

Vet Call

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Economic considerations for preventing calf disease

A substantial proportion of cattle illness and death occurs during the first six months of life. Previous "Vet Call" columns have discussed some of the causes and prevention of calf diseases, such as scours, pneumonia and navel ill.

The economic losses associated with calf health problems include not only the loss associated with selling fewer live calves, but they also include the cost of treatment and the often-unrecognized reduction in weight of calves that become sick compared to their herdmates that remain healthy.

Your own herd records may indicate an average reduction in weaning (or sale) weight between healthy calves and those that were treated between birth and weaning. A Nebraska trial showed that calves that became sick during their first 28 days weighed about 35 pounds (lb.) less at weaning than calves that remained healthy.

In addition, for those who retain ownership of calves through the feedlot phase, research showed that calves that did not experience early disease gained an average of 0.1 lb. more per day during a 204-day finishing period than calves that were treated within the first 28 days of life.

The most effective strategies to prevent diseases in calves between birth and weaning are to decrease the rate and severity of calving difficulty and to increase the sanitation of the environment in which calves are born and to which they are exposed the first few weeks of life. Sanitation is improved not only by protection from mud but also by protection from inclement weather and other stress and by separation from sick calves.

Prior to making changes in the ranch's health and production management, producers should determine the amount of expense their particular farm or ranch can afford when implementing practices

that would decrease illness and death of calves. The first step is to use records from the past several years along with a pen and paper (or computer spreadsheet) to determine your current level of loss.

Production variables in your farm's analysis should include percentage of cows bred that weaned a calf, average weight of calves at weaning (or sale), average annual cost for treatment of calf diseases, price received for calves sold, cost of feed and current preventive health costs. All of these variables will change from one year to another, so use an average sale price, illness rate, treatment cost and death rate as indicated by your records as representative of your operation.

Once you have an accurate economic description of your herd and the cost of calf health problems, compare past economic performance to that projected if rates of illness and death were decreased by 20%, 40% or 60%.

The full effect of any reduction in rates of illness and death is manifested in three ways: an increase in income resulting from increased sale weight of healthy calves vs. calves that become sick before weaning; decreased costs attributable to fewer calves needing treatment; and increased income because of fewer deaths, which resulted in more calves being sold.

On an individual year or herd basis, the greatest return for improvements in preweaning rates of illness and death will be in years (or in herds) when calf health is the most challenged and when the price received for calves is highest. Low prices received for calves at sale and low rates of illness and death can combine to limit the available economic benefit of improved health programs in some years (or in some herds).

Once an economic return is estimated for decreasing calf health problems by a reasonable amount for your farm, evaluate your current calf health problems and identify problems in groups of dams, pastures or other management groups. By identifying primary areas of deficiency on a particular farm, management changes can be prioritized on the basis of economic effect.

For example, using farm records for a 100-cow herd, a veterinarian and a producer could agree that the dystocia rate in 2-year-old cattle is the primary calf health problem on the farm and that a 20% decrease in the herd's rate of calf illness and death is realistic.

The recommended changes would include improved nutritional development of heifers from weaning to breeding and during gestation, as well as the use of easy-calving bulls, providing these changes could be accomplished within allowable cost constraints.

The producer and the veterinarian compare average production over the past several



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years to predict production if calf health were improved, and they find that \$744 are available to achieve their goal of a 20% reduction in health problems.

Assuming 15% of the herd were composed of heifers, the \$744 would not be spent equally among all 100 females. Instead, the available capital for improved heifer development was \$49.60/heifer ($[\$744 \div 100 \text{ females}] \div 15\% \text{ heifers} = \$49.60/\text{heifer}$).

In contrast, some problems affect all cattle in the herd, regardless of age. Using the example herd, \$744 available capital would then be spent equally on all females ($\$7.44/\text{cow}$ or heifer).

When the primary problem is that of germ exposure and stress because of muddy calving and nursery facilities, simple mathematical calculations can be used to determine breakeven costs for changing management or facilities.

Changed income potential incurred by moving calving dates to months that traditionally have less inclement weather or by increasing facility expenses by building additional fencing or other facilities should

be evaluated to determine whether an economic advantage could be gained with reduced calf health problems.

When considering facilities costs and their effect on potential farm income, those capital improvements can be amortized throughout the predicted life span of the improvements. For example, if the available \$7.44/cow were spread throughout the five-year expected life span for facilities improvement, available capital for improvements in fences, pastures or structures would be \$37.20/cow ($\$7.44/\text{cow}/\text{year} \times 5 \text{ years} = \$37.20/\text{cow}$).

Changes in nutritional programs, breeding systems, pasture utilization and facilities have the potential to increase costs for a farm or ranch over currently used management systems. Before initiating these changes, economic benefits must be weighed and guidelines established for each ranch and manager so the cost of an improved calf health program does not exceed the economic benefit.

Identifying potential benefits for implementing a calf health plan and

quantifying the costs to implement each component of the plan can be used when formulating a proactive strategy that has the greatest potential for economic reward.

To minimize death and illness of calves, planning must take place well in advance of the calving season. Selecting calving and nursery pastures, planning feed delivery systems that minimize crowding and creation of muddy conditions, and implementing steps to minimize calving difficulty through bull selection and proper nutritional programs must be accomplished months before the first calf is born.

Over the next few months I will be writing about specific organisms that cause calf scours and methods to control them. As you read these upcoming discussions, consider this month's topic of economic evaluation of health programs.



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