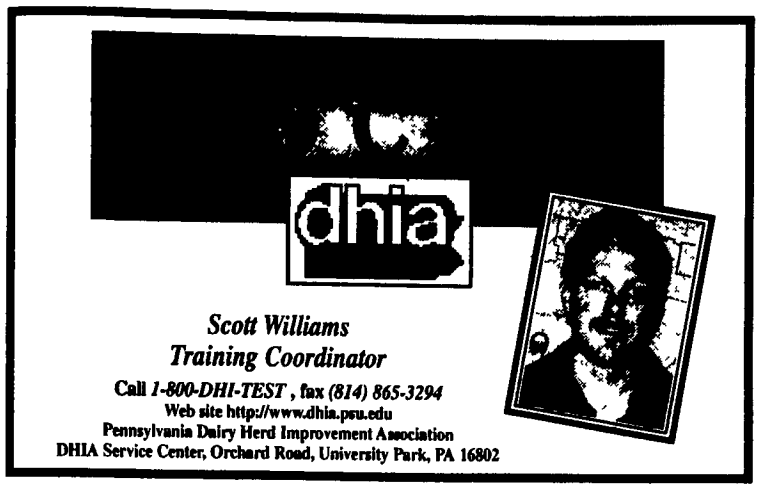


**Question: What is the correct moisture level for our TMR? Will moisture levels affect sorting? How can we tell if sorting is going on?**

If a person had to pick one fault in TMR feeding, it would have to do with feed particle sorting. The fact that we need to process grains so that our cows can maximize their usage leads to enormous differences in particle sizes in a TMR. Add the concept of maintaining forage length to enhance rumen health and we expand these differences. The key is to reach for some compromise.

As for the first question, I see growing concern about proper moisture levels in TMRs. Sorting is not the only problem we face when a TMR is too dry. Palatability also appears to diminish when the feed is dry. As a rule of thumb, I have often seen improvement in cow performance when moisture levels were at a minimum of 52%. There are a lot of variables that could be considered but these might lead to some confusion Allow your cows to tell you what they prefer simply by making a moisture change and measuring the change in intake. Make sure your calculations are in dry matter or else increases that are only in the water portion of the feed might fool you. For example: cows consuming 48# dry matter at a ration moisture level of 50% are eating 96# total feed [48 / (100-50)] x 100 = 96 # fed. Change the diet to 52% moisture [48 / (100-52)] x 100 =100# fed. We would need to add four pounds water to each portion that we are mixing to increase the moisture from 50% to 52%. You should also keep in mind that, although seemingly simple, moisture changes are feed changes and should be done gradually to minimize stress.

Will moisture levels affect sorting? Cows are very capable at getting to what they prefer even in a TMR I watch in amazement at their ability to sort and wonder how they do it with such large muzzles They have all the appearances of being made to eat quickly with no ability at discretion I then look at the beginning and end feeds of a feeding period and see two distinctly different TMRs. Particle size measurement boxes can be used if you do not trust your eyes, but you will see the same result. The balanced diet that we so carefully prepared is not the same diet that our cows are eating. Dry diets seem to allow more sorting than wetter ones. We are trying to cause the finer particles of our TMR to stick to the coarser ones by adding moisture. Other feed products such as molasses and oils can also be used to create this tackiness Water is certainly the cheapest to add and may accomplish the desired effect

We already talked about physical observations and measurements that can be used to determine if we are experiencing sorting Another way that I find

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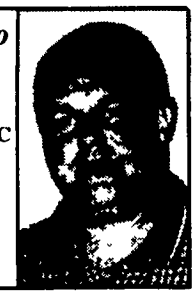

useful is to look at DHIA records MUN typically is thought to allow our cows to tell us if protein to carbohydrate balance is correct. MUN can also tell us about feeding management In this case I would like to show how MUN could be used to measure the possibility that all cows are not eating the same diet. From the Pa. DHIA Nitrogen Management Report I looked at the following

This is a herd that is fed a single TMR to all cows in the

**(Turn to Page A34)**

| | AvgMUN | LowMUN | HighMUN |
|---|---|---|---|
| May 2000 | 13.2 | 7.4 | 18.5 |
| Apr 2000 | 13.0 | 7.9 | 25.2 |
| Mar 2000 | 11.2 | 6.4 | 15.7 |
| Feb 2000 | 10.1 | 5.2 | 20.9 |
| Jan 2000 | 11.8 | 5.8 | 17.1 |