

# Guidelines put calves first

Anne Lee

An increase in colostrum supply to dairy processors may ironically be a win for newborn calves, as more attention is paid to storage and handling of colostrum from the first four milkings.

Massey University's major leader in animal science Dr Jean Margerison has helped Fonterra set its farmer guidelines for colostrum supply, with attention and priority clearly on the needs of the calf.

She and vet Dr Richard Laven, also a lecturer in production animal health at Massey University, have detailed the health-giving benefits of first-milking colostrum in the guidelines, stressing the importance of newborns receiving it within four to six hours of birth.

The immunological properties of colostrum are highest in the colostrum produced at the first milking after calving, with immuno-globulins (IgG) concentrations at around 65mg/ml. At the second milking, IgG levels drop by more than half to below 30mg/ml, falling to below 10mg/ml by the fourth milking.

Margerison said farmers supplying colostrum have to identify their first, second, third and fourth milking cows, as only colostrum from these milkings can go into the vat for collection by the processor.

Any excess not required by calves could then go to the vat for collection, along with colostrum from the third and fourth milkings.

Colostrum from milkings five to eight can't go to the processor for specialist colostrum supply and also can't be supplied to the factory with the main herd's milk. It should be stored carefully in hygienic containers and fed to calves aged from two to three days.

Speaking at an AllfarmNZ conference in



Jean Margerison – 'liquid gold'.

June, nutrition specialist Andrew Robarts said calves should be collected twice a day to ensure they get adequate early intake of the "liquid gold", or high IgG concentration, first-milking colostrum. Colostrum from the first two milkings should be kept separate from that from later milkings so as not to dilute the IgG concentration.

The three Qs – Quickly, Quality and Quantity – should make up the calf-rearer's mantra. Calves need 2-2.5 litres of first colostrum, depending on their breed and size, within their first six hours of life, as their ability to absorb the IgGs through the gut wall decreases rapidly.

By 24 hours old their ability to absorb IgG is virtually gone, so delaying their first feed to 12 hours after birth means they are unlikely to absorb all the immuno-globulins they need to achieve high levels of immunity.

Research results show that less than half of New Zealand calves have adequate

colostrum intake within that first 24 hours, possibly contributing to a five to 10 percent average calf mortality rate, compared with US rates at eight percent and UK rates at two to five percent.

Research trials had shown mortality increasing with a delay in colostrum feeding. Delaying feeding to 25-48 hours after birth resulted in mortality of 20 percent, compared with five percent in calves fed colostrum within two to six hours of birth, Margerison said.

Over their first three days of life, calves should ideally consume 10.5-15.5 litres of first-milking colostrum – 2.5 litres in the first six hours and another one litre in the next six hours.

Calves should continue to be fed three to four litres/day of general colostrum until day three, when they should be fed two litres colostrum and the same of whole milk or milk replacer as they move off colostrum. Prolonged colostrum feeding will delay the development of the calf's own "active" immunity.

Quality, too, was important in ensuring the calf wasn't being dosed with bacteria as early milk provided a great medium for micro-organism growth. As well as immuno-globulins, colostrum is higher in vitamins, minerals and nutrients than whole milk.

While first- and second-milking colostrum should ideally be fed fresh, it could be refrigerated. Colostrum from milkings three to eight should be refrigerated or preserved by acidifying it with natural yoghurt as a starter.

From day five, Massey University's calf-rearing programme includes the addition of straw and meal to the diet to promote papillae development within the rumen and, from day 20, calves go onto once-a-day feeding with four litres of milk/day.

## EZ way to check colostrum

The EZ Milker from Shoof International, pictured, means farmers can collect and measure the exact amount of colostrum their young stock are receiving.

Invented in Minnesota for milking mares, it is now supplied for sheep, goats and cows, and can be used on almost any other large animal.

The EZ Milker is a hand-held pump making it easy to use and safer than traditional milking methods, requiring only one hand.

It's also easy on the animal's teats.

The first milking can determine the health and performance of an animal's life, so it helps farmers ensure their stock get off to a good start.

The EZ Milker range will be available from Shoof shops in farm stores and vet centres throughout New Zealand.

For further information Freephone 0800 800 801, or visit [www.shoof.co.nz](http://www.shoof.co.nz)

