

Stillbirths represent sorry state for calves

Bottom Line

with
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LET'S say you have a business that has some unique characteristics, such as:

- The assets only produce or last two to four years.

- You have to order ahead, and the potential quality of the asset ordered continues to increase each year.

- From the time you order, it requires nearly three years before the asset can be of value and sold or produced.

- You have to house and supply these assets with inputs before they reach the sale or production point.

- From the time you place the order and the items are in your physical possession, losses may average 10-20%.

- Once the items are in your physical possession, you may have further losses of 10% or more.

By now, you may have guessed that you are in the dairy production business, but how many businesses would tolerate those kinds of losses?

Still, the number of calves born dead does average 10% or even up to 20% (Ettema and Santos, 2004), and the number of calves that die after a live birth but before weaning averages either 8.7 or 10.5%. The first number is in Part I of a National Animal Health Monitoring System (NAHMS; 2002) report, while the second is in Part II (2003).

For Part I, the denominator includes all operations that reported if any calves died. For



Part II, only operations that reported the cause of death were included in the calculations (operations reporting no deaths were inadvertently removed from the denominator). This also is true for the weaned heifer deaths (1.9 versus 2.8; J.E. Lombard, personal correspondence, 2003 and 2005).

Which number do you use? I would use the larger number because it is more likely that calf deaths would be underreported, depending on availability of accurate records, and it is human nature to not want to report poorer results.

Let's attempt to more fully address the number of calves born dead. This value was not recorded or reported in the 2002 NAHMS study.

In few instances have I found that dairies keep accurate records on this number. They may be able to partially resurrect data from the number of calvings and live calves resulting, or they may have the records, but this issue does not get attention. Dairies seem to accept that there is not much they can do about it.

Surprisingly, the definition of a stillbirth is a calf that dies not just

prior to but during or within 24-48 hours of parturition (Philipsson et al., 1979) as cited in Meyer et al. (2001). The study used data from seven midwestern states available through the MidStates Dairy Records Processing Center with the cooperation of the National Association of Animal Breeders.

Because the data were used in the national calving ease program, every birth was recorded, whether or not the death or survival of a calf was noted. Farm personnel observed the birth and recorded all information at the time of birth.

Only about 15% of herds cooperating in this study had complete reporting of calf deaths or survival. Twin births were not included in these data since there was incomplete recording of multiple births in the early years of data collection.

All information was included from a herd if it had more than 90% of all calf deaths or survival reported from 1985 to 1996 (1 = alive and 0 = stillborn within 48 hours). All calves were from sires of North American artificial inseminations.

Scores for dystocia were: 1 (no

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assistance), 2 (slight problem) or 3+ (needed assistance). Records with gestation length exceeding ± 2 standard deviations (SD = 7.5 days) from a mean of 280 days were excluded. Only herds and sires with at least 25 total births during the entire period were included.

Other variables included in the analysis were parity of the dam, season of birth and sex of the calf. A total of 666,341 birth records were available after all edits.

Some of the key findings were:

- In seven random samplings of herds, stillbirths averaged 11.1% with a range of 10.6-11.4% for first-calf heifers but averaged only 5.7% with a range of 5.5-5.9% for older cows. So, first-calf heifers had twice the incidence of older cows.
- Dystocia averaged 28.7% with a range of 28.1-30.0% for first-calf heifers but averaged only 10.7% with a range of 9.9-11.4% for older cows. So, first-calf heifers had nearly three times the incidence of older cows.
- From 1985 to 1996, there was a progressive increase in stillbirths in first-calf heifers from 9.5 to 13.2% with slight or no increases in dystocia scores. During that same period, older cows increased in stillbirths from 5.3 to 6.6% with no real changes in dystocia scores. Thus, first-calf heifers had stillbirths increase at a rate of 4% per year, or twice that of older cows.

• Odds of stillbirths were greater during summer months than during winter months and for first-calf heifers versus older cows, with 27% and 22% greater odds of a stillbirth, respectively.

• Female calves had 7% lower odds of being stillborn than male calves from first-calf heifers but 12% higher odds of being stillborn than male calves from older cows. This most likely reflected male calves being larger (Kertz et al., 1998) at birth, which is more negative for the relatively smaller birth canal area of a first-calf heifer compared to an older cow.

• At all levels of dystocia, the probability of a stillbirth in first-calf heifers and older cows increased from 1985 to 1996. This increase over time was greatest when assistance was needed at birth and lowest with unassisted births. When assistance was needed, dystocia affected the calves of older cows more than the calves of first-calf heifers.

Two limitations of this study were that data were not differentiated

between the number of calves that died before birth as opposed to those that died during the first 48 hours after birth, and twins were not included. While the lack of the former distinction would tend to decrease stillbirth numbers, if only those calves that died before birth were included, twins generally would create more calving problems and stillbirths.

In the study by Ettema and Santos (2004) with three large commercial herds in California, calving difficulty was lower in cows delivering females than males (1.36 versus 1.81), cows delivering single calves had lower calving difficulty than those with twins (1.57 versus 2.19) and incidence of stillborn calves was lower (13.5%) for first-calf heifers averaging 24.6 months of age or older compared with heifers (16.1%) averaging 23 months of age or younger and heifers (19.8%) averaging 23-24.5 months of age.

Only subsets of growing heifers were able to be measured for weight and height, so it was not possible to clearly relate stillbirths and calving difficulty to the size and developmental state of heifers for their respective age at first calving.

In a field study by Cornell University student intern John Boerman (personal correspondence, 2005), information was collected from 17 New York dairies ranging in size from 75 to 1,200 cows. The range in calves dead at birth was 3.0-17.6%, with an average of 7.5%.

At the November 2005 Elite Produce Business Conference in Las Vegas, Nev., Dr. Gordy Jones of Fair Oaks Dairy Farms in Indiana recounted experiences at the Visitor Center, where live calvings are on view for visitors. As I recall, the woman who takes care of these calvings had a 3-4% average for calves born dead compared to about more than twice that for the rest of the herd.

So, simple tender loving care is a major factor, especially now, when it seems that the temptation to assist cows in calving is so prevalent without always knowing for sure what stage of labor the cow is in and whether she really needs help then.

Interest in cross-breeding dairy cows is at least partially due to decreased calving difficulties and stillbirths (Weigel, 2005; Cassell, 2005). Most recently, Adamec et al. (2006) found that the incidence of stillbirths increased 0.25 and 0.20%

for male and female calves per 1% increase in inbreeding first-calf heifer births. While effects of inbreeding declined with parity, they were consistently unfavorable.

The Bottom Line

Calf losses average 20-30% from stillbirths and from calves born alive that die before weaning. There is a need to keep records on this situation to ensure that heifers are well grown since they have two to three times the incidence of calving difficulty and stillbirths than older cows, to use calving ease bulls, to account for the effect of inbreeding and to re-evaluate conditions and calving employees' level of competency to deal properly with cows calving.

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