

ment strategies prior to their general introduction.

- 2) Allow client dairies to derive benefits of these technologies/management strategies with no financial outlay.
- 3) Test the efficacy/safety of an already approved product in a local controlled setting thereby enhancing the veterinarian's ability to make useful recommendations at other client herds.
- 4) Derive financial compensation for time spent designing, executing, and analyzing trial.

As with any new service, unless the practitioner has a specific background in trial design, execution, and analysis, a certain amount of preparatory continuing education is required. Short courses in Trial Design, Quantitative Methods, or Statistics should be considered. The ability to collect and summarize data via a computer spreadsheet or data base management program is also a useful skill. Invariably, however, the most important skill to develop is the ability to critically define the hypothesis to be tested and to be able to carry out the trial *precisely* as it has been planned. In other words, the ability to pay attention to all the little details of a protocol, insuring that bias is minimized and all data are collected in a reliable manner, is ultimately what makes a trial successful and a practitioner/principal investigator invaluable to the project.

Once these background skills have been obtained, the dairy practitioner who wishes to run field trials should

communicate that aspiration, as well as the requisite skills and trial locations that he or she has available to carry out such an experiment, through as broad a network as possible. Possible contacts include:

- 1) Pharmaceutical/biological company sales representatives who call on your practice.
- 2) Pharmaceutical/biological company regional technical service representatives.
- 3) Field research managers in the Research and Development Divisions of these companies.
- 4) Local extension personnel.
- 5) Land grant college animal researchers.

After the right contact is made and the first project has been contracted for, it is imperative that the trial is carried out in a rigorous, professional manner. Oftentimes, even the most enthusiastic dairymen-cooperators can begin to lose interest ... it is critical that the veterinarian anticipates these occasions and has a plan in place to insure compliance with trial protocol. Even if the unforeseen occurs, the practitioner/principal investigator will ultimately be judged on how accurately the trial was carried out, and how timely were his/her communications with the company trial monitor, than on how the final data turns out. As with other Dairy Production Medicine services, a reputation for success is infectious and will ultimately insure the continuing use of the service.

Water: What You See Is Not Always What You Get!

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Water availability is taken for granted by most veterinarians. Adequate intake from a quality water source will improve dry matter intake and overall milk production. My definition of an adequate water supply is for every cow to have all the water she wants, whenever she wants it. Those of us who work in stanchion or tiestall barns where we have individual water cups assume that water is available for however long the cows are in the barn during the day. This is definitely not true. Consider some of the facts that are known about pressure and water flow in pipes. For an example, assume you have a 1" pipe direct from the well deadended at 400 feet. If the pressure at the well is 40 pounds, the pressure at the far end of this 400 foot pipe, if one water cup is opened in between, is 7 pounds. Seven pounds is not enough water to fill the water cup quickly enough for the cow to keep a continual source of water in front of her. I recently had a client who was remodeling his barn, install a 2" PVC looped line completely around the barn and use full 5/8" inside diameter hoses to supply the water bowls. There has been a marked milk production im-

provement in this herd of 3 pounds from before and after the change in the water line. In this particular barn, the cows are housed in the summer season for approximately 14 hours per day. A side benefit was that the cost to install the PVC line was less than the bid for a 1" galvanized line that the plumber wanted to put in.

I have clients purchase old bulk tanks that are either freon leakers or are obsolete because of their size or condition. These bulk tanks make excellent outdoor water tanks for several reasons. They are insulated and will maintain the water temperature so warm water can be supplied to these tanks from heat reclaimers or plate coolers in the milk barn. Additionally, the water supply will not freeze as readily in our colder Upper Midwest climate when the tank lids are closed with blue styrofoam floating on it overnight in winter. When the cows are turned out for exercise or to clean the barn, the lid can be lifted, the styrofoam removed and there is a large tank of water readily available for cows to consume.

Water quality is often overlooked especially in our

stanchion barns. The water bowls function much like pig drinking fountains and it is easy for the pipes themselves to get contaminated with various bacteria. Chlorinating the water supply on the farm will improve intake because it reduces the amount of bacteria present in pipes, fountains, water bowls and large tanks. There are commercial dry pellet chlorinators available for under \$800 that can be at-

tached to the well to chlorinate the water supply for the entire farm. In addition I have many dairy farmers that routinely chlorinate the water tanks, water bowls, and water fountains on their dairies on a weekly basis to keep the bacterial growth to a minimum in their water supply. Household bleach is used at 2-3 oz. per 50 gallons of water capacity.

Mastitis Control Without A Slap In The Face

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The importance of quality milk has been known by our profession for years. As dairy farmers work to improve their milk quality, the level of environmental mastitis appears to be going up as somatic cell counts go down. As our producers do a better job, the contagious bacteria are under control and the only bacteria left are the environmental.

Many new procedures have been introduced to the dairy industry to help dairy farmers reduce the level of environmental mastitis. Things such as predipping, not using water, clipping udders, keeping stalls clean and dry, lot and pasture management, vaccines and nutrition have all been introduced to dairy farmers to help them control environmental mastitis.

No matter what the situation is, the key to environmental mastitis control is to milk clean, dry and well stimulated teats. Even though many dairy farmers practice this daily, they still get the occasional slap in the face.

The cow's tail continues to be a cause of dirty cows. The tail lies in the manure and urine and then swings around covering the cow's body and the entire barn. The tail tends to provide food for flies throughout the dairy facility.

In efforts to fine tune mastitis control even further, the vast majority of my dairy farmers have docked the tails on their dairy cows. By eliminating the tail, the farmers have seen less flies, cleaner cows, and less environmental mastitis. I have yet to have a single farmer that has started docking tails quit.

Tail docking is not for every farm and is something each individual farm must decide on. The procedure is painless and is no more negative to the animals than de-horning or castration. Tail docking is just another procedure that can be used to help keep the cows clean, dry and comfortable.

Tail docking is done by placing an elastator band on the tail 8 to 10 inches below the lower tip of the vulva. The band is placed on the tail and the tail will slowly fall off over the next two to four weeks. I have seen herds produc-

ing over 23,000 pounds dock the entire milking herd and saw no drop in production. In a high producing herd such as this, I can guarantee if the procedure is stressful, production is the first thing to drop. Some veterinarians are using surgical removal of tails rather than banding. It really doesn't matter what procedure you use as long as it is done properly and as humanely as possible.

If the tails are docked too short, there can be an increase in vaginitis because the tail stub gets into the vulva causing irritation. If the tails are docked too long, the stub can knock the farmer unconscious! The rule of thumb is to dock the tail two hand widths (8-10 inches) below the tip of the vulva. In areas where tetanus is a problem, I recommend injecting the animals with two doses of vaccine two weeks prior to the day of tail banding. Even though the incidence of tetanus is low (less 0.5%), you still may want to eliminate this risk.

The majority of my dairy farmers dock the tails on the heifers when they come into the steam up group two weeks before calving. To start out the herds, they dock the entire milking herd at the same time. The reason most of my dairy clients do not dock tails on calves is because there is too much variation in tail length. The farmers have found more consistent tail length by docking springing heifers.

Even though there are some people that are against tail docking, I have found this procedure to be very beneficial to the dairy farmer's profitability. This is a procedure that must be properly discussed with each farmer and let them decide whether it will work for them or not. I have found many of the good farmers are docking tails regardless of how their local area feels about it. They realize the value of having clean, dry and comfortable cows. The other benefit that is often overlooked is a better attitude of the dairy farmer. When farmers no longer are slapped in the face with a dirty tail and their herds produce higher quality milk, their attitude is positive. Positive attitudes breed success.