

this time you can replace it usually pretty easy, if there is a such thing as an easy prolapse. Then once you are through it seems one of the dirtiest jobs is always you've got a lot of litter. You've got fluid bottles and dirty sleeves and syringe casings that are laying around. The garbage container in my truck is not that large. Usually it is running over if I don't have it half full already. So then I just take all the trash or non re-usables, put them in the bag and just ask the farmer to dispose of it. The stool and the garbage bag both have other

uses in practice. The garbage bag can be used as an emergency raincoat. If you've ever been to a ballgame as a student you can make a raincoat out of it! Also, the stool sometimes whether you're waiting for the farmer to get the wild OB heifer up to the catch pen, or whatever, sometimes you can trim your fingernails or whatever while you're waiting. And once the job is done you can get back on the road!

Upholstered Freestalls As an Aid to Control of Coliform Mastitis

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Acute coliform mastitis is a notoriously difficult condition to treat successfully, hence prevention is the most effective tool for us to use. Recent studies have confirmed previous clinical impressions that a major source of the infectious organism, *Klebsiella pneumoniae*, is sawdust bedding. (1, 2) Various approaches have been advocated to avoid using sawdust for comfort stalls. These include rubber mats, straw, sand, cement, and various combinations of those. One of our clients has conceived of an alternative bedding system which for lack of a better term I call the upholstered freestall.

This is basically the "If you can't kill it, cover it" principle. We have all used this approach any time we drape a surgical field. It is said that necessity is the mother of invention. The seeds of invention for this system were sowed as my client discovered that he had contracted a bad case of AIDS, which for purposes of this discussion is defined as acute income deficiency situation. This condition was exacerbated by a concurrent escalation in sawdust bedding costs. This escalation was the result of reduced supply due to reduced output by the local sawmills which was caused because none of your clients were building new houses in the fall of 1984.

The original thrust was to develop a means of reducing the amount of bedding material needed over time. Shortly after installation, however we noticed other benefits to the system, most notably a dramatic reduction in the number of clinical cases of mastitis in the herds.

Basically what we are doing is using a woven polyethylene material to cover the sawdust bedding in the freestalls. This prevents the cow from removing the bedding, and effectively prevents the udder from being in contact with sawdust harboring excessive populations of pathogens. The system has been installed in both loop stalls and individual wooden type stalls. The only requirement is that the stall have a 1-1.5 inch slope to the rear and no large curb on the back which could interfere with drainage. All installations to date have been in cement bottomed stalls.

Installation in loop stalls is as follows. First the material which is 129 in. wide is unrolled and approximately 36" is layed on the bottom of the stall. Sawdust is added to a depth of 10-12" unpacked. One must be careful to make a trough in the area between stalls where the loops are cut to avoid the formation of bumps due to the inadequate packing of the saw dust where the cows don't lay. Also the sawdust is raked away from the front of the stall where a 2x4 is placed full length to which the material will be fastened. The material is then folded forward and attached to the 2x4 by nailing a 1x2 tackstrip over the material.

For individual type stalls a 48 in wide material is used. It is of considerably heavier weight than the wide material. Again about 12" of the material is layed in the bottom and the stall covered with sawdust. The remainder of the material is fastened with a wood strip to the sides and front leaving enough slack to accomodate settling and compaction of the sawdust. If there are no sides to fasten to, a 2x4 is placed on the ground in between the stalls and the material is tacked to it in the same fashion.

Since most freestall areas are rather inundated with liquified used hay and nephrotically processed water, an initial problem encountered was moisture accumulation on the bedded surface due to contaminated cow foot prints. This was successfully overcome with a generous application of dolomitic lime at weekly or biweekly intervals. Moisture in limed stalls has not accumulaed in bedding in place for over 8 months.

The advantages to this system are that labor for maintenance and cost of sawdust needed to replace bedding are greatly reduced. One client calculated that these savings paid for labor to install this system and purchase the polyethylene material in 4 months of use. The stalls are comfortable and hold body heat very well. No evidence of abrasions on the lateral surface of hocks as seen in inadequately bedded stalls has appeared in over 1 year of use. Additional long term benefits are derived from reduced

accumulation of sawdust in manure tanks and lagoons.

In herds where coliform mastitis has been a problem we noticed a marked reduction in the number of clinical cases. In one 220 cow herd they experienced 42 clinical cases of mastitis in the first 10 months after this bedding system was installed. The corresponding 10 months the previous year they experienced 96 clinical cases. The herdsman did not request us to do a chi square test to determine if that was a "significant" difference! Though all cases were not cultured, no occurrence of peracute toxic coliform type of mastitis was observed among the 42 cases treated after the stalls were upholstered.

Cultures of the surface of the bedding surface which has been in use for 8 months revealed coliform counts of less than 1000 per square inch. It is generally accepted that coliform mastitis is likely when counts in sawdust reach 1,000,000 per gram. There appears to be no problem with a buildup of bacterial populations on the surface of the bedding.

The only disadvantages to this system noted so far are the tendency for humps to form inbetween loop stalls if the sawdust is not applied thinner in that area. These humps are used as a push off point by the cows when rising, and the material rapidly develops holes in that area. Also the lime seems to weaken the lighter weight material somewhat. Effective lifetime of the lightweight material is 6-8 months if lime is used while installations in drycow areas where no lime is used have lasted 1 year. A recent modification to try

and overcome that problem has been the installation of 2 layers of the material. The theory is that as the top layer shows wear it can be replaced without disturbing the lower layer.

We have installations of the heavier 48" material in place for over 1 year with no signs of excessive wear or breakdown, so I am unsure exactly how long it will last.

Well, this all sounds pretty good, but there are always 2 questions on everyone's mind. How much does it really cost, and where do you get it? The 129" material costs approximately \$2.00 per stall. The heavier 48" material costs about \$3.85 per stall. Currently the material is being distributed by C & N Sales, 77 Willis Rd. Montesano, Wa. 98563. (206) 249-4646. The author does not have any financial affiliation with the above named firm.

In summary, it is apparent that the concept of upholstered freestalls is a workable solution to the coliform mastitis dilemma. Perhaps in the future even more durable material will be found which will give added longevity to the installations.

References

1. Bramley, John "The Control of Coliform Mastitis" Proceedings of the National Mastitis Council Annual Meeting 1985 pp 4-17.
2. Carroll, E.J. & Jasper, D.E. "Coliform Populations in Bedding Materials and Coliform Mastitis Incidence" Proceedings of the National Mastitis Council Annual Meeting 1980 pp 129-139.

Butorphanol Tartarate Analgesia in a Bovine Animal

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It is often said that good things come out of bad situations and this was certainly the case in a sticky situation I was in last winter. It was a Saturday afternoon. I had already performed 3 DA surgeries that day when I went to my next call. The farm was 25 miles from my clinic and guess what the cow had? Another right abomasal torsion. I didn't even bother checking my surgical case for lidocaine since I knew I didn't have any more. So I decided to improvise, which all you practitioners have had to do from time to time. I decided to try butorphanol which I used to provide analgesia in various equine surgeries. So I gave this cow IV butorphanol and proceeded to do my surgery. I found that not only did butorphanol work, it was superior to local anesthesia. Butorphanol provided excellent restraint and analgesia. The cow stood extremely still and did not mind my manipulating of the abdominal organs. She even began eating soon after the abomasum was detorsed. Also skin and abdominal wall closure was easy to perform as the cow did not resist.

Since this time I have routinely used butorphanol to provide analgesia in various surgical procedures ranging from any abdominal procedure to teat surgery. I've found the use of butorphanol to have several advantages to bovine surgery. First it lessens the need for precise local anesthesia. In fact on several cows such as this one, I have performed major standing abdominal surgery without any local anesthesia. Secondly, butorphanol seems to have a calming effect on the cow. She is much more likely to stand still during manipulation of the abdominal organs. This allows us to perform surgical procedures without a lot of worry of the animal moving about during surgery. Third, I have found in several right abomasal torsions that because the drug dose lessens pain they begin eating during the surgical procedure or soon after and I think this helps to speed recovery. Fourth, it is my clinical impression that butorphanol relieves the immediate discomfort of abdominal surgery and cows will not often be humped up as