

Twins

Twins are an undesirable reproduction outcome in dairy cattle. Negative effects are seen in both cow and calves, so a greater understanding of how and why twinning occurs and what can be done to mitigate these effects is useful.

How twins occur

Most twins in cattle are as a result of double ovulation, i.e. non-identical. Incidence of double ovulation in dairy cattle has been reported as around 14%, so perhaps it is no wonder that in some herds the rate of twin births can approach 10%.

It is a common misconception that twinning is a consequence of good fertility. In fact, a healthy follicular wave pattern should result in selection of one dominant follicle which then goes on to ovulate. Twinning occurs when stress factors combine to result in two follicles being equally dominant and reaching ovulation at the same time.

Risk factors for twinning

Breed – Holsteins consistently show higher rates of twinning than other breeds with a range in various studies of 0-10%

Genetics – though not strongly heritable, previous twin pregnancy is a risk factor for increased likelihood of future twin pregnancies

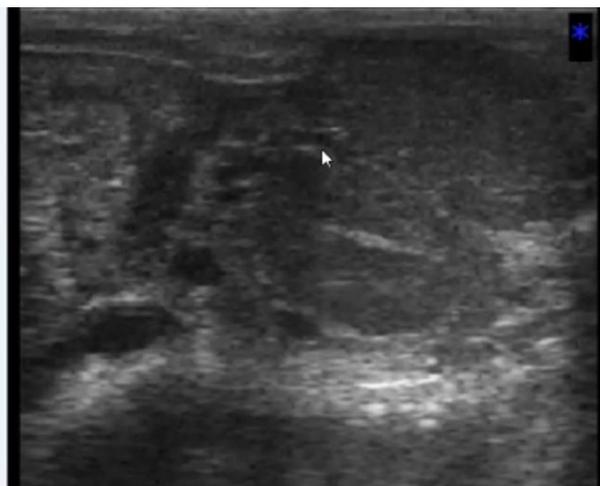
Parity – risk of twinning increases with parity

Yield – cows producing a greater than average milk yield at the time of ovulation have a higher risk of double ovulation (and therefore of twinning). This may be directly linked to a high plane of nutrition, or indirectly to metabolism of oestrogen and progesterone in high yielders.

Season – some studies have shown effects of season, but these can be confounded by changes in nutrition. Heat stress and decreasing day length may play a role.

Management strategies

Management of cows carrying twins can only be achieved through early identification. Ask your vet who does your pregnancy diagnosis to scan for twins as a matter of routine. It doesn't take a lot longer, and is useful for managing the cow.



When 2 CLs are visible in a pregnant cow, it is a good indicator of a likelihood of twins and shows the vet which horn to scan for the 2nd foetus

Early identification of twins (30-42 days) should be followed up by a confirmation at the next fertility visit (50-60 days) as the incidence of late embryonic death is higher in twins. This will minimise the chance of a cow being confirmed PD positive at early PD and subsequently being found empty when late in lactation/due to calve, or treated as a twin when it is now a single pregnancy.



60 day viable foetus with dead twin

It isn't worth trying to abort the cow or to abort a single foetus. The cost of an abortion (delay to subsequent pregnancy, risk of failure to conceive) is greater than the cost of twinning. A proportion of twin pregnancies will go on to lose one foetus anyway, so trying to abort a single foetus is likely to cause more harm than good.



Twin foetuses in the same horn

Once a cow is confirmed still carrying twins at recheck then she should be identified and managed differently in late lactation. Assessment of body condition should be undertaken to allow correct allocation of concentrate or grouping (e.g. might stay on the high yielding ration longer).

At drying off, the nutritional requirement will be higher than for a normal cow, so in a management system where cows are split into 'far off' and 'transition' then the cow carrying twins should go straight into the transition group. This should allow for slightly increased energy density, plus there is a good chance of her calving early (average gestation length is 6-10 days shorter than for single pregnancy) so the risk of her missing out on a proper transition (with consequent metabolic disease) is reduced.

On a single dry cow ration, other strategies may need to be employed such as increased feed space allocation and application of a Kexxtone bolus 3-4 weeks pre-calving.

A knowledge that a cow is carrying twins is useful at calving, as there is an increased risk of requirement for manual assistance. Increased observation and earlier intervention than normal may help avoid a protracted calving, with consequent stress and risk of infectious disease.

Care of the cow after calving

Cows which have calved twins are at increased risk of metabolic disease:

Retained placenta – treatment at the point of calving with Reprocine can help release of the placenta from the uterus

Milk fever – provision of additional oral calcium using bolus or drench may be of benefit at calving

Ketosis – testing ketone levels at 5-15 days post calving is worthwhile. Cows with a BHB level >1.4mmol/L should be treated with 5 days of 300ml propylene glycol. This should reduce the risk of immune suppression and LDA.

Consideration with the calves

If the calves are breeding replacements and are of mixed sex then there is a >90% chance that the heifer will be a freemartin. This is because testosterone from the male foetus has crossed to the female placenta and influenced its genital development so that it is infertile. Any heifer twins from a mixed sex set should therefore be marked for beef, or tested by blood sample to see if it is fertile.

Twin calves are very unlikely to receive adequate colostrum if left to suckle, so the cow should be milked as soon as possible after calving and the calves fed either by bottle or stomach tube (2 litres immediately and another 2 litres 6 hours later).

Conclusions

Scanning for twins is extremely worthwhile to aid your cow management. Ask your vet to start doing it at the next fertility session!

Thanks to Peter May who provided these images as part of a recent webinar for the British Cattle Veterinary Association.



Ed