PICTURE: MARCELLO GARBAGNOLI

Managing transition cows, specifically the nutritional needs of early post-partum cows, is key to reducing the risk of cystic ovarian disease. **Katie Fallon** reports.

Preventing cystic ovarian disease

A common disease affecting between 5% and 60% of dairy cattle in the UK, cystic ovarian disease negatively impacts cow productivity, with effects on both farm efficiency and profitability.

Vet Esme Moffett, of Synergy Farm Health, says cystic ovarian disease is the presence of a large anovulatory structure at least 20mm in size on the ovary, in the absence of any other functional structures.

The structures are fluid filled and thin walled with a thickness of less than 3mm and tend to have been present for more than 10 days.

Mrs Moffett explains that cystic ovarian disease results in a disruption to normal cyclicity, with the cystic structure dominating the hormonal process. She says: "We all commonly call them cysts but technically they are an anovulatory follicle, which forms when there is a breakdown of the normal hormonal pathways to the ovary, preventing the follicle from ovulating and allowing its continued growth."

Few or no signs of heat, known as anoestrus, is one of the key signs that indicate cystic ovarian disease could be present, says Mrs Moffett, with an ultrasound examination required for an official veterinary diagnosis.

She says: "We used to see cows with ovarian cysts displaying nymphomaniac behaviour [or] irregular or very frequent oestrus activities, including a lot of standing to heat or roaring and trying to ride other cows. But we see that a lot less now. We might detect irregular bulling on heat detection monitors but not signs of a lot of behavioural heat activity."

Mrs Moffett says cystic ovarian disease mainly affects cows in the very early post-partum period, with cows either having a very early heat and then becoming anoestrus or showing very little activity at all since calving.

She says: "Cysts affect fertility by delaying first service, so it is extending that period between getting her back in calf and recalving, thereby extending the calving interval."

Cysts are more common in older and high-yielding cows, says Mrs Moffett, with these cows at greater risk of a negative energy balance, which severely impacts the hormone pathways between the brain and the ovary.

She says: "Negative energy balance would be one of the main causes of cystic ovarian disease. Higher yielding cows can struggle to meet the energy demands of their high milk production through their diet, so they are more inherently likely to be in a negative energy balance."

Consequently, managing cows during the transition period, particularly those which are at risk of being in a negative energy balance post calving, including high-yielding cows, over fat cows and cows with twins, is important.

Nutrition

Mrs Moffett says nutrition plays a big role in the development of cystic ovarian disease, and managing the transition cow and the early post-partum cow is key to ensuring the negative energy balance is as short and as minimal as possible.

Cysts can also be a result of low insulin levels or an insulin resistance which is caused by genetics or diet, affecting the hormone pathways. Fat cows or older cows in later lactations and high-producing cows are particularly vulnerable to this.

Mrs Moffett says: "The main reason the follicle does not ovulate is due to the failure of the luteinising hormone (LH) surge, which is required for ovulation. The failure of this happening creates the persistent follicle which becomes cystic."

While cows can still have enough of the hormone, they may not have it in the right volume or at the right frequency, or it may be slightly mistimed, so the LH surge comes before the follicle is ready.

Mrs Moffett explains that cases of cystic ovarian disease are farm specific, with some farms experiencing it more than others. She says: "You will get some farms that experience it a lot more and some that do not. Like any disease diagnosis, if you are not going looking

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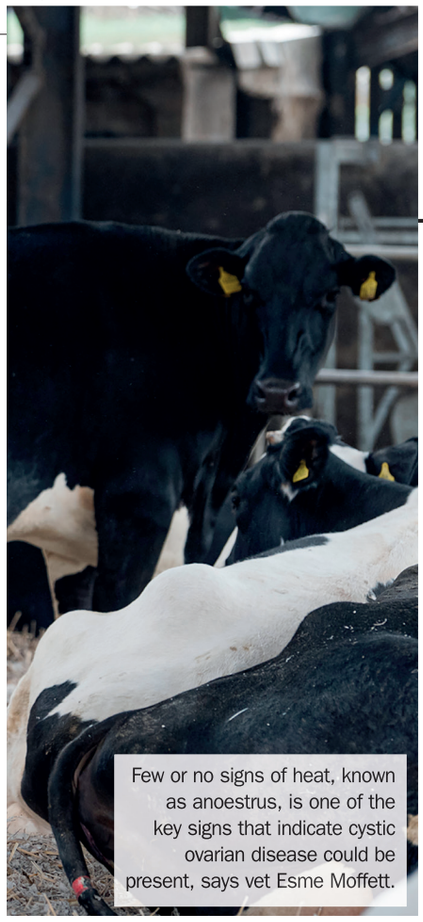

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When looking to treat the disease, Mrs Moffett says management of external risk factors and treatment of the individual cyst should result in cyclicity returning to normal, however, some cows may repeatedly become cystic until external factors are corrected.

"Some cysts will sort themselves out depending on external factors and risk factors. If the situation gets corrected, they may well resume to normal cyclicity before they are flagged as being a problem by the farmer or the vet."

Treatment

Mrs Moffett says the most common form of treatment is hormonal intervention, with the main options being a gonadotropin releasing hormone (GnRH) injection, an intra-vaginal progesterone device or a synchronisation programme.

She says: "An old-fashioned treatment was to pop cysts, although some are so thin walled that you can glide your hand over them, and they disappear. But the recommendation now is to not force the cyst to pop due to the risk of haemorrhage and scarring."

When trying to prevent cystic ovarian disease, the focus needs to be on transition cow management, specifically nutritional management of dry cows and early post-partum cows, particularly higher risk cows.

Mrs Moffett says: "Higher producing cows, early lactation cows or those that have already had some kind of post-partum issue such as retained cleansing or milk fever – put the effort into those ones."

She says there will also be some genetic predisposition for developing cystic ovarian disease, therefore, she advises tracking cows which have had more issues and being aware of breeding replacements from these animals.

Mrs Moffett also advises avoiding over fat and over thin cows in the dry period, and recommends cows enter the dry period at a body condition score of 3 to 3.5, as a desirable position to calve down in.

"Be aware of minimising body condition loss post calving, ideally no more than a score of 0.5, and encourage good feed intakes. Diet formulation is important but [so is] the bigger picture of nutrition, including feed space, fresh food and access to plenty of clean water."

Esme Moffett

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