Too fat to function

Over-conditioned cows means fatty livers and possible poor reproductive performance

Are your cows too fat as they go into the dry period? If so, you could be storing up health and fertility trouble for the next lactation. Two leading nutritionists explain why and offer tips on how you can avoid 'over-conditioning' your cows.

A rise in metabolic problems caused by 'over-conditioned' cows going into the dry period is beaing seen in UK dairy herds, according to SCA NuTec nutritionist Norman Downey.

"Cows are ending their lactation and going into the dry period with condition scores of 4 or even higher," says Mr Downey. "Ideally they should be condition score 3 to 3.25 through this transition phase to ensure good feed intakes and prevent problems associated with fatty liver, such as ketosis, at calving and in early lactation."

The reasons for more over-conditioned cows in this period could be changes in management and, at this time of year, the availability of fresh grass. "To ease management and keep the system simple more herds are being managed as one group," adds Mr Downey. "The belief was that as cows moved into mid and late lactation their intakes would drop in line with milk production. But what we're actually finding is that intakes do not drop as quickly as milk output and instead cows are laying down more body fat."

On-going problem

Similar problems of excess body fat arise in mid- and late-lactation cows on spring and early summer grazing, agrees independent nutritionist Hefin Richards of Profeed Nutrittion. He says that over conditioning of cows is an on-going problem in some herds and it's been exacerbated by the feeding challenges posed during the past two years by poor forage quality.

"Producers are tempted to put dry cows out to grass during the summer, but if they're already in good condition they can put on too much additional condition.

"In some instances it would be best to pull late lactation cows out of the herd a month earlier than usual to prevent them from putting on excessive body condition. And put them on a less energy dense ration, rather than the milking TMR.

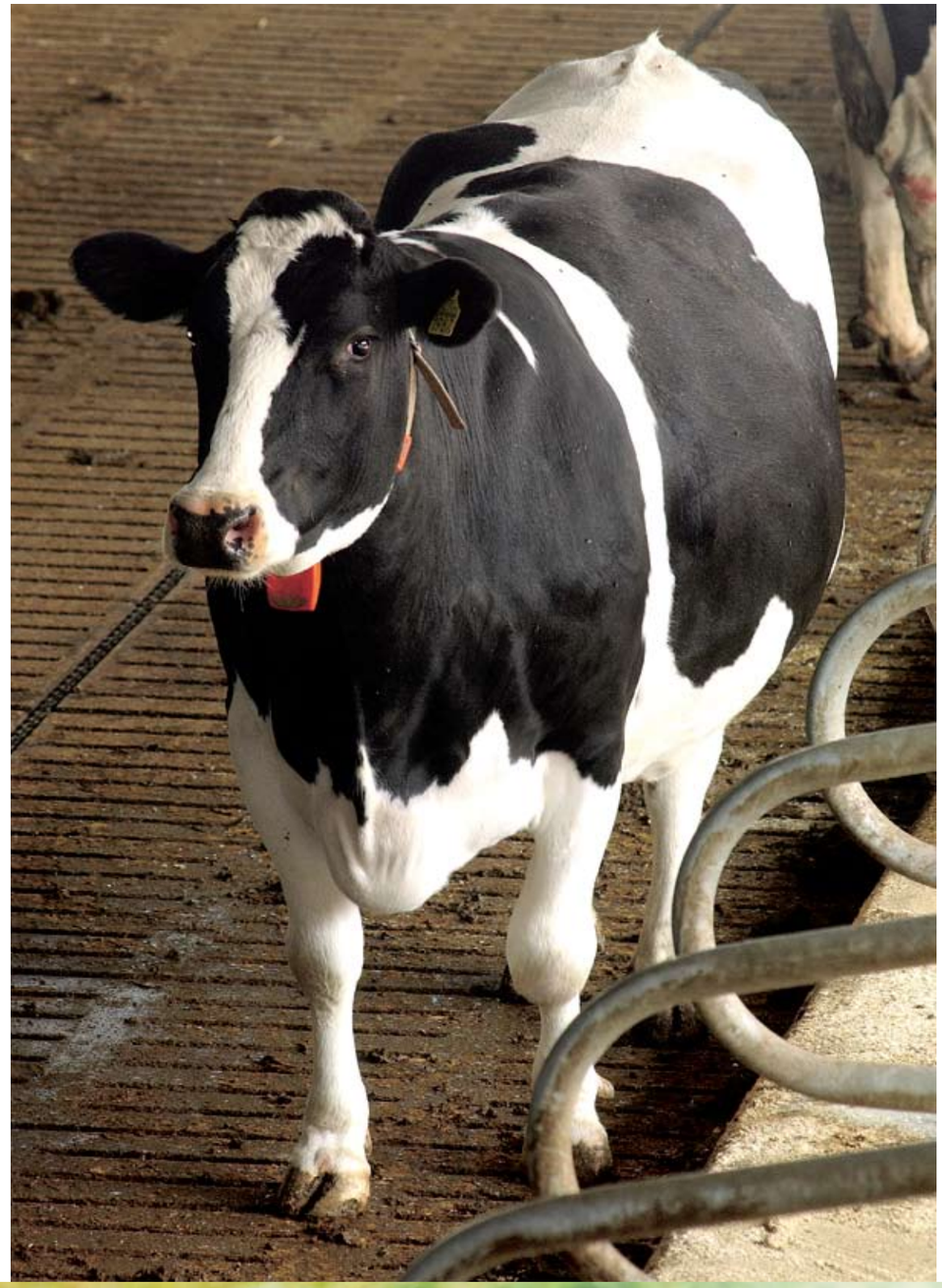
"And producers would also do well to remember that dry cow management is about maintaining body condition – not losing or gaining any.

"There's little scope to safely do anything about body condition score during the dry period. Significant body condition loss or gain during the dry period is undesirable, which is why it's so important that cows go into the dry period at a BCS of around 3.25," he adds.

Avoid extremes

And he likes to see producers avoiding extremes of BCS throughout the cow's annual reproduction and lactation cycle. "Too may get caught up in the 'fat-cow-thin-cow' cycle, where cows fluctuate between BCS 4 at calving and BCS 2 in mid lactation. I prefer to see a narrower band of body condition score change."

He adds that this puts a lot less strain on the cow and avoids all the problems associated with excessive BCS at calving, which have a knock on effect throughout the rest of the lactation on cow health, fertility and productivity.



Big trouble: cows carrying too much condition as they go into the dry period are more likely to suffer health, fertility and productivity problems post calving

Excess body condition reduces dry feed intake because the fat restricts rumen capacity both pre and post calving, according to Mr Downey. "To make up for the deficit in intake the cow will mobilise body fat at the onset of lactation and this excessive fat mobilisation leads to fatty liver.

"We know that at least 50% of all cows suffer from some form of fatty liver and this can lead to reduced yields, health and fertility problems."

Bottle neck

In effect, the liver becomes a bottle neck and it cannot function adequately. The supply of fat, glucose and protein to the udder is reduced and so milk yields can suffer. Detoxification of the blood in the liver slows down and ammonia accumulates, leading to fertility problem such as poor expression of heat and reduced pregnancy rates.

And recent work has shown that the role of vitamin E is significantly impaired in cows with fatty liver. This vitamin is vital for immunity and for reducing cell counts, mastitis and the incidence of retained placenta. "There's no benefit in increasing vitamin E in the diet of a cow with fatty liver," adds Mr Downey.

"The work starts from the onset of the dry period when we need to condition the liver and get it ready for the demands placed on it in early lactation. As soon as the cow calves and goes into milk the liver has to work hard in dealing with mobilisation of nutrients and it is inevitable that body fat will be part of this."

Avoiding fat cows at calving and feeding a lower concentration of dietary protein in early lactation are just two factors that can limit the rate of fat mobilisation in early lactation.

In addition, producers can look at adding specific packages of vitamins and essential co-factors in the dry cow and early lactation diets that help to 'prime' the liver to mobilise fat. "We have seen, in our own trial work, that including a package of this type – in our case LiFT – can increase yields by 3.4 litres per cow during the first 12 weeks of lactation

"And there are knock on effects too. We have seen reduced somatic cell counts – to the tune of 32% – and fewer mastitis cases, reduced incidences of retained placentas and significant improvements in fertility. The economic benefits can be as much as £200 a cow a year."

Nutritional deficiencies

These improvements are seen when LiFT is included in the transition cow diet at a rate of 50g per cow per day for 21 days pre calving followed by 100g a day post calving to 100 days. Fat and protein yields were also seen to increase in trials and when supplementation of LiFT was continued yields stayed above those in the control groups.

"Cows with fatty liver are ill," adds Mr Downey. "And identifying it once she's calved is too late. Producers should take a look at the ration much earlier so they avoid nutritional deficiencies and the risk of fatty livers. Priming the liver so it has greater ability to use energy from dietary fat and body reserves and more available energy for milk production will pay dividends."

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