

numbers will follow.

Much as I like the KOOL DRI RAINWEAR, there is one drawback compared to regular coveralls — there are no pockets. To solve this problem I have come up with two sources of pockets. First off, I wear a fishing vest to supply small pockets to carry items I routinely use. Needles and syringes, a penlight, and a thermometer are a few examples. With 20 pockets available you can tailor a fishing vest to your particular needs. For large pocket space I now use DUROLITE and GARDENMASTER tool aprons. These are made of DuPont Cordura material which is lightweight, durable, and washable. I have several of these “holsters” that are designed for different types of calls. One is for herd health work, one for “sick cow” calls, and one for lameness work. These are carried inside my grips (which incidently are PLANO and CONTICO plastic tool boxes) and quickly strapped onto my waist as needed. Between them, the fishing vest and holsters provide very flexible “custom made” pocket space.

I have experimented with a couple of other items to improve my practice comfort. Neoprene fishing gloves keep hands warm and dry while providing good finger dexterity. Unfortunately, they are not as durable as I had hoped. I plan to try scuba gloves this winter. I now use an Expedition Series cap made by NORTHERN OUTFIT-

TERS. Besides being warm, it absorbs sweat from the skin and wicks it away from your body. The cap is fully washable and the ear flaps can be adjusted to match temperature conditions.

My most recent project has been wearing Spandex (Lycra) tights. If you have tired legs at the end of each day you should seriously consider buying a pair. They are very comfortable and seem to massage your legs with every step. However, in spite of their light weight, they are too warm to wear when the temperature is over 75 degrees.

KOOL DRI RAINWEAR, P.O. Box 120, Reinholds, PA 17569 (800) 523-8025.

Cabelas \$40, (800) 237-4444 catalog FBB-BCA, item FB-97412

Dunns \$40, (800) 223-8667, item 10-641 color #6.

Gander Mountain \$45, (800) 558-9410, item 699 L 5653

Willow Creek Fishing Vest \$30, Cabelas catalog AFF-BAG item AB-92610 (grey), AB-92612 (loden), AB-92613 (tan).

Northern Outfitters, Expedition Series Hat (801) 224-5342

Durolite & GardenMaster, Custom LeatherCraft, 811 West 58th St., Los Angeles, CA 90037-3631 (213) 752-2221, check local hardware store

## Conducting Field Trials in Your Practice: The ABC's of Getting Involved

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In recent years, there has been a continuing evolution in the professional roles assumed by the practicing dairy veterinarian. Decreasing cow and dairy farm numbers, as well as the increasing needs and expectations of remaining dairymen, have necessitated a broader involvement of the veterinarian in all aspects of the dairy operation. This approach, popularly known as Dairy Production Medicine, has been wholly embraced as a practice “modus operandi” by a growing number of dairy veterinarians and, even more commonly, most dairy practices incorporate at least some aspects of this practice philosophy in their services. While the list of potential services offered in a Dairy Production Medicine practice can be quite lengthy (e.g., ration formulation, performance records analysis, financial records analysis, milking equipment evaluation/mastitis prevention program, heifer raising evaluation, personnel training and management, sick cow treatment, etc.), it is the purpose of this paper to describe (albeit briefly due to time constraints) yet another service that could be included in a comprehensive Dairy Production Medicine program . . . the conducting of field trials on client dairies.

With the expansion of the USDA and FDA regulatory

functions, there has been a significant increase in the need for biological and pharmaceutical companies to conduct experimental trials in a “real world” clinical setting. Although this type of trial is inherently more difficult to control and monitor, regulatory requirements and/or the need to assess a product in specific “on farm” conditions necessitates this type of experimentation.

Field trials are generally conducted for one or a combination of the following reasons:

- 1) Regulatory requirement for product approval (answering formal questions of efficacy or safety).
- 2) Experimental use of an approved product in a non-traditional manner.
- 3) Use of an approved product in a particular management environment (e.g., variable geographical setting, climatic condition, housing type, etc.) to determine efficacy/safety within that specific environment.

The conduct of field trials can benefit the dairy production practitioner in a number of different ways:

- 1) Gain experience with new technologies/manage-

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