

litter silage is one thing that has enabled them to survive in the cattle business based on today's feed prices. Broiler litter, in their estimate, is worth approximately \$90 per ton.

We hope that this added flexibility of the ensiling process will make it possible for you to utilize cattle manure, poultry manure, or any other material of

plant or animal origin to solve disposal problems as well as provide new animal feed ingredients that will help reduce feeding costs.

Questions

1. Why speed up the ensiling process?
2. Where can I get the *Lactobacillus* culture?
3. What other products can be ensiled by this technique?

Panel Discussion

Dr. Marshall McCullough
Dr. O. E. Hundley
Dr. Wally Koers
Dr. W. B. Anthony
Dr. Charles Dobbins

Question—How do you store this manure before you've added the silage?

Answer—I assume this is cattle waste instead of poultry waste. The whole thing is that you don't store cattle waste over a long period of time. We've got to store animal wastes and have it available in the fall to make wastage out of it using pot residues. Therefore, we would have to stockpile it. Unless you go to rather extensive structure, the pH will go up to 7-7.5. We've found that we can't really use it for animal feeding purposes. So in all these I'm talking about, the animal waste is caught within about one-week intervals and fed. We may feed once or twice a week. So, let me caution you about taking manure out of a deep pit under a slotted floor. We have some problems there. The problem is, if it has bio-degraded it is not very useful for feeding purposes. The problem is how to store it so you can use it and we're working on that one.

Question—When you add pine shavings in with the manure, do you recycle it?

Answer—You can put one brood of broilers and clean out the house but you have more wood fiber than you have poultry litter and therefore it is lower in value. You have to be careful about how much you use because sawdust, with its roughage factor, has no nutritive value.

Question—How much inert waste did you have in animal wastes?

Answer—I would say about 10%.

Dr. Dobbins—On both your litters, it doesn't make as much difference as we first thought whether we have one group of broilers on this bedding or whether you have five. When you get into case laying where you have no fibers, you've got to add straw or hay to make up the fiber. But, we've been amazed at the results regardless of the amount of broilers that have been on that particular bedding. The more uric acid the better it is but it is not that critical.

Question—You said you had problems if you did not have enough fiber. How much do you need?

Answer—We're working with different materials.

With pine shavings you don't generally have a problem whether they are using it for bedding or floor litter. On cage laying manure it runs about 15% or so, but it depends a little bit on how the man operates. As you pick up a little experience, you'll know about what it takes. It varies a little bit on how soupy the material is and how carefully they are adding more.

Question—What are some ballpark figures on the crude protein content left in the manure after use and does it affect milk flavor?

Answer—From a poultry litter standpoint your crude protein is going to 28% or more depending upon the amount of manure there. As far as using this in dairy rations we have done very little of this. Virginia had done some research on odors but they have not shown it affects milk flavor but then the milk was being used for babies, and it being produced by manure fed cows had an esthetic effect and kept research down.

Question—What about the sodium content?

Answer—The sodium in the animal wastes is directly related to the sodium in the ration. It is always going to be higher. In beef cattle tests we're feeding them about 11% crude protein diet, then the animal wastes you collect from those cattle is going to be higher, somewhere around 16-18% crude protein on a dry matter basis.

Question—If you had manure coming from cattle on a real high concentrate ration, how would the ingredients vary?

Answer—As Dr. Dobbins said about the dilution in the poultry wastes, when you come right down to it, it doesn't make a whole lot of difference whether the manure is from concentrate-fed cattle or cattle on a pretty good growing ration. What I was talking about is cattle in feedlots fed for rapid performance; that manure we're most interested in collecting and blending, and we can blend it 40% with the basal diet and not go off the form.

Question—Dr. Anthony, a question about your slide where you had the basal 20-40-60, you quoted 1.2, 1.3, is that kilo?

Answer—Yes, kilograms; 2.71, 2.5 in pounds.