YOUR ANGUS ADVISOR

Is this cow too thin to rebreed?

Getting that cow in flesh to rebreed shouldn't wear her owner ragged. Starving cows or starving owners trying to pay the feed bill are opposite ends of the spectrum, or should be.

But feeding that cow to thriftiness without indulging her is one of the fine arts of stockmanship. Some study and research undertaken in a couple areas of the country may help pinpoint the target or at least get in range.

While scales can be the cowman's most reliable ally here, cow condition scores are useful for visual checks and monitoring through the season. Some research by South Dakota State University was designed to find the minimum body condition a cow could stand and still rebreed reasonably. Work on visual scoring and translating those scales into "fatness" or "thinness" was conducted at the SDSU Range and Livestock Research Station near Cottonwood.

Goals of the study–in harmony with most registered or commercial programs–was to obtain a short calving interval and high pregnancy rate at a minimum price (and condition).

The balance point is apparently at a condition score four, or "slightly thin", according to SDSU researcher Dr. Dick Pruitt and Pat Momont, graduate assistant. Most work done in this area agrees on this scale: scores range from one through nine with one being severely emaciated and nine being very obese. Five, or "moderate" condition is mid-range on the scale.

Dr. Pruitt and Momont fed Simmental-Angus crossbred cows for a three-year period at different levels of nutrition to create a wide range of body condition. Estimates of body condition were taken prior to calving (mid-March), at "turnout" in early May and a month preceding breeding season, and again in early June. Backfat at the 12th rib was measured with a needle probe and a weight-height ratio was also established.

The research focused on how cow body condition can help adjust cow nutritional management for optimum reproductive performance. Conclusion: if good performance reproductively is desired, avoid letting cows get any thinner at the beginning of breeding season than "slightly thin"–score four. Pasture that will allow cows to gain weight prior to and during the breeding season is almost a cardinal rule.

The weight-height ratio developed by the team found minimum body condition to be 19 pounds per inch of height, again corresponding to condition score of four.

In this study, cows that calved early were able to withstand more nutritional stress or lower body condition during the winter months and yet wouldn't postpone when they calved the following year. Pruitt concluded a weight-height ratio of 20 pounds per inch to be minimum body condition at calving time, especially for later-calving cows.

Some recent Oklahoma State University research points out the precaution of shipping a good cow only because she was skimped on feedstuffs. The will may be there, but if it's not supported by an adequate plane of nutrition, that cow won't express it.

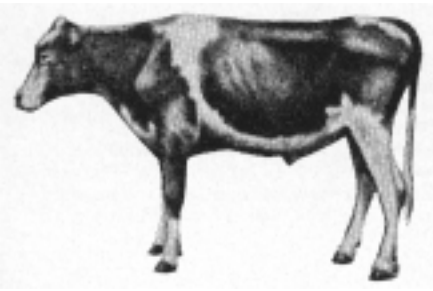
Or, will she?

OSU animal scientist Bob Wettemann is searching for ways to trigger estrus in a thin cow, then let her build up during the summer after she's bred. The rationale is to hold the expensive feeding period to tolerable levels, then let the cow build herself up on her own during the summer after she's bred and when she can fend and forage for herself. . . cheaply.

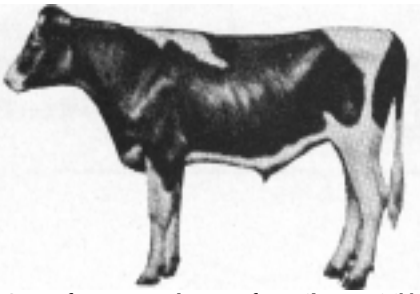
Getting from point A in this process to point B, however, takes some science and slight-of-hand.

"We like to see a cow have a body condition score of five and a half to six if she's to start her estrous cycle with a calf suckling on her in the spring," Wetteman says. "That's about 15 percent carcass fat. Somehow the fat signals the cow's pituitary gland, letting the body know it has the needed energy to produce young."

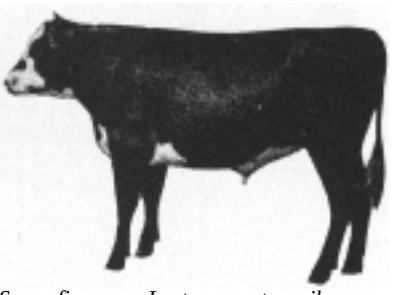
Working with OSU's Dr. Keith Lusby, the pair are explor-



Score three cow: All ribs outlined and the spine is clearly defined.



Score four cow: Three to four ribs arevisible; spine visible



Score five cow: Last one or two ribs are seen, and the spine is not clearly outlined.

ing what causes a cow's estrous cycle to subside and then to kick on again. Glucose levels in the blood are likely keys.

"Glucose is a major energy source for all body tissues, and it decreases with increasing thinness," says Wetteman of the blood level sampling. Found was a cessation of estrous cycling altogether when body condition scores dropped to three and one-half. Fatty acids were detected in the bloodstream signaling mobilization of fat from the body tissues.

Glucose was infused into the bloodstream and into the body to demonstrate the interaction of glucose, insulin, and fatty acids. As a consequence, the pituitary gland was prodded into producing luteinizing hormone, required to trigger the estrous cycle. The result: a thin cow thinking she's fleshy enough to breed.

The practical translation of this work must find a feed program and additives that will mimic the effect of injecting glucose into the blood. Working the metabolic regulator is just the tip of the iceberg, Wettemann thinks, acknowledging there remains much to be uncovered before there are conclusions.

"Answering these and other questions will help us learn how to feed less through the winter, let a cow calve thinner-about a body condition score of five-and still rebreed to gain her weight back on cheap summer forage. We must learn to stimulate the secretion of luteinizing hormone. . . "

And the answer to the cow condition in the photograph is considered to be a score of four, representative of the cow that will be slow to rebreed after calving in the spring, according to OSU Scientist Dr. Bob Wettemann. AJ