

# *Impact of Dystocia on Health and Productivity*

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The birth of a heifer calf on a dairy operation represents the beginning of the next generation. Most of the time, these calves have the best genetics of all animals in an operation. Unfortunately, the time around birth is when the calves are at the greatest risk of dying. In addition, this period is the time dams will frequently experience health problems as well. Difficulty calving, commonly referred to as dystocia, usually increases the risk of problems, including death, for both the calf and dam.

National studies have shown that close to 40% of all heifers and 20% of all dairy cows experience some difficulty at the time of calving. A preliminary ILM trial conducted in 2000 by Dr. Kevin McSweeney on Colorado dairies along the Front Range also found that dystocia occurred frequently and impacted both the calves and the dams.

Although the high rate and negative impact of dystocia has been publicized, producers tend to underestimate the incidence on their own operations. According to the National Animal Health Monitoring System's (NAHMS) Dairy 2002 report, producers reported that only **3.7%** of cows experienced "other reproductive problems" which included dystocia. More controlled studies have shown that the incidence of dysocia is closer to 30%.

*The calving difficulty score is based on the amount of assistance at birth needed to deliver the calf. Although traditionally a 5 point system has been used, a 3 point system is simpler yet equally effective. Assign a 1 if no assistance is given, a 2 if one person can deliver the calf without a mechanical device, and a 3 for hard deliveries that require more than 1 person, a mechanical device, or surgical intervention.*

Based on our earlier trial and other studies suggesting the negative impact of dystocia on cow and calf health, the ILM program initiated a larger study involving 3 dairies close to Fort Collins. The study started in the fall of 2001 and continued for 1 year. Dams were enrolled into the study as they calved, assigned dystocia scores based on assistance needed at delivery, and then the health of dams and calves was monitored for a period after calving. Our study showed that closer to 50% of first calf heifers and 30% of older animals required some assistance at calving as compared to the 40% and 20%, respectively, reported in previous studies. More than 40% of the calves that died prior to 120 days of age were stillborn (i.e. died at or within 24 hours of birth). We were not able to specifically track those calves born dead versus those that died within hours after birth, but we believe that a large proportion are born alive, but die shortly after birth. Many of these post delivery deaths could be avoided by instituting additional supportive care measures to calves immediately following dystocia. Simple strategies to decrease the rate of dystocia and the overall stillbirth rate could greatly impact dairy profitability.

The study followed the calves for 120 days after birth and cows for the entire lactation to monitor the impact of dystocia on health and productivity. The odds of calves dying within 120 days of age increased with the difficulty of calving as measured by the amount of assistance needed to pull the calf. The study found that approximately 5% of heifer calves and 10% of bull calves were stillborn and 14% of all heifer calves born, died within 120 days of age. Heifer calves were more likely to experience a respiratory or digestive illness if they required assistance at calving.

Cows were also affected by dystocia. They were more likely to experience uterine compromise (including retained fetal membranes, metritis and pyometra) and a respiratory ailment if they required assistance at calving. Cows with dystocia were more likely to be culled and were at significantly increased odds of dying within 14 days of calving. Although cumulative milk production at 30 days was significantly decreased in cows requiring assistance, the cumulative production at 90 days was not different. These results suggest that cows that survive dystocia suffer the effects for a couple months afterward.

The effects of dystocia can be minimized with worker education and management. Fortunately, relatively minor management changes can decrease the impact of dystocia dramatically. Based on national and local studies documenting the large percentage of animals needing assistance at calving, training in calving management would be beneficial to all dairy operations. Since many farm employees do not have extensive training in managing calving problems and traditional techniques used by managers may not be in the best interest of the cow or calf, on-farm education is an ideal place to begin producer and worker education. The Integrated Livestock Management Program has a calving management training session that is specifically tailored to the individual operation. Prior to the training the ILM personnel visit your farm to familiarize themselves with your facility and operative goals. The training session is then tailored to your individual facility. A training CD is also being developed and will be available soon. The CD will not only serve as a resource for those completing the training course, but can also be used to train new employees.

We believe that all dairies, based on our research, should be monitoring dystocia rates and stillbirth rates just like one would monitor milk production. The pertinent information includes the calving difficulty score; the birth status of the calf (dead/alive), and sex of the calf. The lactation of the dam should also be recorded so that dystocia rates can be monitored by lactation. With this small amount of information, one can easily determine the proportion of cows in each dystocia score by lactation and the stillbirth rate for bull and heifer calves. Although we believe the three farms included in our study are above average with regards to calving management, the rates of dystocia and stillbirth are higher than expected. If you find that dystocia is a problem on your dairy, we would be glad to help either with monitoring tips or education of your employees. In addition to hands on training, articles on dystocia management and calf care can be found in past issues of the Colorado Dairy News posted at <http://www.cvms.colostate.edu/ilm/outreach/cdn/archives.htm>

***Figure 1***  
***Calving Difficulty Score:***  
***An Indicator of Dystocia***  
***Severity***

- |   |                                  |                               |
|---|----------------------------------|-------------------------------|
| 1 | No assistance                    |                               |
| 2 | 1 person assisting               | without mechanical device     |
| 3 | >1 person assisting,<br>delivery | mechanical device or surgical |

*Figure 2*  
***Estimates of Incidence of  
Dystocia in Dairy Operations***  
***( Listed as percentage of all calves born)***

National estimate of stillbirths (heifer and bull calves)	7%
ILM study estimate of stillbirths (heifer and bull calves)	8%
Stillbirth rate – heifers	5%
Stillbirth rate – bulls	10%
Death loss in heifers to 120 days of age	13%
Dystocia rate in first calf heifers	50%
Dystocia rate in older cows	30%