

# New technologies

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**L**arge numbers of calves are currently moving from spring-calving dairy herds to beef farms throughout the country. How these calves are treated on arrival and in the days and weeks that follow has a huge bearing on their lifetime performance. With proper management, healthy, well-grown calves that continue to grow at optimum daily gains will be turned out to grass later in the spring. Where their management is below standard, there will

be increased deaths, higher costs, lower lifetime performance and greater workloads.

Technologies that can help beef and dairy farmers to reduce labour requirements and keep calves healthy and meeting performance targets are a welcome addition to any farm.

There are many different pieces of equipment now on the market. The following are some which have been tried and tested at Teagasc Grange.

## Digital rectal thermometers

It is good practice to use the rectal thermometer on all calves when they arrive on the farm to ensure they are fit and healthy and in particular that they are not showing signs of pneumonia.

For Teagasc Grange staff, this is routine and any calf that is above 39.5°C (103.1°F) is taken out into a separate pen for treatment until it is fully recovered.

Any calf that looks dull or is off its feed during the rearing phase also has its temperature taken. New electronic rectal thermometers make this a much easier, faster, more accurate and safer job. They can be purchased for approximately €20 to €25.



## Digital anemometers

Housing calves in well-ventilated but draught-free housing is essential to keep calves healthy. Many farms set up micro-climates within calf sheds where calves can lie down to maintain their body temperature.

There is always a risk of draughts though. Measuring air speed at calf height using an easy-to-use handheld digital anemometer gives the calf-rearer the comfort of knowing that the animals are in a draught-free environment. These are a very accurate and can be bought for less than €60.

Air speed can have a direct affect on the temperature at which a calf has to use its additional energy to keep warm. This has an influence on the lower critical temperature (LCT). LCT for healthy calves to two weeks old is in the range of 10°C to 15°C.

As calves grow, their LCT reduces, enabling them to withstand lower temperatures without becoming stressed. Similarly, as growth rates increase, LCTs tend to reduce.

A draught is considered to be present if wind speed is greater than 0.5 metres per second (m/s) in any of the calf pens.

Draughts hitting calves causes them to lose heat energy. Energy loss will double when wind speed rises above 0.5m/s. If air speed within the shed is greater than 0.5m/s, changes should be made to the ventilation in the calf shed. Most digital anemometers have the added benefit of measuring the ambient air temperature in a shed.

## Calf-rearing colostrometers

The greater the quality of colostrum produced by cows, the better the immunity passed on to calves that drink that colostrum in the first few crucial hours after birth.

Colostrometers are available for on-farm use to test the quality of colostrum. They work by measuring the density of the colostrum.

You simply place the colostrum in the cylinder provided, insert the colostrometer and wait to see where it floats (it is important that this



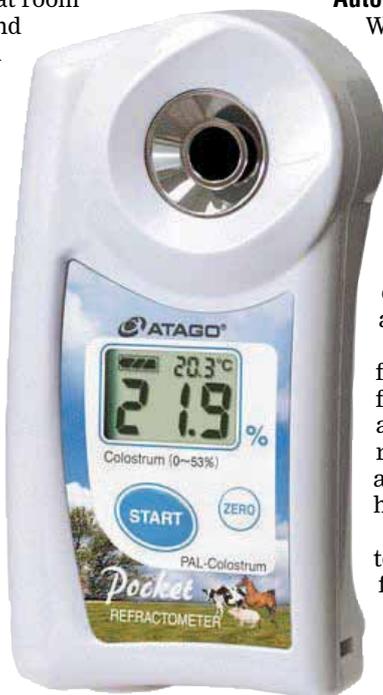
# for calf rearing



is done inside, at room temperature, and not outside in a shed).

If it is poor-quality colostrum, then it will drop into the red zone, whereas good-quality colostrum will see the colostrometer settle in the green zone. Colostrometers can be purchased for less than €35.

There are also digital hand-held devices called Brix Refractometers (pictured), which will test the quality of colostrum by measuring the total solids percentage. If the Brix value is above 20%, then you can assume that it is a high-quality colostrum. These are easier and quicker to use than the colostrometers, but cost considerably more.



## Automatic calf feeders

While calves can be successfully reared using a variety of manual feeding equipment from buckets to large multi-teated systems, there has been considerable interest in recent years in the use of automatic calf feeders, particularly where large numbers of calves are being reared annually.

Teagasc has successfully used this technology for many years at Grange and has found it to be both reliable and labour efficient, as well as being useful in the health management of calves.

There are a number of systems available and many can facilitate either whole milk or milk replacer.

Typically, a single machine can feed 60 to 120 calves using feed stations positioned in different pens.

Each calf is assigned an electronic ID, either in the form of an ear tag or collar, and its nutritional plan up to weaning can be set up in advance.

Indeed, the machine will automatically wean calves over a preset period and this is further facilitated where electronic concentrate feeding sta-

tions are added, which record daily concentrate intake.

Calves typically become accustomed to the machine within one to two days, particularly where they have been used to suckling a teat since birth.

In our experience, nutritional diarrhoea or scour is rarely encountered in machine-fed calves where good-quality milk replacer is used. Indeed, recent data from Teagasc Grange shows that monitoring the feed intake and feeding behaviour of calves on an automatic feeder can alert farmers to developing clinical disease (e.g. pneumonia).

Our study showed that calves had a tendency for reduced feed intake (approximately 8%) during the three days prior to the identification of pneumonia, compared with healthy calves.

As is the case with any electrical equipment, a contingency plan is required for a power outage and farmers also need to be vigilant to ensuring continuous water supply during periods of cold weather.