia computer system used on the farm. This allows the weights to be read and automatically uploaded into the farm computer system to help Mark make quick and well-informed decisions.

Mark primarily uses the body weight information to make feeding decisions. The system provides a graph of body weight changes for each cow. Body weights fluctuate from day to day, but a trend line for each cow can be established. However, Mark tends to use the weights of cows on a group basis. He may divide his herd into heifers, light mature cows, heavy mature cows and extended lactation cows. Depending upon body weights and weight changes required, the nutritional management of these groups may be managed differently.

For example, if Mark wants an extra 20 kg body weight on his heifers after calving, the computer program can provide these animals with 1 kg/day extra supplemental feed in the bail until each individual heifer gains the extra 20 kg.

Since using data from the scales to change feeding levels Mark has significantly reduced variation in the body condition of his cows and less month-to-month variation over his herd.

"[I can] get the right amount of feed to the right cow at the right time," Mark said of what the scales help him to achieve.

The system has come with some challenges. Mark has found that the scales do not accurately weigh each cow every time she leaves the dairy. Out of 14 weights recorded per week about half are invalid and are ignored by the computer program. These errors can occur when more than one cow is on the scales at the same time or when the cow has only two or three feet on the scales. Mark has programmed the software to ignore values that differ by more than 50 kg from the average of previous accepted body weights. However, Mark considers the variable accuracy to be acceptable for his purposes.

He also uses the scales to manually weigh other animals in the herd, including young stock, heifers, bulls and cows going to market. He is able to keep these animals on the scales to ensure an accurate reading.

Initially, water was also getting into the load cells because of the dirty and often wet conditions in the dairy yard. Mark organised repairs once or twice a year at a cost of about \$200 each, however he has since switched to more protected load cells and shifted the scales to a much drier site in the dairy. The scales are still washed down twice a day and over the last 12 months there has been little trouble with the reliability of the load cells or the scales. Mark checks and tares the scales about once a week to ensure they remain accurate.

Mark thinks that walkover weigh scales are beneficial but may not be viable for every dairy farmer. The total retail cost of the scales, load bars and control box can range between \$10,000 and \$15,000. Provided the load cells are robust, however, there are minimal operating costs after installation.



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Dairy Australia Limited ACN 105 227 987
 Level 5, IBM Centre
 60 City Road, Southbank VIC 3006 Australia
 T + 61 3 9694 3777 F + 61 3 9694 3701
 E enquireis@dairyaustralia.com.au
www.dairyaustralia.com.au