DAIRY HERD HEALTH & PRODUCTIVITY SERVICE

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Sorting of dairy cow rations

The ingenuity of dairy cows never ceases to amaze! The ability of a dairy cow to sort a mixed ration is well known, and will result in the consumption of a ration that might be very different to the ration that has been put in front of the cow. Cows will typically sort against larger particle sizes, and this will result in individual cows consuming higher levels of concentrates and lower intakes of fibre. This sorting behaviour can start as calves, with some evidence that such early life experiences will influence sorting behaviour as adult cows.

A number of research studies have looked at the risk factors for ration sorting, both at the individual animal and herd level, including:

- **Forage inclusion rate**. Higher levels of forage (especially high fibre feedstuffs such as hay and straw) will increase the likelihood of sorting.
- **Dry Matter of the ration**. Dry forages are more easy to sort than wetter rations.
- **Larger particle size**. Longer fibre lengths (especially long hay or straw that has not been properly chopped) will be more prone to sorting, as will larger feedstuffs such as potatoes and fodder beet when fed in a mixed ration.
- **Decreased feeding frequency**. The longer that the feed is available to the cows, the more opportunities that they will have to sort it. Providing food more than once a day may help.
- **Increased feeding level**. Cows that are fed for lower refusal rates without limiting Dry Matter Intakes will consume all of the diet that they are being fed. Higher refusal rates run the risk that more long forage is sorted out of the diet, but the major caveat to this is that overall feed intakes need to be maintained. Feeding mixed rations for a 5-10% feed refusal rate is still recommended for high yielding cows.
- **Social pressure**. Sorting is lower in individual fed cows (tie-stall) compared to group feeding situations. It is hypothesized that increased competition for feed access will increase sorting behaviour, however this is difficult to quantify.

It should be noted that sorting may be beneficial for cows. There is some experimental evidence that when feeding cows diets that induce SubAcute Rumen Acidosis, cows will preferentially sort the diet for longer particles, presumably to improve rumen health – a phenomenon labelled "nutritional wisdom"!

So how might you recognize that your cows are sorting the diet, and this is resulting in significant issues with production? Signs to look for include:

- Cows making holes in the mixed ration
- Visible long forage in feed refusals
- Unexplained variations in milk yield and dung consistency in the herd
- Metabolic profile results show wide variations in energy, urea-N and mineral results, regardless of milk yield or Days in Milk.

If there are issues with sorting of the ration, then the following steps may help to reduce it:

- Ensure that all sources of long fibre (straw, hay, haylage) are **chopped to 2-3 inches in length**. Chopping forages (for example using a Rotagrind™) prior to addition to the mixer wagon is usually more effective.
- With dry rations, **adding water to the ration** to reduce the overall diet to less than 50% DM. Watch that this does not result in heating or spoilage of the diet.
- **Adding liquid feeds such as molasses** to the diet may help stick the diet together and reduce sorting of the ration.
- **Increasing feeding frequency** (to two or three times a day) will provide a more consistent diet, and helps when feeding root crops that may be difficult to properly chop.
- **More frequent pushing up of the ration** will also likely help to reduce sorting, by improving intakes and reducing the opportunity to sort.

Agriscot 2023

As usual, the DHHPS will be part of the Royal (Dick) School of Veterinary Studies stand at Agriscot on Wednesday 22nd November 2023. Come along for a chat if you are going to the show.

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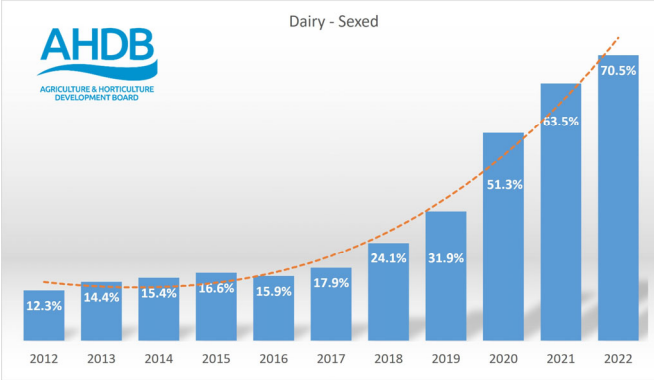
Increasing use of Sexed Semen in the Dairy Sector

During the GB Calf Strategy seminar delivered at UK Dairy Day in Telford in September 2023, a very clear graph was presented highlighting how sexed semen usage in the dairy sector has dramatically increased over recent years. In the twelve months to March 2022, sales of sexed semen made up 70.5% of all dairy semen sales.



AHDB (2023) https://ahdb.org.uk/news/survey-reveals-a-significant-increase-in-sexed-dairy-semen *Data collated via a recent AHDB survey of breeding companies.*

This data shows that sales of sexed semen have increased nearly fivefold since 2017 (when dairy sexed semen sales were 17.9%), to 70.5% in 2022.

Given the increased use of sexed semen, fewer dairy animals are having to be bred to dairy, and so a rise in beef semen sales to the national dairy herd has also occurred.

At the GB Calf Strategy Seminar, it was also presented that beef semen usage has more than doubled in the last five years; dairy-beef numbers have risen by 59%, and dairy male registrations have fallen by 44%.

It makes for interesting reading when considering BCMS Calf Birth Registrations from January to July 2023. Data published by AHDB highlights that calf birth registrations in Britain were down 2.1% or just over 32,000 head during the first half of 2023. Total calf births over the first six months of the year amounted to 1.53 million head, of which 1.3million are expected to be sold for beef production, down 1.8% or 23,400.

The number of calves available for beef production was lower in the six months from January to July 2023, with decreasing numbers seen across all breeds of cattle excluding Aberdeen Angus X, British Blue X, Hereford X and Aberdeen Angus and Hereford.

The largest decline in birth registrations applies to dairy male calves, with a 19% reduction on last year, driven by the increase in use of sexed and beef semen in dairy herds. Beef calves born to a dairy dam rose by 1.7%, whereas calf births recorded to a suckler dam are down 3.5%. These figures highlight the importance of the dairy herd to beef production in the UK.

The use of sexed semen in the dairy industry has been a key game changer. Initially, when sexed semen first came onto the market, its' most widespread use was in maiden heifers due to the product having known lower conception rates than conventional semen. The lower fertility of sexed semen may be attributable to the presence of fewer sperm within each straw, and the potential for sperm damage during the sorting process. Current evidence would suggest that the fertility of sexed semen is approximately 80% that of conventional semen, although with good semen handling and thawing, there is scope for this to be further improved. Indeed, many producers report minimal differences in conception rates, even in older cows.

Now that sexed semen is used more widely across the whole dairy herd, benefits include being able to produce genetically superior replacements, options to sell surplus dairy heifer replacements and a significant reduction in the number of dairy bull calves (and the reduced associated risk of calving difficulties in delivery of a larger male dairy calf versus female dairy calf). Another clear potential positive is reducing the need to buy-in replacement animals, as purchased animals are a known biosecurity risk.