Fighting Mastitis, Selecting Sires Top Concerns

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LANCASTER (Lancaster Co.) — Heifer housing, profitable culling, DHIA's Prostaph testing support, and strategies for staying competitive for the 1990s, dominated the topics for part two of Lancaster County's Dairy Days.

Sponsored by the Penn State University Extension Service, the first day of the two-day dairy days dealt mainly with BST, keeping pesticides out of groundwater, and cow reproduction and production.

Day two, however, included two pannel discussions by area farmers. The first group told what decisions they've made over the past several decades and how they've surivived, and what they plan to do in the 1990s to continue in agriculture, if not dairying.

The second group of dairy farmer pannelists, provided first hand information on heifer raising facilities they have built, how much it cost to build, why they chose the designs they did and what benefits or drawbacks they've experienced.

Starting the day with an update on paper bedding, Daniel McFarland, extension multi-county ag engineering specialist, provided a basic review of paper bedding studies done by several colleges and urged farmers to "work with it and see what works for you."

He summarized the advantages of using paper (newspaper) bedding: better absorption than straw or sawdust; lower concentration of heavy metals; slower (though not inhibited) bacteria growth; inexpensive.

On the other hand, McFarland said there are a few special handling requirements with paper bedding: it can compact and may require more labor. He recommended cutting the bedding into silver dollar-sized pieces and to use a base layer of straw when using paper with bedded packs.

McFarland said newspaper has also been of some concern with wind. To prevent littering and wind-blowing problems, he suggests using smaller amounts of bedding and changing more often.

There are some things yet to learn about newspaper bedding.

When asked, McFarland said he had no combustibility studies available to use for comparison between newspaper and other types of bedding material.

Within a little more than a month, McFarland said he is aware of two incidents — one in Lancaster and one in Berks counties — in which a burning piece of farm machinery set near newspaper bundles caused fires. Both fires were relatively minor.

McFarland said he plans to do an informal study, later this year, of what it takes to start newpaper bedding on fire.

Later in the dairy seminar, McFarland again took the podium and discussed his field of expertise — animal shelter designs and the effects of ventilation on dairy cattle growth, health and production.

McFarland recommended a series of special buildings for raising calves and heifers which minimize stress and maximize growth and health needs for young cattle, while providing quick and efficient cleaning, feeding and monitoring aspects for those caring for the animals.

Gary Rogers, with the Penn State University, reviewed sire selection reasons and methods and provided formulas for dairymen to use in making sire selection decisions. The formulas are flexible and can be modified to meet each dairyman's needs.

Copies of the formulas with explanations are available through the Penn State University Department of Animal and Dairy Science.

Rogers said the formulas are based on a number of areas of concern in managing a breeding program.

According to Rogers, the most important aspect in deciding sire selection should be milk production values.

Of the other traits which are currently heritable to a significant degree, Rogers said only a few body conformation aspects are worth concentrating on in order to indirectly select for healthier animals.

Rogers said that selecting for higher udders, better teat placement and better feet angles can apparently decrease the incidence of udder health problems.

Although there is no national mastitis reporting program that would allow finding and breeding strains of cattle with natural resistance to the disease, Rogers said he did an extensive study of existing traceable traits and compared them to apparent resistance to disease. He said the results of his work supports "what some of you already know, that selecting for udder and teat placement does work."

However, because the bottom line in any business is profit over expense, Rogers said farmers should value milk production at least three times more important than other aspects.

Rogers said the formulas can give farmers an easier method for ranking the top selections for their needs.

He said that, although it is not popular, most AI technicians, if given the formulas, should be able to rank the sires according to three major factors; most economical, best for herd improvement, and least risk.

In his second presentation of the day, Rogers also provided guidelines for profitable cow culling and longevity. He provided data gained from studies on culling and profits and shared a formula to help farmers help make better decisions in cow culling.

Basically, Rogers said the decision to cull a cow should be based on the value of the cull cow and the costs of raising a replacement cow.

He said that for the month, now is a good time to cull, because of relatively good prices for slaughter cows, and relatively low costs for raising calves to adulthood.

He also has authored a hand-out available to farmers through the extension office.

Robert Eberhart, with PSU department of veterinary science, talked about Prostaph milk antibody test for detection of staphylococcus aureus mastitis, one of the two highly communicable forms of mastitis.

According to Eberhart, staphylococcus aureus can go undetected in a cow for a long time and then be spread throughout the rest of the herd, before the original sick cow develops any visible symptoms. The disease is believed to be spread mostly by farmers while milking.

A test, called Prostaph, detects the presence of antibodies in milk that cows make to fight the bacterial infection. Thus the test provides an indicitive tool for farmers to control this highly contagious and problem disease.

The results of a Michigan University study on the test showed an overall 98 percent effectiveness.

However, during followup studies done by PSU, the test was only about half accurate in determining which cows had the disease.

The test is still very good, though, Eberhart said. He said the test rated about 93 percent accurate in determining which cows were free of the disease.

Eberhart said to use the test effectively, as it is understood, the entire herd should be tested if the herd is suspect. He said a culture test of the milk tank can indicate whether the herd has a problem.

If so, then a total herd Prostaph testing can be done. Those that test negative should be either milked first, or milked seperately. A follow-up test on the cows that intitially tested positive can be performed, at the very least. Best is to have those cattle culture tested, he said.

He also said that apparently farmers have been doing some things the right way. Eberhart said that those who practice milking heifers first, for whatever reason, are in effect protecting their herd from future damage, since heifers are least likely to have the mastitis and pass it on to the older cows.

Lebanon Dairy Days Features High Producing Cow Analysis

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LEBANON (Lebanon Co.) — The potential use of the milk-increasing protein hormone, bovine somatotrophin (BST), continues to be a topic of much concern at area dairy seminars and a recent dairy day seminar here was no exception.

However, other aspects of dairy herd management were stressed throughout the dairy day talks, and little time was spent on the ongoing debate as to whether BST should be or shouldn't be used.

Sponsored by the Lebanon County office of the Penn State University Extension Service, the dairy day seminar featured several representatives for BST-manufacturing companies, a Michigan farmer who allowed his herd to be used in a test, and a local dairyman who stands undecided on the issue of whether to use BST or not, but sells milk from his high producing herd to a local dairy that has set a policy of not accepting BST-produced milk.

All speakers, except for the local farmer, had spoken the day before to a Lancaster crowd (see the March 3 issue of Lancaster Farming) and addressed their areas of expertise in cow maintenance and milk production during the morning session, and then provided a short discourse on how BST might affect those aspects.

The morning session began with a talk by Bill Chalupa PhD, from the University of Pennsylvania, who talked about the nutritional needs of high producing cows. In the afternoon, Chalupa talked again about the nutritional aspects of BST-influenced cows.

Chalupa said balance rations were the key to providing proper nutrition to high producing cows and recommended the services of a nutritionist in developing a total mixed ration (TMR) from the forages and foods available to each herd owner.

He said that without proper balancing, some unexpected problems can occur.

According to Chalupa, potential ammonia deficiencies can lead to low fat output through starvation of the fiber digesters in the cow's system.

"It's when we're feeding only corn silage or feeding high amounts of hay instead of silages, that we could have an ammonia deficiency. We have run into situations of this and what we see in the cow is, the cow's milk has a low fat test.

"It has a low fat test because we're starving the fiber digesters. So we need to pay attention to the soluable protein," Chalupa said.

"Another thing we need to pay attention to, is that when we add fat to our rations we also need to adjust the bypass protein in those rations," he said.

The reason for doing so is because "rumen microbes do not use fat as a source of energy.

"When we go above three percent fat, we add more bypass protein to the ration in order to compensate for the lower amount of microbial protein that will be synthesized," Chalupa said.

"When we formulate rations, we consider the maintenance requirement of the animal, how much milk the animal is going to give and then how much feed will she consume."

According to Chalupa, in concocting a ration for a cow in an attempt of producing about 30 kilos of milk, which converts to about 80 pounds of milk, farmers should remember they need about 1.6 megacals of net energy per kilo. "And that's not too hard to achieve," he said.

A panel of speakers at Lebanon Dairy Days take questions about high producing cows from the audience. From the left is Vince Wagner, local dairyman, Ken Nobis, Michigan dairyman with BST trial herd, Dr. Bob Patton, a nutritionist in for Monsanto, Mike O'Conner, PSU dairy specialist, Bill Chalupa, University of Pennsylvania, New Bolton Center and county extension agent host Kenneth Winebark.

"But when we go to higher levels of production, those (increased) levels of net energy can only be achieved by adding fat to the ration," Chalupa said.

"If we try to do it (increase net energy) with grain, we will lower the fiber content and have all kinds of problems.

"So, as we go above the 30 Kilos, or 80 pounds of milk, we have to add fat and that impacts on the amount of bypass protein we need," he said.

According to Chalupa, for production levels at or below the 30 kilos of milk, "about 38 to 39 percent protein in a ration would probably be about fine.

"Above, though, and . . . we are getting about 49 percent. Put more fat in, we need bypass protein. How can we formulate a ration?" he said.

Chalupa said to begin formulating a ration, the concentrate portion of the ration needs first analysis.

"Starting at 30 kilos, we started putting in whole cotton seed and just a small amount of megalac," he said.

"I normally max out my whole cotton seed at about 10 percent of the ration dry matter and that will give somewhere around 5 to 6 pounds of whole cotton seed per cow, per day.

"A couple of the reasons I do this: I want only about one third of my fat to come from whole cotton seed; I've seen cases where higher levels of whole-cots have been

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