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A Greener World Technical Advice Fact Sheet No. 21

Weaning Age in Beef Cattle

Certified Animal Welfare Approved by A Greener World (AGW) has the most rigorous standards for farm animal welfare currently in use by any organization in North America. Its standards have been developed in collaboration with scientists, veterinarians, researchers and farmers across the globe to maximize practicable, high-welfare farm management.

The Certified Animal Welfare Approved by AGW standards require that beef calves are weaned at a minimum of six months of age and that the average age of weaning across the herd is at least eight months. The allowance for an average age means that producers who calve on a 60- or even 90-day cycle can still carry out weaning on a single date and remain in compliance with Certified Animal Welfare Approved by AGW standards.

In deciding weaning age for calves the condition of and stressors on both the cow and the calf must be taken into account. In general, a weaning age of eight months means the calf is of an age and size that it can be removed from the cow without undue stress, and the gap between weaning and birth of the next calf is long enough for the cow to regain any lost condition.

There will always be emergency conditions that will require earlier weaning of the calf in order to protect the health and welfare of the calf or its mother, and this would be permitted under Certified Animal Welfare Approved by AGW standards. However, these should be the exception and not the rule.

Stress on the Calf

In 1981, Reinhardt and Reinhardt (1981) carried out what is regarded as the most recognized and comprehensive study on natural weaning in cattle. They found that the average age of natural weaning is around 10 months of age, although there was quite a variation between individuals, with heifer calves generally being weaned earlier than bull calves (at 8.8 months and 11.3 months, respectively). The report also found that calves stayed close to their mothers for several months even after the cows stopped nursing.

In contrast, in most farming systems the calf is generally removed in an abrupt and early manner compared with natural weaning. Yet removing the calf from its mother can cause significant stress, affecting both cow and calf. Studies show that abrupt weaning at six months causes increases in the level of plasma cortisol (Lay *et al* 1998) and norepinephrine (Hickey *et al* 2003) in the blood of the calf, demonstrating the animal is stressed.

Later Weaning Can Give Better Calf Productivity

If the calf is weaned at around eight months it will already be spending a significant amount of time grazing and ruminating. The cow's milk production follows a standard curve, with a peak at around 90 days post calving, followed by a gradual decline. Weaning at around eight months separates cow from calf at a time when the calf is suckling less and is already obtaining a good amount of nutrition from sources other than milk. Cows milk is a food rich in protein and energy, and some studies report a decrease in growth rate—and even weight loss—in beef calves weaned at around six months old. This may be due to the post-weaning diet not matching the nutrient density of the combined milk/forage diet the calf was consuming before weaning. Remember that a cow is generally better able to convert poorer quality forages into milk than a calf would be at converting the same poor quality forage into muscle gain.

Several research studies support later weaning of calves when adequate forage is available—even up to nine or ten months of age. In Oklahoma, fall-born calves left with the cow to 9.5 months of age were 199 pounds heavier at weaning than calves weaned at seven months (Hancock *et al* 1985). The study also established that this management practice did not affect cow reproduction over a four-year period. In Gainesville, creep-fed calves weaned at nine months were 138 pounds heavier than calves weaned at seven months, although the long-term effects of late weaning on cow reproduction were not measured (Van Dijk *et al* 1985).

Cow Condition

One concern often voiced by farmers is that cow condition will be adversely affected by later weaning. If the cow is in poor condition when she calves she may not produce enough quality milk for the new calf and may struggle to get pregnant again for the following year. However, length of time suckling is not the only factor that affects future reproductive success, and nutrition, disease, genetics and management all play a vital role.

In emergency situations where forage availability is very low—for example, in a prolonged period of drought—cow condition may be low without supplementary feed, and cows may

struggle to maintain long lactation as well as subsequent pregnancy. Even in these conditions it may be better to provide supplementary feed to the cow to enable her to continue to feed the calf than to wean early and provide a high quality post-weaning diet to the calf. In some cases, changes in forage management to improve forage quality may be the appropriate option, rather than switching to early weaning as the solution.

Under normal circumstances a cow can easily support a calf for eight or nine months while allowing for development of the new calf inside her and maintaining decent body condition. Two to three months without a suckling calf is more than enough time for the cow to regain any lost condition before her next calving. Remember the dairy industry generally only allows a 60-day dry period between lactations and the volumes of milk produced are far greater.

Weaning calves at eight months or more—at a time when the cow's milk production is already naturally decreasing—means that a radical reduction in feed level is not needed to dry the cow off, minimizing the need to place the pregnant cow under nutritional stress.

Summary

In most cases, weaning calves at an average age of eight months reduces stress on the calf, provides better growth rates for the calf, and minimizes the risk of reproductive or body condition issues for the cow.

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***Written by Anna Bassett (lead technical advisor, Certified Animal Welfare Approved by AGW)
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KEYWORDS

Beef cattle, calves, weaning, stress, welfare