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DAIRY PIPELINE

Calfhood vaccinations don't cost, they pay. This month brought more disturbing news about milk pay prices, and it is important to control costs as much as possible. However, I caution dairy producers to not cut corners when it comes to herd health, particularly young stock vaccinations. The most important diseases to vaccinate young dairy calves (besides Brucellosis and other veterinarian administered vaccines) are IBR, BVD (Types I & II), PI3, and BRSV. Recently, I was asked about calves that just weren't as healthy as they could be. The calves were well fed and cared for but when I questioned the owner about their vaccination program, it became apparent that no program existed in between vet visits. There isn't enough room here to go into all calfhood illnesses, so let's concentrate on one illness that is easily treated yet highly virulent. The calves I observed had classic signs on BRSV or Bovine Respiratory Syncytial Virus. Calves with BRSV generally have dry, hacking coughs. These calves may also have eye and nasal discharges and symptoms of pneumonia. Left untreated they are very susceptible to colds, pneumonia, and other respiratory illness. BRSV attacks the papillae or hair like lining of the air passages leading to the lungs. The papillae act as miniature brooms that "sweep" foreign material from the lungs toward the mouth and nose. BRSV doesn't affect the calf as an infection like pneumonia; rather it attacks and destroys the papillae, making it difficult for the calf to clear its air passages. The result is a coughing calf that truly can't catch its breath. According to Purdue University's Disease Diagnosis Laboratory, BRSV has been recognized as a pathogen in cattle since 1970. The presence of this virus in cattle herds is recognized worldwide. In the United States antibody prevalence has been reported to 65% to 81% in the cattle population. Cattle most susceptible are beef calves six weeks to 13 months of age and dairy calves two weeks to nine months. In younger calves mortality rates are increased by secondary bacterial infections. Infections with BRSV have been implicated as the initiating cause of shipping fever and other respiratory disease complexes again because the animal has no defense against the introduction of pathogens. Humans can also carry Syncytial Virus so limit young calves exposure to young children. Prevention is the key to dealing with BRSV infections. Good husbandry and well-ventilated housing is mandatory for the prevention of all respiratory diseases, but vaccination is necessary to prevent BRSV infections. Both modified live vaccines and inactivated vaccines are available. Both types have pros and cons. Modified live vaccines tend to stimulate stronger neutralizing antibodies responses. Both modified live and inactivated vaccines stimulate non-neutralizing antibody and prime T cells in calves.

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How do first, second and third or later lactation cows compare? Your monthly DHI 202 lists projected 305 day, 2X, ME averages for first calf heifers, cows in second lactation, and cows in third or later parities. The youngest cows in the herd should be genetically superior because they result from more recent sire selection decisions. Older cows are survivors of culling decisions for milk yield. So which group should give the most milk? The table below shows the average age of first, second, and third and later lactation cows for alternate years over the past decade, along with the differences in 305d-2X-ME milk yields.

Table 1. Trends in age and ME milk yield for Virginia cows on supervised DHI plans.

Date	Average age (mo)			Difference in 305d-2X-ME milk yield (lbs)	
	First lactation	Second lactation	Third^{+} lactation	Second minus first	Third^{+} minus Second
Dec 2003	27	41	68	532	-942
Dec 2001	27	42	69	446	-752
Dec 1999	28	42	69	629	-654
Dec 1997	28	42	69	526	-486
Dec 1995	28	42	70	364	-492

Heifers don't give as much milk as second lactation cows, so the effect of culling offsets the genetic advantage of the younger cows. Notice that the trend is towards younger cows in all three groups. Heifers freshen younger, but older cows are younger, too. Herd size in Virginia has increased from 124 cows/herd in December 1995 to 137 cows/herd today. Older cows are at a disadvantage in many larger herds because of time spent on concrete, in the holding pens, on the way to and from the parlor. And there is little patience for the needs of older cows as herd size increases, unless management is willing to accommodate the older girls. The difference in ME's between second and third parity cows suggests a trend to harder times for the older

cow in Virginia herds in recent years. The trend is somewhat disturbing. Are we becoming so concerned with efficiency of moving cows through the parlor that we don't give the older cow a chance, or is the old girl simply more trouble than she's worth? I'm at the age where biased towards the elderly takes over, but there is reason to question the trends towards less milk in older cows compared to second lactation cows. Older cows do carry a lifetime's accumulation of war wounds, perhaps scar tissue from mastitis and mobility problems. They seem reasonably fit, reproductively speaking, averaging 163 days open across the state compared to 161 days for second lactation cows. But they don't milk like the younger cows. Check your management system for evidence of discrimination against the elderly in your operation. It makes economic sense to give your senior citizens every reasonable opportunity to make you money, and the trend in the table says that we don't do as good a job of that as we used to do.

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** Upcoming Activities**

Professional Dairy Heifer Growers Mar 31 – April 3
Eight National Dairy Calf & Heifer Conference, *Hotel Roanoke & Conference Center*

Hokie Cow Classic May 27
Virginia Tech's New Championship River Course

Raymond L. Nebel
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