Nutrition Management Yields Greater Returns

Effective nutrition management yields a greater return to beef producers in improved animal health and food product quality than any other aspect of a total herd health program, reports the American Veterinary Medical Association (AVMA).

As consumers place greater demands on producers to provide leaner, higher quality products, the role of nutrition becomes increasingly important in quality meat and milk production.

"Many producers tend to focus on livestock weight gain alone, because it's easy to measure," says George L. Crenshaw, DVM, Woodland, Calif. "However, today's veterinarians are emphasizing total physical condition which can be measured by condition scoring animals.

Livestock producers have long recognized energy and protein needs as critical nutrition factors affecting overall animal health and weight gain. Veterinarians working with producers today are focusing on nutrient content as well in developing livestock nutrition management programs to minimize disease problems, improve body condition and increase weight gains.

"We try to bolster the immune system to protect animals from respiratory illnesses," says Thomas Noffsinger, DVM, Benkelman, Neb. "Without proper nutrition, the immune system is not effective in protecting against these diseases."

Respiratory diseases are the most common problems among feedlot cattle. The immune system must be fueled with energy protein and necessary trace minerals — zinc, copper, selenium and iron — to successfully combat potential virus infections.

Dr. Crenshaw believes stronger emphasis on nutrition is needed at the breeder or cow-calf level. "If we can influence producers to implement correct trace mineral programs in growing calves, these animals will have a headstart on performance -before breeding or the feedlot."

Studies reported by David Hutcheson, an animal nutritionist at Texas Agricultural Experiment Station, Amarillo, indicate that trace minerals are critical to immune system responsiveness.

For example, Hutcheson says that supplementing zinc in the diets of feeder calves exhibiting signs of stress improved their weight gains and reduced the number of treatment days per calf. His data also indicate that supplemental zinc aids in the calf's ability to fight off disease.

Iron, selenium and copper deficiencies also have been associated with depressed immune response in cattle.

'Nutrition is the greatest economic factor affecting profitability of livestock operations," says James Sears, DVM, Bridgeport Neb. "Producers must carefully evaluate productivity of their feed dollars. If you cut back on nutrition when cutting costs, marginal nutrient deficiencies and imalances may result in a weakening of animal immune systems. An increase in disease problems will cost producers a lot more in the long run."

In addition, a variety of other, non-respiratory illnesses may be prevented or treated by adding trace mineral supplements to livestock rations. For example:

— Zinc supplements in cattle rations may reduce foot rot.

— Selenium deficiencies have been linked to white muscle disease in horses. This results in muscle damage due to an accumulation of lactic acid in the muscle.

— Copper deficiencies may result in amemia and poor or no weight gains.

"The veterinarian's role differs rom the nutritionist, who focuses on the onverstion of food energy to growth and dded fat," said Dr. Crenshaw. "The vetrinarian's nutritional focus is to make ure animals receive appropriate protein, mtrients and minerals to improve their health, minimize disease and maximize performance."

Performance factors which can be improved through a balanced nutrition program include fertility, milk production, body condition and weight gains.

"Producers are wasting their nutritional dollars if they are not strategically planning nutrition and considering the factors affecting maintenance requirements of their livestock, such as timing of the reproductive cycle," Crenshaw adds.

Cow fertility suffers if the cow is undernourished. In addition, the energy requirements and nutritional needs of pregnant cows increase greatly. If these needs are not met, calf health and milk production may both suffer.

Animals raised in different regions of the country and under different conditions will have varying nutritional needs. Factors influencing nutritional needs include weaning, shipping distance, weather, weight, age and sex.

Dr. Crenshaw recommends producers thoroughly analyze their feedstuffs and strategically form diets that are the most cost effective in providing for their herd's pattern of production.

"Producers should know the exact makeup of their feed. They should formulate the amounts and mixtures that will cost the least while providing the best mixture to meet livestock needs," he adds.

Factors Associated With Heifer Dystocia

Using data from 1,178 first-calf, two-year-old heifers in 14 herds, Oregon State University researchers examined the relationship of various factors with dystocia. Incidence of dystocia averaged 34 percent and ranged from 11 to 69 percent among herds,

Variables correlated with dystocia and with calf birthweight are presented below along with their respective correlation coefficients (the larger the number, the stronger the correlation).

Variable	Dystocia Score	Calf BW
Calf birthweight	.35	–
Heifer age at calving	-.23	NS
Calf sex	-.22	-.22
Heifer's pelvic area/calf birthweight ratio	-.17	NS
Heifer prebreeding weight	NS	.38
Heifer birthweight	NS	.37
Sire birthweight	NS	.25
Gestation length	NS	.17
Pelvic area	NS	.15

NS = not significant

The above results indicate there will be less dystocia in older heifers that have a higher pelvic area/calf weight ratio and give birth to lighter calves, especially heifer calves. Calf birthweight was by far the most important factor associated with dystocia.

SOURCE: H.A.Turner, 1992, Professional Animal Scientist