Dairy beef calves – what makes a good one?

Dairy beef producers source excess calves from dairy farms to rear and grow for specialised lean beef markets. Rearing calves is an expensive business, with at least a third of the total cost incurred during the first 12 weeks of a calf's life. It is, therefore, very important that buyers select and purchase strong, bright, healthy calves from a clean, disease-free environment and that calves are carefully selected to meet the specifications of the target market.

Key benefits

- Minimise operating costs and maximise productivity by establishing a reliable source of dairy beef calves.
- Meet the specifications of your target market by choosing the right calves.
- Avoid potential problems and disease risks for your calf rearing facility by knowing which calves to reject.

Sourcing dairy beef calves

Dairy beef animals are usually male purebred or crossbred Friesian calves that would otherwise be slaughtered in their fifth day of life or older as 'bobby calves'. Dairy bulls are usually preferred to dairy steers due to their greater natural growth potential. When managed properly, young bulls do not normally have behavioural problems.

Ideally, calf buyers should form a strategic alliance with one or more dairy farms to ensure a consistent supply of healthy, high performing calves. Avoid calves from saleyards or calf truck sales as management history such as colostrum intake, disease status and breeding may be unavailable or unreliable.

Alliances with dairy farmers

When looking for dairies to supply calves, consider the following important points:

- Calves from large, uniform lines are more likely to perform consistently and so match your business needs and target markets. Variations in genetics, health and availability make it difficult to provide a consistent product.
- Every effort should be made to ensure that disease is minimised, as one sick animal can infect an entire calf shed.

Remember that a long-term alliance will only work if both parties benefit. Buyers benefit from a reliable source of calves. Dairies benefit from guaranteed calf sales, provided they meet the buyer's specifications. Sale prices need to satisfy both parties.

Breed and genetics

Buyers should focus on dairies that can supply calves of appropriate breed and genetics to suit their target market. In some markets, colour is important. Ideally, the source dairy should have a history of using artificial insemination with sires selected from good quality Friesian bloodlines. Calves from dairy sires with high Australian breeding values for body weight are more likely to achieve high average daily weight gains. As part of a strategic alliance, calf rearers may be able to work with dairy farmers to select sires of suitable breed and genetics to produce calves of higher value to the rearer. Selection for calving ease and growth rate would be advantageous to both parties.

Clean environment

Buyers must be comfortable that newborn calves have been given the best opportunity to thrive. The general appearance of a dairy and its cattle will provide an indication of the professionalism of the people running it.

Key areas to inspect are the milking herd, calving area and nursery area. Make sure that the calving area is as clean as possible, as the first hours of a calf's life are

crucial to future health and performance. Ask about the dairy's calving down practices and how calves are managed before sale, particularly with regards to the feeding of colostrum.

Colostrum is a critical source of antibodies, vitamins and other nutrients for newborn calves, but it cannot reverse the negative effects of being born in dirty, unhygienic conditions.

Image courtesy of Phillip Beard, Midfield

Young calves in clean enclosure

Pattern of calf supply

Buyers must understand the market for their final product and schedule calf supply in order to meet the market, optimise use of facilities and minimise labour costs. Therefore, the calving pattern of the dairy must match the needs of the buyer. For example, seasonal calving herds may suit a dairy beef operation based on batch rearing, but a single calf intake per year will not make best use of rearing facilities.

Travelling distance

Calves are best sourced directly from local farms to reduce transport stress and to minimise costs. If calves must travel long distances, older animals at least 6 to 10 days of age should be selected if possible, as they will be better able to withstand the demands of transportation.

Health management

The first 12 hours of a calf's life are critical to its future. Calves are born with no immunity to disease. After birth, important antibodies (immunoglobulins), which provide passive immunity against disease, are supplied to the calf through colostrum – the cow's 'first milk'. However, the calf's ability to absorb immunoglobulins into its bloodstream declines rapidly over the first 24 hours of life. Therefore, a calf must get an early and adequate supply of good quality colostrum from its mother or other freshly calved cows. Without early intake of high quality colostrum, calves will be more disease prone and are likely to have higher death rates.

Each calf should have its navel sprayed with 7% iodine solution as soon as possible after birth to avoid infections of the umbilical cord, which can lead to diseases such as 'joint ill'.

Dairy farms with an active vaccination program against leptospirosis and clostridial diseases (and *E. coli* and salmonella, if indicated) are preferred. Buyers should understand the infectious diseases common to their region and source calves from dairies that vaccinate accordingly. If cows are vaccinated prior to calving, it will enhance the quality of their colostrum by increasing antibody levels.

Buyers should also obtain information on the herd's Johne's disease (BJD) and enzootic bovine leucosis (EBL) status and determine whether salmonellosis has been a significant health problem in the herd.

Colostrum feeding

For a super start, a calf needs to be born on a 'colostrum conscious' dairy where rearers know the three Qs of feeding colostrum:

- **Quickly** – ideally, each calf should receive 4L (or 10% of birth weight for small calves) of colostrum by tube feeder within six hours of birth. Understandably, it is not possible for all dairy farmers to do this 24 hours a day, so the next best option is for calves to obtain their colostrum directly from the cow soon after birth.
- **Quality** is essential (this can be measured with a colostrometer) – **do not** feed colostrum from:
  - heifers
  - cows producing more than 9L of colostrum
  - cows that have leaked colostrum prior to calving

  Colostrum should be as fresh as possible and not 'yoghurtised'.
- **Quantity** – an additional 2–4L of colostrum should be given by tube feeder at 12 hours after birth, ideally, or at the time of calf separation (usually 12–24 hours after birth), to ensure each calf receives an adequate amount of colostrum.

The best way to guarantee colostrum intake is to administer it via a tube feeder. This method is now becoming a more common feature of Australian calf rearing.

Image courtesy of Penn State University

Colostrum administered via tube feeder

Selecting individual calves

Selecting individual calves for purchase is not the same as selecting a dairy from which to source calves. Even when dealing with the best managed dairies, not every calf will suit the dairy beef buyer. Through careful calf screening and selection, buyers can set a standard that sellers must adhere to. By rejecting potentially problematic animals, buyers help to ensure that their rearing facility remains free from disease and other problems.

Regardless of your target market, the best calves will be lively and inquisitive, bright and clear-eyed, and outwardly healthy, with a good frame size. Depending on your market, other characteristics may be important. For instance, when sourcing Friesian bulls for a feedlot, genetics, coat colour, frame size and conformation are critical. Structural soundness, indicated by good strong feet and legs, is important if animals are to grow to 800kg or more under feedlot conditions.

Consider the following points when selecting individual calves for rearing:

- Calves should be in their fifth day of life or older and at least 40kg liveweight, with a dry, disinfected navel, and be actively seeking feed. Reject calves lacking size or vigour.
- Check that each calf is properly hydrated, has no laboured breathing, is not scouring and shows no lameness.
- Reject calves with any abnormality including visible hernias, infected umbilical cords or ruptured navels. Check for navel enlargement, moistness, discharge or tenderness to avoid umbilical problems.
- Avoid calves which have been induced or have had a difficult birth. This may be indicated by a swollen head, tongue or limbs; broken limbs; or difficulty standing.
- Avoid calves born during cold, wet weather and those from first calving cows, as young cows usually have lower quality colostrum than mature cows.
- Avoid calves from cows newly introduced to the supplying dairy.

The buyer must maintain good communication with the dairy farmer to determine colostrum intake, medication status and feeding status of calves, reinforcing the value of an ongoing relationship with your calf supplier. Inexperienced rearers may be better off contracting a professional calf buyer; however, before doing so, check the reliability of prospective buyers with other calf rearers.

Particularly when starting off in dairy beef rearing, or if experiencing problems, it is useful to monitor the levels of immunity in a sample of calves from your selected suppliers to gain confidence about their colostrum feeding practices. The adequacy of colostrum intake can be assessed in any calf using a simple blood test to check immunoglobulin levels. The test can be carried out when calves are 24 hours old, and some farmers may allow testing before purchase. If not, a screening program can be put in place on arrival. There is a range of tests and test kits available, so as a first step it is suggested that you talk to your local veterinarian about the options and their pros and cons. Having done this, further information can be obtained from suppliers' websites.

On farms with a calf mortality over 2% it is advisable to sell any calves with low antibody levels (known as 'failure of passve transfer' or FPT) direct to slaughter, as these animals will be disease-prone due to low immunity.

Image courtesy of Dr M. Pyman

Healthy newborn calf with ear tag

Price

Be careful of calves that are offered cheaply or given free. They may be small, lack vigour, carry disease, and/or fail to meet market specifications in some other way. These calves are likely to be expensive to rear and unlikely to return a profit. It is better to place your efforts into rearing quality calves that provide the best chance of repaying.

Calf identification

Markets are now demanding lifetime traceability of food-producing animals. Lifetime traceability also allows producers to review the performance of their animals against expected targets, which can provide an early indication of growth problems. Tagging and record keeping should commence shortly after birth, at the property of purchase. When calves are collected, buyers should obtain individual records that include property of origin, date of birth, sire, dam and birth weight (if available).

The National Livestock Identification System

Australia's system for the identification and tracing of livestock is the National Livestock Identification System (NLIS). Through the use of an electronic device containing a microchip encoded with a unique, unalterable number, the NLIS database enables individual animals to be tracked from their property of birth to slaughter, for food safety, product integrity and market access purposes.

The NLIS device includes a radio frequency transmitter that can be used for electronic record keeping. This can add benefits on-farm when used in conjunction with automatic rearing systems for individual animals or through accurate calculation and management of calf growth rates by regular recording of weights.

NLIS was introduced on 1 July 2005 and it is now compulsory in most states to record cattle movements on the database. For information about NLIS regulations in your state, check the MLA website, www.mla.com.au, or contact your local Department of Primary Industries or Agriculture. For information about the NLIS database, contact the NLIS helpdesk on 1800 654 743 or go to www.nlis.com.au. This site also provides links to the relevant state departments.

Entering the ID of an animal into the NLIS database

The bottom line

Newborn calves are the 'raw material' of the dairy beef industry. It is extremely important that calf buyers understand their target market and form relationships with one or more dairies that can consistently supply healthy calves of the correct specifications. This will improve the efficiency of your calf rearing enterprise by minimising operating costs, illness and mortalities during the critical pre-weaning period.

For more information

This Tips & Tools title is part of a series on successfully rearing and growing out dairy beef cattle. For other Tips & Tools in this series, or to obtain a copy of *Best practice dairy beef*, call MLA on 1800 675 717 or email publications@mla.com.au

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