VETERINARY CALL

by Bob Larson, Kansas State University

Making Animal Health Decisions

Choices producers make play a role in overall herd performance.

Decisions have consequences for cattle producers. Decisions about which bulls to purchase, which cows to cull, stocking rate and length of the grazing season, and how to best use vaccines and other biosecurity tools to protect cattle health all have short-term and long-term effects.

While it is impossible to avoid all wrong or unwise decisions, everyone would like to improve the frequency of good decisions while minimizing the effects of poor decisions. One reason perfect decision-making is impossible is that we never have all the information needed to avoid mistakes. Therefore, we must make the best decisions possible even though we have imperfect information.

The process of transforming information into decisions starts with determining what information we currently have available, what is missing, and the likelihood and cost of getting the missing information.

Much of the information needed to make decisions includes a range of possibilities. It is often wise to create most-likely, worst-case and best-case scenarios, and then consider the likelihood of those possible outcomes to balance the risk and rewards of each decision.

> "Much of the information needed to make decisions includes a range of possibilities — the range of possible sale prices, possible feed prices and possible health problems."

Decisions about what types of veterinary interventions provide the greatest benefit given how much they cost in terms of time, effort and money requires knowledge about four questions: 1) how often would the disease problem occur without prevention measures; 2) if the disease does occur, how much harm does it cause as measured by pregnancies lost, death loss or decreased growth performance; 3) how much of the disease effect is reduced by the intervention; and 4) how much does the intervention cost in terms of time, effort and money.

Rarely does one person have all the information needed to make good decisions. For example, although abortion-causing diseases such as IBR (infectious bovine rhinotracheitis) and BVD (bovine viral diarrhea) are a relatively low risk any given year for many herds, available vaccines can prevent abortions in most cases, and the cost to administer the vaccines is relatively low. When deciding whether or not to use an IBR-BVD vaccine to prevent abortions, the cattle producer has the most accurate information about the cost in terms of time, effort and money to give the vaccination, a researcher will have the most accurate information about the effectiveness of the vaccine in near-ideal situations, and the herd's veterinarian has the most accurate information about how likely these diseases are to occur and the effectiveness of the intervention in a specific herd situation.

By combining the expertise and experience of different people who each have some of the information needed for a good decision, the final decision is likely to be better than if any one person made the decision based on their information alone.

The goal of any animal health decision-making process is to gain insight into the factors and interactions influencing the risk and effects of disease and its prevention.

It appears to me that decisions that stand the test of time are most often based on good, but imperfect, information that is updated as situations change and are made after consultation with others who have appropriate experience and knowledge. AJ

Editor's note: Robert L. Larson is a professor of production medicine and executive director of Veterinary Medicine Continuing Education at Kansas State University.