

Over the last few months, dairy farmers across the country have been reporting higher twinning rates than usual. Louise Hartley asks vet Jim Willshire to explain the science behind it and give his management advice.

# Tips to manage twin-bearing cows as high numbers reported this year

**T**win calves in dairy cows can significantly increase the risk of dystocia, retained foetal membranes, metritis, metabolic diseases such as left displaced abomasums, culling and extend calving to conception period.

According to vet Jim Willshire, Endell Veterinary Group, Salisbury, potential problems with twinning begin very early on, when placental blood vessels fuse together, causing freemartinism.

As the pregnancy develops, total foetal mass becomes the critical issue as the twin-bearing cow attempts to support 60 per cent more foetal mass than those carrying just one calf.

Mr Willshire says: "When foetuses, placenta and fluids are considered, cows carrying twins lose more condition before and after calving compared to single-pregnancy cows.

"Problems continue with twin-bearing cows typically calving 10-14 days earlier than their single carrying cohorts, posing potential



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JIM WILLSHIRE

problems with dry cow therapy selection.

"Twin-bearing cows have a lower dry matter intake [DMI] through pregnancy than their single carrying cohorts, meaning they have significantly lower insulin concentrations through the dry period.

"This results in excessive fat mobilisation and higher non-esterified fatty acid and ketone concentrations during the last month of pregnancy - both of which significantly increase the

risk of type two ketosis and subsequent metabolic disease."

A large number of twins are expected early this year due to the period heat stress during last year's summer, says Mr Willshire.

He says: "As part of the normal oestrus cycle, a cow's ovaries go through waves of follicular development [typically three in maiden heifers and two in adult cows]. However, one follicle is selected to become 'dominant', secreting oestrogen and suppressing the development of other follicles [this follicle then goes on to ovulate].

"It is this increasing oestrogen level which is in part responsible for the expression of oestrus.

"During periods of heat stress, follicular quality is reduced, compromising oestrogen production [which helps explain the reduction in oestrus expression].

"As heat wains, multiple, poor quality follicles are allowed to develop and ovulate, increasing incidence of twins."

**What should be done when twins are first detected?**



It is essential to identify twin-bearing cows early so you can give them the best possible care and employ management options.

The energy demands for twin-bearing cows through late lactation and the dry period will exceed those of a single carrying cow.

This is further compounded by a decrease in dry matter intake (DMI) and an increase in insulin resistance as they approach calving.

Twins are detectable using ultrasound detection at about

40 days. However, they can be picked up less reliably from 30 days, allowing you to consider the following management strategies:

**1 Monitoring body condition score (BCS) more closely:** Ensure twin-bearing cows are in target BCS of 2.5-3 towards the end of lactation by leaving them in a high yielding group if possible.

**2 Dry off earlier:** Try drying off between 10 and 14 days earlier. Consider moving them straight onto the transition cow ration. Whether this is possible can depend on the type of dry cow ration, for example, those running

dietary cation anion difference rations will not be able to do this, so always discuss any changes with your vet

**3 Use sustained release monensin boluses:** These can help improve energy metabolism in the face of decreasing DMI. They condition the rumen and reduce the proportion of gram positive bacteria, resulting in a more efficient energy metabolism. However, there is some evidence to suggest monensin can increase the risk of twins in the subsequent lactation

## Twinning facts

- Cost of a typical set of twins is believed to be about £130
- Typical UK incidence is said to be 2-5 per cent in cows and only 1 per cent in heifers, but there is a large inter-herd variation with incidences of 14-15 per cent in some herds

- Average heritability of twinning among Holstein sires has increased over time
- 18 per cent of twins require assistance at calving
- Survival rates in twins is only 73 per cent, compared to 95 per cent in single deliveries

## What practical things should be considered at calving?

PROBABLY the most important step is to accurately identify twin-bearing cows around calving.

Mr Willshire has a number of clients using brightly coloured zip ties through existing ear tags to

provide instant identification, even for relief staff.

"Once identified, it means from two weeks prior to their due dates, those cows are closely monitored. This is particularly

important as difficulties around calving are roughly four times more common in cows calving twins. We also advise farmers to consider earlier intervention in delivering the calves."

## How should a newly-calved cow be managed?

MANAGEMENT should follow the same principles as those for all freshly-calved cows – adequate colostrum should be given to twins, group changes kept to a minimum to maximise dry matter intake and cows moved to a ration containing a higher energy and calcium density (a specific freshly-calved ration or high yielders ration).

Cows receiving intervention at calving should also be given a dose of non-steroidal anti-inflammatories. A number of Mr Willshire's clients routinely drench all twin-bearing cows with 20 litres of water and propylene glycol. While evidence for the benefits of routine drenching remain scant, the propylene glycol is likely to reduce the risk of subclinical ketosis through early lactation.

Cows with twins are more likely to retain cleansings and are therefore at a higher risk of metritis. Demeanour should be closely monitored through the first two to three weeks of lactation and the vet should

be consulted if there are any concerns.

### MORE INFORMATION

Visit [www.endellveterinarygroup.co.uk/farm/blog](http://www.endellveterinarygroup.co.uk/farm/blog) for more on drenching.



## Reducing twins

THERE are two main genetic related risk factors for twins, the first of which is cow families. Reports suggest certain cow families will have a higher incidence of twins.

The second factor is yield. A higher yield in the 14 days before oestrus and ovulation following anoestrus are both associated with the risk of twins – both of which are more likely in cows with higher yield.

For both factors, there is little which can be done to genetically reduce the risk of twins without radical changes to a unit's breeding policy.

For cows eligible for service through hot periods, heat stress remains a significant risk factor for twins due to the multiple, low quality ovulations observed as it cools.

Therefore, identifying and managing periods of heat stress in your herd can help.

## Managing periods of heat stress

HEAT stress is quantified using the temperature humidity index – a combination of temperature and relative humidity (RH).

Occurring in our humid climate from 22degC if we have very high RH, it is compounded by the large amounts of heat generated by a cow in-milk (up to 1.4kW per day for cows producing 30 litres) and their poor ability to sweat (roughly 10 per cent of a human's capacity). Periods of heat stress may therefore be more frequent and/or prolonged than you might initially think.

Data loggers measuring temperature and RH can be installed into units to quantify the risks relatively cheaply.

During periods of heat stress, there are a number of straightforward strategies you can employ to reduce the impact. These include:

- Countering a reduction in DMI by increasing the energy density

of rations – however, care needs to be taken to make sure cows do not tip over into acidosis. Changing feeding times to the cooler evening can also help promote DMI.

- Providing fresh water with pressure for rapid refilling.
- Maximising ventilation in buildings by ensuring there are sufficient inlets and outlets, which can be as simple as cutting back overgrown vegetation. Increasing airflow can dramatically improve evaporative heat loss from the skin, with airspeeds as low as 10km/hour reducing respiration rates by as much as 50 per cent.

More extensive strategies typically involve the installation of water sprays and fans. However, when water sprays are used, airspeeds should remain high, otherwise there is a risk of simply increasing the humidity and heat stress effect.

