

Dairy Management Column From Delaware

BY DR. GEORGE

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What About Selenium?

Do you have repeat-breeding problems in your dairy herd? Is your average calving interval about 13 months or more? Do you have high somatic cell count problems in your tank milk? Do you have mastitis, metritis and retained placenta problems? Are your calves born weak?

If the answer is yes, you'd best check the selenium status of your cows. Blood samples from a few special cases taken to the Penn State University or some other lab and tested for selenium content should tell you if this is the culprit, because here in Delaware, Pennsylvania, Ohio — indeed, in much of the Northeast and Mid-Atlantic states — the soils are selenium-deficient.

That means plants are deficient, too, and normally you must add selenium to your feeding ration at up to 0.3 parts per million for ruminants.

This is the new FDA allowed

maximum limit, and it is three times higher than that allowed originally in 1979. The increase was thought to come closer to the normal selenium content in forages grown on soils with adequate levels.

Continuous feed supplementation with selenium can be justified because it takes only about 3 weeks for animals to become deficient on selenium-deficient diets. The practice helps maintain resistance to infections and keeps all kinds of troubles from starting.

High milk production and longevity in our milking herds — both essential for maximum profits — depend on good health and the ability to resist disease. However, high production imposes considerable stress on our cows and can reduce their ability to respond effectively to disease challenges. How often do you hear dairy farmers say that it's their top cow that got sick again, not the bottom one.

Not only are today's cows bred and fed for higher production, they're also confined to less total space — often with not much pasture at all — and are exposed to

more manure, more mud, more concrete floors, more internal parasites and disease organisms.

Pasture grazing has been replaced by silage bunk feeding, but silage fermentation degrades many vitamins in corn and other forages, including vitamin E. High grain feeding has also become necessary for today's high milk production. But without supplements, deficiencies in essential minerals must be expected, especially in selenium. Even in states like Georgia, which have normal selenium levels in their soils, selenium-deficient forages have been identified, because other factors than soil influence selenium content and selenium availability to animals.

Selenium, together with vitamin E, is of critical importance for maintaining the animal immune system and the integrity and function of body cells. Recent research has shown this to be especially true for newborn calves, which had a better growth start when they receive extra vitamin E.

In other studies, cows fed rations low in selenium and vita-

min E have developed cystic ovaries, uterine infections and significantly increased incidence of retained placenta. These problems have been corrected by treating dry cows and springing heifers three weeks before calving with 10cc of a selenium-vitamin E injection, or 5cc at drying-off time and again 3 weeks prior to calving.

Ohio research showed dramatic benefits of up to 41 percent reduction in mastitis, with fewer cases and shorter duration, where selenium and vitamin E were added to the daily dairy ration or given by injections. The improved milk yield and bonus payments for shipments of milk with low bacteria and somatic cell counts increased herd profits, more than making up for the cost of the added vitamin E plus selenium.

The supplementary levels suggested by this Ohio research were 700 mg of vitamin E and 50 mg of selenium at one time, 3 weeks before calving. Or 3 mg of selenium plus 600 units of vitamin E per milking cow per day. For calves, 125 to 250 international units of vitamin E plus 2 mg of

selenium gave the best daily growth rates.

Stressed cattle performed better, had less sick days, less mortality and better feed conversions when daily rations were supplemented with 800 international units of vitamin E, plus selenium and also some B-vitamins.

A final word of caution — selenium is readily excreted in milk. More information is needed on the allowable tolerable maximum levels of selenium in milk for human consumption. Unnecessary feeding of selenium to our cows should therefore be avoided.



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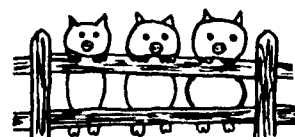
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