



BLOAT

An Old Problem Still Unanswered

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Bloat in cattle and sheep is not new. Unlike the jet plane, rockets, guided missiles, or feed additives, it is not a product of this generation. History indicates that bloat has been recognized as a livestock problem since approximately 60 A.D.

Now, after some 1900 years of trial and error experience plus study, its cause, prevention and cure are still debatable. Perhaps we have given too little attention to the fundamental mechanism of the cow and of the rumen microorganisms ("bugs") that inhabit the paunch. Years ago W. D. Hoard, pioneer dairy journalist, made the profound statement that "The darkest place in the world is the inside of the cow." Recent advances have made this statement void, but we still deal with the bloat problem as if the light was a bit dim.

Her Tummy is a Silo

The cow does not digest feed alone. She has the help of the "bugs" in her paunch. Digestion is by fermentation, and large amounts of gas are produced. Normally the animal eliminates the gas by belching. If the belching mechanism fails, the gas accumulates in the rumen and bloat occurs.

Bloat may occur in various degrees of severity and is of several types. True gas and stable foam are terms used to describe two general types of bloat, but most cases have some of each type of gas. The stable foam terminology is a relatively new term used to describe the condition of gas bubbles adhering to each other like soap suds. This type of more or less stable foam is not eliminated by belching or by canula and trocar.

Various 'Cures' Tried

Many materials have been used, with varying degrees of success, to break up or prevent stable foam formation in the paunch. Included in this list are kerosene, turpentine, household detergents, silicones, penicillin and fats.

The use of penicillin to prevent bloat originated from basic research which indicated that the antibiotic prevented the sudden growth of undesirable "bugs" that were guilty of the foam formation. The use of penicillin-salt mixtures (free-choice) for cattle has been proved helpful in bloat control in some areas of the United States. However, studies in other areas have shown that penicillin loses its effectiveness after a short period of time.

Arizona Experiment Station Studies

In 1956-57 the Department of Animal Science conducted a bloat study in which steers were fed freshly chopped alfalfa — often a potent bloat producer — together with 2.5 pounds of dry roughage per head daily. The steers were also fed two levels of barley (4.1 and 6.8 pounds) and two levels of tallow (.75 and 1.25 pounds) per head daily. Other animals were fed no grain or tallow and served as controls.

During a 56-day period a total of 573 cases of bloat were recorded with 60 steers. The severity of the bloat was recorded as type 1, 2, 3, or 4; number 4 being death resulting from bloat. The graph shows that tallow not only reduced the incidence of bloat but also that bloat produced in the tallow-fed steers was mild and of less economic importance.

Studies elsewhere in the United States as well as in New Zealand have also shown that fats and oils are effective in bloat control. Other "bloat preventatives" previously mentioned — such as silicones and penicillin — do not add to the nutrition of cattle, whereas fats provide energy. The steers that were fed tallow, in the Arizona study, gained 0.25 pound per day faster than those fed only barley, and 0.6 pound faster than the cattle given no supplement.

More Research Justified

Tallow feeding may not be the final



Cochise County

Mon., Tues., and
Wed., 6:55 a.m.—KAWT, Douglas

Coconino County

Tues. and Thurs., 8:10 a.m.—
KCLS, Flagstaff

Graham County

Sat., 10:00 a.m.—KGLU, Safford

Greenlee County

Sat., 10:30 a.m.—KCLF, Clifton
Thurs., 9:30 a.m.—KCLF, Clifton

Maricopa County

Mon. thru Sat., 5:55 a.m.—
KRUX, Phoenix
Sun., 8:45 a.m.—KOY, Phoenix

Pinal County

Mon. thru Fri., 6:45 a.m. & 9:20 a.m.
Also Sat., 7:30 a.m.
—KCKY, Coolidge-Casa Grande
Mon. thru Fri., 6:55 a.m. & 9:30 a.m.
Also Sat., 12:30 p.m.—
KPIN, Casa Grande

answer to bloat prevention, for more work needs to be done to determine bloat-producing mechanisms before we can be sure that any preventative will be effective in all cases. An estimated \$40 to \$45 million annual loss to livestock production in the United States has been attributed to bloat. However, only slightly more than one one-thousandth of that amount of money is currently being spent in bloat research.

Bloat research is expensive because of loss of animals and high labor costs. The Arizona Experiment Station will continue its research on the green-alfalfa-chop bloat problem. Progress has been slow but results are promising.

BLOAT-incidence & severity

