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Rearing parameters see little improvement

Bottom Line

with
AL KERTZ*

THIS column (Kertz, 2001) previously compared 1996 data from the U.S. Department of Agriculture's National Animal Health Monitoring System (NAHMS) with 1991 data from the National Dairy Heifer Evaluation Project. In 2002, the NAHMS survey report was completed again in 21 major dairy states.

More recently, the 2007 study was conducted in 17 of the nation's major dairy states, representing 79.5% of U.S. dairy operations and 82.5% of U.S. dairy cows, and information was collected from 2,194 dairy operations.

Comparative data from each of these studies are shown in the Table.

While 24 months of age at first calving has been generally accepted as a reasonable goal, and some have even suggested that it should be as low as 20-22 months of age, the reality is that little progress (0.6 months) has occurred over the last 16 years toward meeting that goal. Also, this goal does not specify what would be considered reasonable bodyweights, heights and condition scores. Thus, there is room for further progress in achieving the 24 months of age goal.

There was a progressive decrease in age at first calving with small (fewer than 100 cows), medium (100-499 cows) and large (500 or more cows) herds averaging 25.4, 24.8 and 24.0 months, respectively. While 1 in 10 operations (8.5%) reported an average age at first calving of 30 or more months, these operations accounted for only 4.0% of heifers.

Mortality

Preweaning mortality went up to 11.1% in 1996 from 8.4% in 1991. However, in 2002 and 2007, it came back down to 8.7 and 7.8%. That was accompanied in 2007 by 6.5% stillbirths (not recorded in previous surveys). So, in essence, 14% of the calf crop was lost annually; half of that would be a more viable achievement. Of those deaths to calves born alive, scours continued to be the major unchanging problem at about 57%, with respiratory problems being next at 23%.

After weaning, mortality dropped slightly in 2007 to 1.8%. However, respiratory-related deaths were still nearly 50% of the reason for that number, followed by other known causes, unknown causes and scours at 13%. As noted in my 2001 column, the bigger issue is respiratory problems not resulting in death but that impair affected heifers for life.

NAHMS data comparison for selected years

	1991	1996	2002	2007
Age at first calving, months	25.8	25.5	25.4	25.2
Stillbirths (died at birth or within 48 hours)	—	—	—	6.5
Preweaning mortality, % of heifer calves born alive	8.4	11.0	8.7	7.8
% of deaths by producer-perceived cause				
Scours/diarrhea	52.2	60.7	62.1	56.5
Respiratory	21.3	24.5	21.3	22.5
Joint or navel problems	2.2	2.4	1.7	1.6
Other known causes	14.1	7.8	6.1	9.9
Unknown	10.2	6.0	6.9	7.8
Weaned heifer mortality, % of heifer inventory	2.2	2.4	1.9	1.8
% of deaths by producer-perceived cause				
Scours/diarrhea	18.4	14.7	12.3	12.6
Respiratory	34.8	45.4	50.4	46.5
Joint or navel problems	1.0	1.2	1.4	1.0
Other known causes	27.5	21.3	19.9	24.6
Unknown	18.3	17.4	16.0	14.6
Age newborn separated from mother, % operations				
0 hours (before any nursing)	28.0	48.7	52.9	55.9
Less than 12 hours	39.6	23.0	22.5	22.2
12-24 hours	22.0	16.9	15.9	14.6
More than 24 hours	10.4	11.4	8.7	7.3
First colostrum feeding management, % operations				
First nursing	33.7	30.7	30.5	45.1
Hand-fed bucket or bottle	64.0	65.4	64.8	50.9
Esophageal feeder	2.3	3.8	4.4	3.8
No colostrum	0.0	0.1	0.3	0.2
Colostrum hand-fed in first 24 hours, % operations				
2 quarts or less	25.6	20.1	21.4	23.3
More than 2 but less than 4 quarts	48.2	45.5	47.2	45.8
4 quarts or more	26.2	34.4	31.4	30.9
Weaning age, weeks				
Operation average	7.9	8.2	8.4	8.2
Heifer average	8.2	8.6	—	—
Preweaned heifer housing, % operations				
Freestall	—	2.6	2.1	2.7
Individual animal area	33.9	30.3	58.1	67.9
Multiple animal area	33.3	37.8	30.3	14.2
Tied	19.3	9.7	—	8.9
Drylot/pasture	6.8	16.1	—	0.6
Hutch/superhutch	32.7	38.1	None	None
Contract rearing, % operations sent elsewhere	1.6	5.0	3.6	9.3

*Dr. Al Kertz is a board-certified, independent dairy nutrition consultant based out of St. Louis, Mo. His area of specialty is dairy calf and heifer nutrition and management. To expedite answers to questions concerning this article, please direct inquiries to *Feedstuffs*, Bottom Line of Nutrition, 12400 Whitewater Dr., Suite 160, Minnetonka, Minn. 55343, or e-mail comments@feedstuffs.com.

Colostrum management

There has been a major improvement in early separation of calves after birth since 1991, with some progressive improvement from 1996 to 2007. However, the numbers show that nearly one-fourth of operations still do not separate calves from their dams until more than 12 hours after birth, and nearly another one-fourth are not separated from dams up until 12 hours but greater than 0 hours after birth.

There was an unexpected increase — to 45% of operations — in calves getting their first colostrum by nursing from their mother. The problem with this practice is that the amount and quality of colostrum the calf receives is not controlled. This relates to studies showing that 40-50% of calves nursing do not get adequate antibody protection from that colostrum sourcing method. Consequently, only 50% of calves received hand-fed colostrum, a backward step in that practice since 2002.

While it is now recommended that calves receive four quarts of colostrum within the first four hours after birth and another two quarts by the end of their first 24 hours of life, only about 31% of calves could have qualified for that recommendation in 2007. This was a slight reduction from 34% in 1996 but an increase from 26% in 1991.

Another part of a good colostrum management program is testing for antibody levels in colostrum. This is especially important if the first day's quantity of colostrum fed is not more than four quarts. Nearly 70% of calves fit this categorization in 2007.

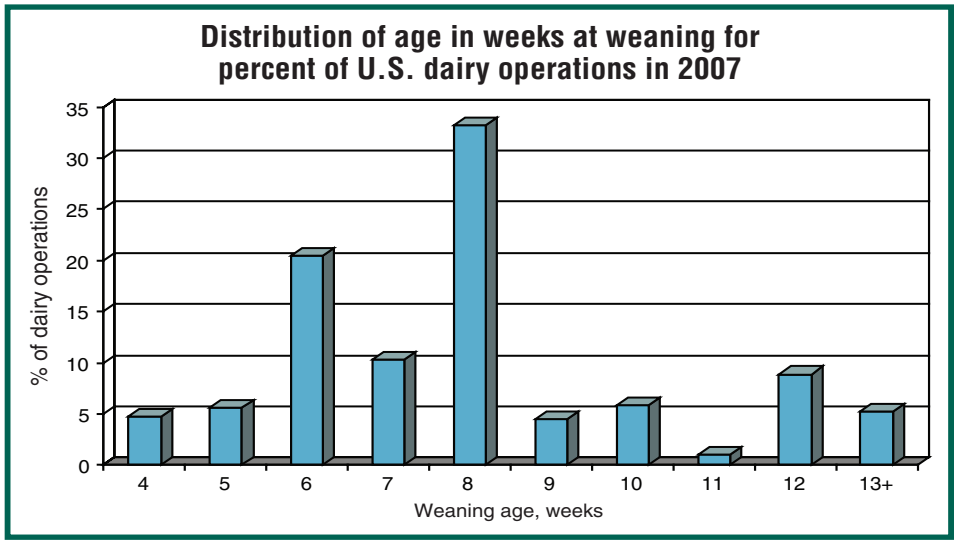
According to the 2007 report, the percentage of operations testing colostrum for antibodies were: 7.6% of herds with fewer than 100 cows, 19.8% of herds with 100-499 cows and 45.2% of herds with 500 or more cows. Of all of those herds that did test for immunoglobulin levels, 44% used a colostrometer and 42% relied on visual appearance.

Weaning age

Weaning age was similar at 8.2 weeks in 2007 versus 8.4 in 2002, 8.2 in 1996 and 7.9 in 1991. The distribution of ages when calves were weaned (Figure) was very similar to 2002.

Roughly one-third of operations weaned at eight weeks of age, but 25% more weaned beyond that age, while 38% weaned at a younger age. This average age at weaning did not differ much among herd size, with 8.2 weeks for herds with fewer than 100 cows, 7.9 weeks for herds with 100-499 cows and 9.1 weeks for herds with 500 or more cows. The other significant weaning age peaks were 18% at six weeks and 10% at 12 weeks.

This indicates that age at weaning, *per se*, is probably the primary factor in determining when operations wean their calves rather than a specific feeding and management need of the calf.



In the first case, age (based on facilities available, work schedules, general practice, etc.) determined when calves were weaned, while in the second case, the feeding and management needs of the calf determined at what age calves were weaned. In the first case, the number of hutches or individual calf spaces available and the timing (i.e., two or three months of age) and subsequent movement of calves into groups were likely the determining factors. In the second case, a specific milk or milk replacer program along with provision of a good starter and clean water defining calf performance were probably the determining factors. There are opportunities and benefits for most operations weaning at an earlier age.

Housing

Housing information gets a little confusing because in 2002, data were shown separately for heifers housed inside or outside. Thus, 58.1% of unweaned calves housed inside were in individual pen areas and 30.3% in multiple animal areas. There is a similar issue in how 2007 data were recorded. There is also overlap in categories for weaned heifers as the same categories were used for unweaned heifers, weaned heifers, lactating cows and dry cows.

For weaned heifers housed outside, 2007 data (not shown in the Table) were: 35% in multiple animal inside area, 23% found in dry lot/multiple animal outside area, 12% in freestalls, 11% on pasture and 6% in tie stall/stanchion.

While contract rearing of calves and heifers tripled from 1.6% in 1991 to 5.0% in 1996, 2002 data indicated a 30% decrease to 3.6% from 1996, while in 2007, contract rearing increased to 9.3%. Further evidence of contract rearing may be found in "animals not housed on operation" being 4.7% for unweaned heifers and 7.7% for weaned heifers as a percentage of operations.

In many categories of data, there was a pattern that large herds achieved better results. This was likely due to these herds having better facilities, separate work groups that are managed more closely with established protocols and more financial and other resources.

Other extensive data can be found in this report at www.aphis.usda.gov/vs/ceah/ncahs/nahms/dairy.

The Bottom Line

Little or no improvements in many calf and heifer rearing parameters were found in 2007 versus 1996, but there has been some improvement compared to 1991. Lack of further improvement indicates that good fundamental calf and heifer feeding and management practices have not been increasingly adopted or achieved.

There is good general agreement on goals for raising calves and heifers — such as for death and health losses, bodyweight and height parameters and age at first calving. However, since these are largely not being achieved, this would indicate that goal setting, *per se*, is not likely limiting but, rather, that priority and commitment in achieving those goals has not been established and practiced.

References

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