Animal Drug Use Considerations of the Bovine Practitioner

George E. Washington, *D.V.M.*
President of the American Association of Bovine Practitioners

The following paper is solely a personal opinion, not official policy of the A.A.B.P.

I heard a pharmaceutical company defined as, "an outfit that sells you medicine to eliminate stress at prices that cause it." After not speaking for four long years, the toddler son finally complained at breakfast, "Mom, the toast is burnt." His amazed mother exclaimed joyfully, "Junior, you talked!" "Well," Junior replied, "Up to now, everything has always been O.K." I wish I could say the same for the approved drugs we have to use in our own food animal practices.

The dairy practitioner is faced with a real dilemma on drug usage. We have a responsibility to the consuming public to use drugs properly, but we also have a financial responsibility to our own clients to be able to do a good job for them. I feel a great frustration in knowing that if I go strictly according to the label that almost no antibiotics are effective. I have three injectable antibiotics in my pharmacy that are approved for lactating dairy cows:

—Procaine Penicillin G, 300,000 units per ml. The label dosage for cattle, sheep, swine, and horses is 3,000 units per pound of body weight or 1 ml for each 100 pounds per body weight once daily. Penicillin is not effective at this dosage.

—Erythromycin. The label dosage is 1 to 2 mg. per pound administered once daily. I have been told by a distributor that a dosage of 5 mg. per pound has been approved, but has not been put on the label. According to literature, the effective dose is 5 to 7 mg. per pound. The problem with Erythromycin is that it is extremely irritating for intramuscular injection. We need an I.V. form.

—Ampicillin. The label dosage is 2 to 5 mg. per pound of body weight once daily. The 5 mg. dose has been an effective dose for me when it is given twice a day. If I use these three injectable antibiotics that are approved for use in lactating dairy cows at an effective dose, all three have to be used "extra label."

Penicillin Dihydrostreptomycin. is not used in my practice because of potential for residues for streptomycin.

Oxytetracycline (HCL) is not approved for lactating dairy cows, but approved for beef cows and non-lactating dairy cows at a dosage of 3 to 5 pounds of body weight. I use it at 6 to 8 mg. per pound of body weight intravenously.

All the intramammary mastitis preparations are approved for sub-clinical mastitis not for clinical mastitis.

Now I want to take you out to the farm for a routine check that is scheduled for approximately three hours. When I arrive at the farm, the manager informs me that there are a number of other problems that need attention:

- acute mastitis
- two cows off feed
- one heifer that is one week past due

I examine first the cow with acute mastitis. With a temperature of 106, her right front quarter is found to be swollen and edematous. The secretion from the quarter is thin, yellow and serous in consistency with small flakes. She has diarrhea and rumen stasis. How are we going to treat this acute coliform mastitis—with 3,000 units of penicillin per pound intra muscularly once a day with with one of the intramammary mastitis preparations that are approved for sub-clinical mastitis? **NO.** I will look for "extra label" drugs. I will use oxytetracycline intravenously 6 mg. per pound and 500 mg. of gentomycin in the quarter. Have I violated the "extra label" policy?

I now begin to palpate the herd. During the examination, I find five cows that have not been observed in heat. Three have a corpus luteum that will respond to lutalyse. The three cows will be treated with prostaglandin F2 alpha (lutalyse). The label dosage of lutalyse is 25 mg. intramuscularly. Is this 25 mg. dose effective for a 1500 pound holstein? I feel it is not. I use 30 mg. which is to 5 mg. per 250 pounds of body weight.

Two of the cows have cystic ovaries. I will treat these cows with cystorelin (GnRH). Cystorelin is indicated for the treatment of ovarian follicular cysts in dairy cattle. At last I have found a drug that I am able to use as labeled! But how about the treatment of the luteal cysts or anestrus cows with small ovaries, or for cows that have been bred three or more times and need assistance in ovulation? I also use this drug for all of these veterinary problems.

I examine the heifer that is one week passed her due date. Her udder is swollen and she is dripping milk. Upon examination, I find her to have a full term calf in the normal position. The manager and I discuss the case, and we decide to induce parturition. I will use 40 mg. of lutalyse and 30 mg

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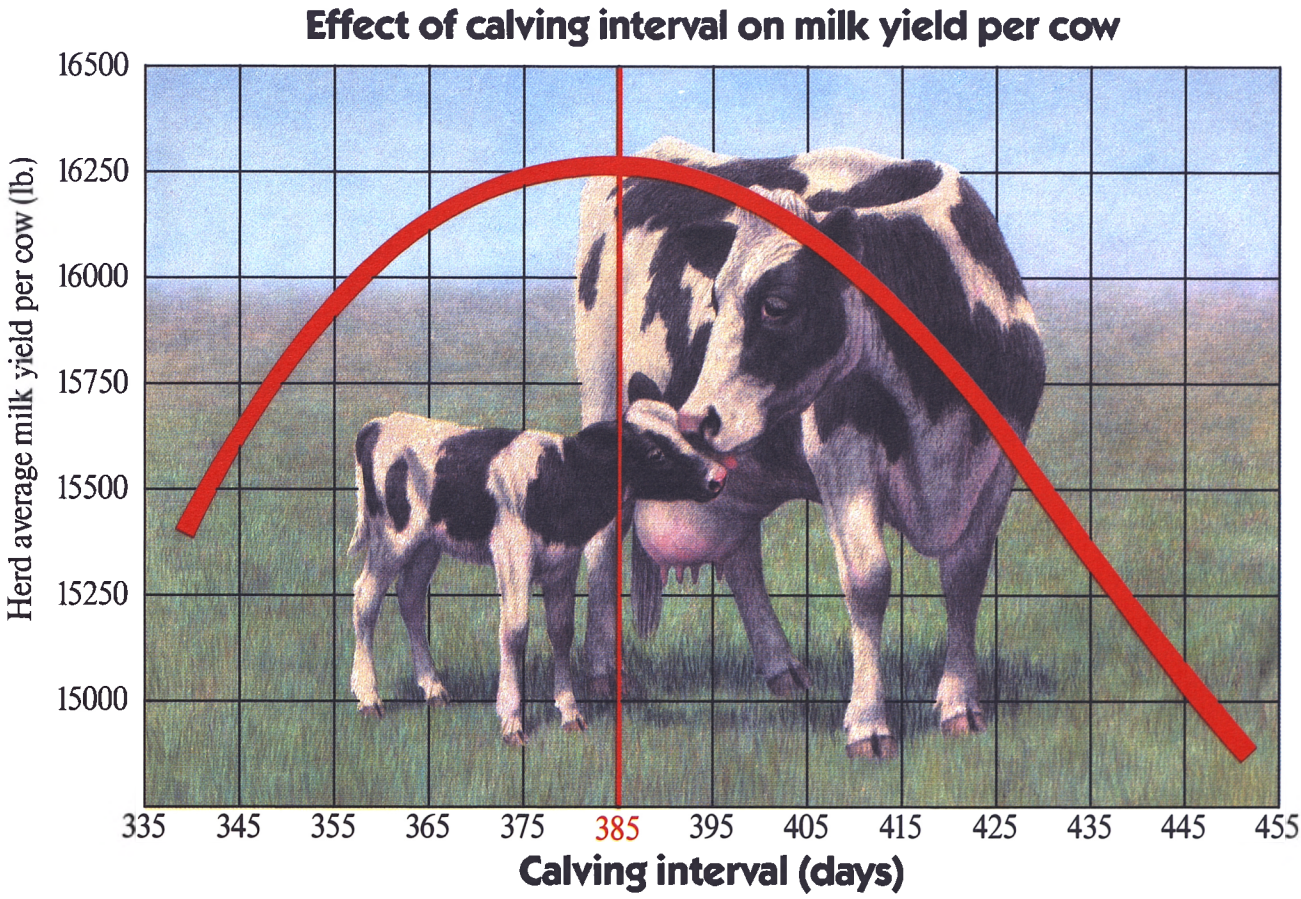

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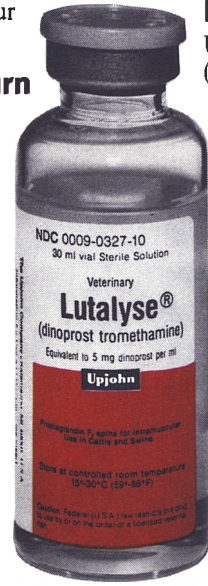

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"A Breeding Program for Dairy Cattle," Dr. Austin Belschner, *Agri-Practice*, Sept.-Oct., 1986, pg. 7-12.

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of dexamethasone I.M. The heifer should have her calf in about thirty hours.

Upon examining the two cows off feed, I find that one has ketosis. I will treat this cow with 500 ml.'s of 50% dextrose I.V. and 20 mg (10 ml) of predef 2x I.M. So this cow has been treated with drugs as labeled.

After examining the second cow off feed, I find that she has a displaced abomasum. Checking my schedule, I am relieved to find that I have the time to perform the surgery during this visit. What type of anesthesia will I use? Am I going to use, "Brutocaine," since there are no tranquilizers or anesthetics approved for the dairy cow? I choose to use 5 mg. of acepromazine I.V. and a local block with lidocaine.

Am I responsible in using drugs in my food and animal practice? I feel I am. I have my clients keep logs on all treated cows and recommend use of antibiotic residue tests. Exactly how accurate are these tests? I heard recently that one test will give 100 percent false positives. A surprising finding by Dr. Jerry Jones from Virginia Polytechnic Institute, showed that 21 percent of cows treated for mastitis during lactation were not free of antibiotics in their milk by the end of the prescribed withholding period. In the study, 21 percent of the cows still had antibiotic residue in their milk one day after the prescribed withholding period. Fourteen percent of the cows still had antibiotic residues two days after the end of the withholding period: nine percent had residues three days after the end of the withholding period. We need information on the reliability of these residue tests. We need help on the withdrawal times for both milk and meat when using drugs "extra label."

We need to educate the public and especially the press that we have the most wholesome and the least expensive food supply in the world. To be able to accomplish this, I call on the Pharmaceutical Industry, the Center for Veterinary Medicine, all facets of veterinary medicine and animal industries to work together to provide food animal practitioners with new and better products for treatment of their patients so we do not have to use "extra label" treatments. If we do not, we may go back to the time when treatment of choice was whiskey and tender, loving care, but we will not be able to use whiskey, because it will be off label. I hope I have enlightened you to the problems that face the dairy practitioner when it comes to proper drug usage. The "dollar and sense" to the dairy practitioner amounts to the fact that "extra label" is the rule, not the exception when using antibiotics, tranquilizers and anesthetics, because we do not have effective or approved drugs in these groups.