

Ask the VMD

Leon Riegel

Donald Yorlets

Edgar Sheaffer

With the help of contributing veterinarians from Valley Animal Hospital Ltd. in Palmyra, Lancaster Farming offers readers an opportunity to "Ask the VMD" questions concerning all forms of livestock. Send your inquiries to "Ask the VMD" Lancaster Farming, Box 300, Lititz, Pa. 17543.

A reader asks: What is a suggested diet for a 15-month-old heifer that was confirmed reproductively sound but not cycling?

Dr. Yorlets comments:

There are many reasons for a young heifer's failure to cycle or conceive; therefore, the discussion on this article will focus on nutrition as it affects reproduction.

Nutritional deficiencies and imbalances are frequently implicated as causes of infertility, with the signs of infertility varying with the degree of deficiency.

The amount of energy in the diet correlates closely with the onset of puberty. Thus, animals with an energy deficient diet will be older before they begin to cycle, but will be comparable in size to a younger animal with proper diet that is cycling. This, then, indicates that body weight, not age, is of prime importance in determining the proper time for first estrus (heat).

Signs which point to an energy deficient diet are: delay in the onset of estrus, small, thin, heifers, and inactive ovaries.

Treatment consists of providing free choice of a high quality roughage, i.e., hay, haylage, or corn silage, and a minimum of five pounds of a well-balanced grain concentrate mixture per head per day. This provides for a 1.5 pound gain per day. When administered thirty days before breeding and thirty days after breeding, this should provide optimal fertility. To minimize

calving difficulties, heifers should be 24 mos. old and weigh 1200 lbs. at calving time.

Cattle which are overfed grain just prior to and immediately following calving have longer calving intervals, more cystic follicles, more abortions, more services per conception, more retained placentas, and more metritis (uterine infections). This overconditioning is called "the fat cow syndrome".

High producing cows are usually in a negative energy balance, i.e., unable to eat adequately for their production, and therefore lose weight. This time period corresponds to the approximate time of breeding. These animals are under stress and can be expected to have decreased reproductive performance. Cows which are gaining weight, on the other hand, have a much higher conception rate. This is a major problem to deal with in first calf heifers, which are using their feed for maintenance, growth, and reproduction.

You can minimize weight loss in high producing cows by feeding high quality forages free choice, and by adding small amounts of grain to the diet 10-14 days prior to calving. After calving, increase grain at the rate of 2 pounds per day or to appetite until peak milk production is reached. An additional 2-4 pounds should be provided for first and second calf heifers for growth.

The following is a discussion of nutritional requirements for optimal reproductive results:

Protein: Protein deficiencies cause a delay in sexual maturity, increase days open, and decrease in appetite. This can lead to a wasting condition and subsequent drop in milk production. Total ration protein for lactating cows

should be 12-16 percent. Either excess or inadequate protein will decrease reproductive performance.

Vitamin A: Deficiencies can result in delayed onset of estrus, abortions, and birth of weak, blind or uncoordinated calves. Deficiencies in calves can be a result of their being deprived of colostrum or being fed cattle feed that is weather damaged, overheated, or that has been stored for long periods of time. Adult cattle require about 1500 I.U. of vitamin A per pound of feed on a dry matter basis. The recommended amount of daily supplementation is 30-50,000 I.U.

Vitamin D: Vitamin D is very important in calcium and phosphorus metabolism. Deficiencies can delay the onset of estrus. Adult cattle require about 150 I.U. per pound of feed on a dry matter basis. The recommended amount of daily supplementation is 6-12,000 I.U.

Calcium: The proper intake of calcium for the corresponding stages of lactation is important in preventing milk fever, calving problems, and retained placentas.

Phosphorus: Lack of phosphorus is one of the most frequently associated causes of infertility. Diets low in protein and energy are frequently deficient in phosphorus, with the effect on fertility being dependent on the degree of deficiency. Severe deficiencies can delay the onset of puberty or the onset of estrus following calving. Moderate deficiencies can cause repeat breeders. High phosphorus supplementation is required for the diet high in legumes, whereas high calcium supplementation is required for a diet high in corn silage.

Iodine: Iodine influences fertility by its action on the thyroid gland. Low thyroid function will prevent cows from cycling properly. Iodine deficiency in pregnant cows can cause premature births or weak calves with goiter. Heat detection and fertility are lower in deficient animals.

Copper: A copper deficiency causes an increase in incidence of retained placentas, prevents regular heat cycles, delays heat cycles after calving, and increases infertility (repeat breeders).

Manganese: Manganese deficiency causes silent heats, infertility, abortions, and birth of calves with deformed or twisted legs.

Cobalt: Cobalt deficiency can delay puberty, delay heats after calving, and cause anemia.

Zinc: A deficiency of zinc can delay testicle development in males, and in the female can cause infertility.

Selenium: Deficiencies can cause retained placentas, muscle weakness, and decreased fertility.

In conclusion, you can maximize reproductive performance and prevent nutritionally related reproductive problems by using the proposed guidelines:

- ✓ Feed a balanced ration for energy, protein, vitamins, and minerals determined by feed analysis.

- ✓ Give high priority to how you feed before the animal reaches puberty, before and after breeding, and before and after calving.

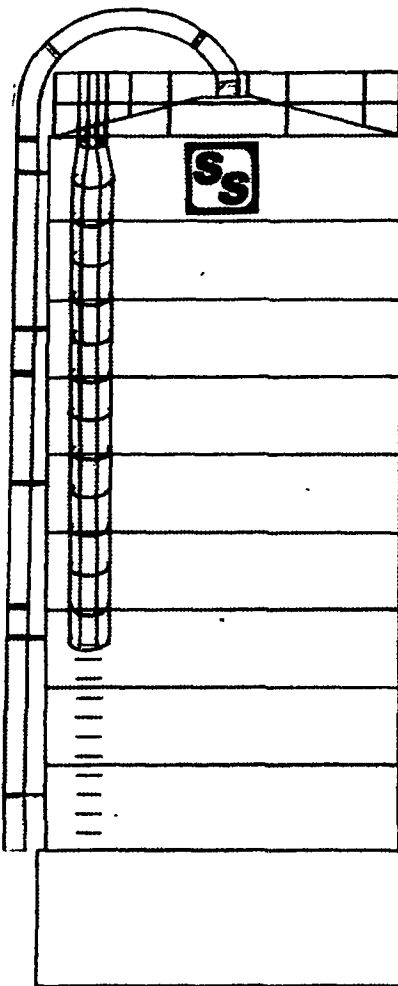
- ✓ Practice challenge feeding to meet the requirements during peak lactation.

- ✓ Feed 20 percent and 10 percent above maintenance respectively to first and second calf heifers to allow for growth.

From this article, the complexity of nutritionally related breeding problems should be apparent. The signs of a mineral or vitamin deficiency are all very similar and vary with the degree of deficiency. Proper reproductive performance requires the cooperative efforts of the veterinarian, the nutritionist, and the dairy farmer.

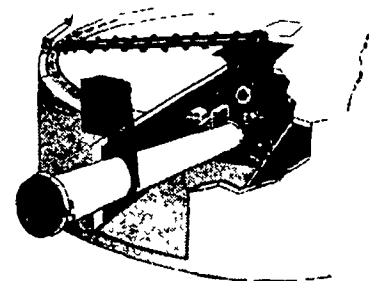
There are so many different possible diets for a 15-month-old heifer, that instead of recommending one diet, the following dietary requirements are suggested: For a 15-month-old heifer, approximate weight 775 lbs, feed about 18.5 pounds of feed per day on a dry matter basis, 1.6 pounds per day of total protein, 10.8 pounds of TDN (9.0 MCAL of net energy), 25.0 grams of calcium per day, 19.0 grams of phosphorus per day, 37 milligrams of carotene, and 15,000 I.U. of Vitamin A.

IMPROVE YOUR BOTTOM LINE WITH A SOLLENBERGER BOTTOM UNLOADER



Sollenberger and Laidig - The two best names in bottom unloading silos team up to give you the best structure and unloader for your money.

- Solid 6" thick high strength concrete walls, over twice the thickness of some other concrete structures.
- 60,000 P.S.I. Steel reinforcing
- Over 75 years experience
- White color reflects 3 times better than blue...much less heat damage
- Leasing available



Laidig 98 and 198 for Forage
Laidig 43 and 143 for Grain

Early Order Discounts Now In Effect

SCHLESSMAN'S HYBRIDS

PREMIUM SINGLE CROSSES

- **NEW: SX-650** - High Yielding, Good Standability, 110 Day, Short Stalk
- **NEW: SX-810** - High Yielding Good Standability, 118 Days ★ Resistant to Carbona Race 3 Disease
- **SX-600** - Fast Dry Down Corn, Excellent Sheller, Excellent Standability, 107 Days
- **SX-405A** - Short Season, High Yield Potential 100 Days ★ Top 3 For The Past 3 Years At Penn State Trials
- **SX-520A** - First Year in Trials, Placed Third, Class 2 105 Days.

BALER TWINE FERTILIZER - CHEMICALS

ALFALFA

#1 in plot of 18 varieties including Pioneer - Saranac AR - DeKalb & Boyd's 78AT
BOYD'S WETFOOT LOOKS BEST

WHOLESALE & RETAIL

BOYD'S SEED CENTER, INC.

306 Iona Rd., Lebanon, Pa. 17042
Phone: 717-272-8943



Sollenberger Silos Corp.

A Nitterhouse Company
Box N
Chambersburg, Pa. 17201 (717) 264-9588
A Producer of Quality Concrete Products Since 1923