

**MANAGEMENT OF THE  
HIGH PRODUCING  
HERD**

We have been hearing and reading a lot about bST in the last few weeks. One thing comes through loud and clear -- Management. We have had two meetings here at Miner in the last month, the first to talk about the use of bST in our herd (We asked people from two dairy farms to join us) and the next one to meet with our vet and feed company nutritionist. We decided that there were things that we still needed to do here before we could use bST. The second meeting really helped us to focus, and Ev decided that it was good enough that we are going to do it on a quarterly basis. By the way, we wrote down what was discussed in the meeting and circulated the notes to everyone involved. How many times a year do you sit down with the key people that work with your farm and discuss your problems and priorities? Think about the money that you have invested in your operation and the cash flow through your operation and you will agree that you need to do this.

One of the things that came through was that in order to make good decisions you need to be able to monitor your animal response. Our vet recommended that we body condition score our animals on a regular basis. I was involved in the ProDairy Reproductive workshops this past week and we discussed this area. I would recommend scoring in the following manner:

Heifers	monthly
Dry cows	weekly
Fresh to 90 DIM	weekly
90 DIM to 220 DIM	Monthly
220 to Dry	bi monthly

Write down these scores. Part of these will be easy to get -- calving, breeding, preg checking, etc. From these data it will then be easy, along with milk output and compositional records, to make management decisions in your nutrition programs and animal management. The bottom line is that bST is expensive and you need to be in a position to first, have a high probability for an economic response and second, to know what your response is.

As a result of bST becoming available we are becoming focused on the weak links in our management program. We are striving to improve so that we will be in a position to use bST in the future. Are you in a position to use bST? You should be whether you use it or not. Following good "bST management practices" will probably improve your productive efficiency by 10 to 20 % even if you don't use bST! Think about it -- don't you want to be in a position to get the 20 % + response from bST if you were to use it?

Charlie Sniffen

**NUTRIENT MANAGEMENT ON THE FARM**

Nutrient management at the farm level involves the integration of those systems in which nutrients are either utilized, altered, or produced. On most dairy operations these systems are crop production, crop storage, livestock production, and waste management. By understanding the dynamics of each system, we hope to manage our nutrients better and minimize the risk of agricultural non-point pollution. Initially, we will focus on the

livestock production unit, the dairy. In later issues, we will investigate the other systems including crop system and manure management.

In concept, a nutrient balance study is straightforward: measure the amount of nutrients purchased, such as nitrogen, and measure the amount of N being sold off the farm. The difference is the balance remaining on the farm. The smaller this amount, the lower the risk of contributing to pollution problems.

The first step in developing any management plan is to figure out where you are. That has been my objective this past month. When I first arrived at Miner, Ev told me that, if there was one thing that Miner excelled at, it's record keeping. Well Ev, you were right. I had to dig a little bit and ask many questions. Sometimes the same question had to be asked several times; folks here have been very patient and helpful.

I started by focusing on the dairy information: rations, amounts of feed, milk produced, numbers of cows, etc. The records provide a complete picture; numbers of cows fed by group, pounds of corn silage, haylage, grain, minerals offered to each group on a daily basis, and forage analyses on a monthly basis.

In 1993, we were feeding 137 head each month. We offered those cows a total of 2,200 tons of forage and farm produced grain. In addition, we offered 211 tons of purchased concentrates and minerals.

Let's take a look at the N-balance on the Institute dairy farm. In a recent article in the Capitol District Agricultural News, Dr. Alice Pell wrote that according to the Dutch, 75 - 85% of the N consumed by cows remains on the farm. When diets were fed containing 15% crude protein (CP) or greater, N retained on the farm increased. The average level of CP in the Miner Institute rations was 18%, so on a dry matter basis, we offered the herd a total of 158.3 tons of crude protein (CP). Convert CP to N by multiplying CP by 6.25, and we have 27.4 tons of N. OK, that is our input for the year. Now, what about output?

How does N get shipped off the farm? Dairy farms produce two products, milk and animals, and both contain N. In 1993, we shipped 581 lbs of N in the form of calves and cull cows off the farm. The N in milk shipped was 8,459 lbs. Nitrogen shipped off the farm totaled 9,040 lbs or 4.5 tons.

A total of 22.9 tons of nitrogen or 83.5% was excreted as either urine or feces. How much of that made it to the manure pit depends on how much was excreted as urine or feces, how the manure was handled after it was excreted, the air temperature, etc.

Can we as managers change the N-balance of our dairy cows? How do we reduce the amount of N remaining on the farm? Alice suggests three areas which offer potential solutions:

- 1) Do not overfeed protein in the ration. Nitrogen from excess protein is usually excreted in the urine.

- 2) Balance rations using different forms of protein

including soluble, degradable, and undegradable protein fractions. Consider energy:protein relationships. (NOTE: I have to get something on this from CS.)

3) Amino acid balancing holds some promise. By feeding a complete balance of amino acids to meet animal requirements, excess N will be minimized.

Over the next three years we will continue to monitor the nutrient balance while we institute changes in management that will minimize the negative impact our agricultural practices have on the environment.

Bob Allshouse

**Editor's note:** Bob Allshouse is a research associate on staff for the coming year, working on our nutrient management research project. He has a broad background in farm management and animal nutrition, most recently at the University of Vermont.

#### TRITICALE-PEA SILAGE PROBLEMS

We're at it again, dumping on triticale-pea silage. The latest reason is a forage analysis from the 1993 crop that recently crossed our desk. While the crop is promoted as high quality forage for lactating cows, some farmers are letting the crop mature a bit longer, intending the feed for dry cows. The forage analysis we examined--and there probably is a lot of triticale-pea silage out there that's similar--was from feed fit for neither dry cows nor milkers. The protein was in the low teens and NDF in the low 60s. So much for making milk with it. Calcium was 0.5%, magnesium 0.2%, and the

potassium level was 3.0%. You might recall from a previous article that for dry cows we want the ratio of potassium to Ca+Mg to be less than 2.2:1. Note that  $3.0/0.7 =$  a ratio of 4.3:1, much too high for dry cows. This doesn't mean that all triticale-pea silage is poor feed; we've seen some that is about as good as the brochures claim it is. However, the crop is a notorious potassium accumulator, and this can cause real problems if you feed it to dry cows.

OK, OK, we know that there are a lot of happy pea feeders out there. Don and Bruce Dimock from Peru had their smiling faces featured in the February issue of American Agriculturist in which they extolled the benefits of triticale-peas. The article reported that they get 1.5 tons/A from triticale-peas compared to 1 ton/A from straight alfalfa. Every man to his own choice, but we'd prefer half a ton less feed and the \$35-40/A seed cost in our pocket. There are pluses and minuses for triticale-peas, but remember that this is still a "new" crop for most North Country farmers. If you're going to plant the crop this spring, here are a few suggestions:

1. Plant early, or don't plant at all. The early part of both the 1992 and 1993 growing seasons were cooler than normal, somewhat forgiving for triticale-peas planted a bit late. Some farmers around here who planted the crop late in 1991--a hot year --barely got their seed cost back.

2. Planted early and harvested on time, triticale-peas can produce good quality forage--for lactating cows, but not for dry cows.