aAa® Animal Analysis—60 Years of Helping Dairy Farmers

by Philip Hasheider

Turning an original idea into an effective, easily used program that delivers expected results separates leaders from the followers. "William A. (Bill) Weeks was a leader," says James Sarbacker, manager of the worldwide aAa organization. "But being true to his unique character, he took a much different direction that led him away from the mainstream of cattle breeding theories. He followed his intellectual curiosity to its conclusion with the development of his aAa Animal Analysis program."

The history of modern animal breeding can be traced back to Robert Bakewell, of Leicestershire, England, and Gregor Mendel, commonly known as the father of heredity. Bakewell developed the first principles of animal breeding when applying them to his cattle, sheep, and pigs by using a methodical procedure for imprinting selected physical characteristics to be retained in successive generations. Mendel developed and explained the principles under which these characteristics were passed from parents to offspring.

"But," says long-time Weeks associate Charles Clark, "Imprinting characteristics and defining how they are transmitted still did not equate to a breeding program. At least not one that explains how to mate two animals to consistently produce better offspring. And then replicate it successfully over several generations."

During the succeeding decades following Mendel, many theories surfaced attempting to answer that question. For some, breeding the best to the best and hoping for the best was their guide. For others, linebreeding or inbreeding to one particularly impressive ancestor was another.

Throughout his life, Weeks was a keen student of cattle and breeding principles and mastered the theories of Bakewell and Mendel. Weeks' son, Thomas, recalls his father, "Dad had a gift for concentrated observation and intense study and he noticed the way offspring resulted from different kinds of parents. And he wondered why that was until he figured it out.

"He also had an extraordinary, photographic memory. I know that for a fact. That gave him total recall of cows, bulls, people and events in an instant. And I witnessed that many times."

Weeks eventually discarded the prevailing cattle breeding theories and created one from his own original observations and study, and molded it into a workable method that could be used in his barn and with his cattle.

In June 1950, Weeks introduced a unique breeding guide he had created and developed and named it Animal Analysis. "He quickly attracted several like-minded associates to form a group known as Animal Analysis Associates," Sarbacker says. "That name is still used today in North America. In Europe and other countries outside the North American borders, it is known as Weeks Analysis."

"The main thrust of his program was dairy cattle of all breeds," Clark adds. "Weeks stated that his analysis method also works for beef cattle, swine, goats, horses, and sheep. Other supporters, users, and students of his program have also applied his analysis principles in breeding chickens and flowers."

Once you accept the idea that every species possesses physical qualities which can add to or detract from their usefulness, productivity and health, you will begin to understand the basis of analysis.

Purpose of Analysis

From the beginning, the purpose of analysis was to help farmers create more profitable, trouble-free cattle through a breeding program that balanced the physical contributions from the sire to the needs of the dam. "Owning better cattle would make it easier for a farm family to improve their financial situation and Weeks believed that his analysis program could help them accomplish that," Sarbacker recalls. "That was extremely important to him."

Weeks understood, perhaps better than most and especially in those early days, that there were different ways to measure a cow's profitability, not just exclusively by pounds of milk produced. He also knew that cows staying in production over several lactations possessed other desirable qualities including easy calving, which reduced birthing injuries; having more total offspring, which would generally provide a replacement for themselves; and exhibiting fewer health problems or injuries that resulted in reduced veterinary costs.

When an above average number of herdmates performed likewise, there typically was a surplus of young stock which could be used as herd replacements, herd expansion, or sold to other farmers needing to replace theirs. "To Weeks, profitability was also measured by reducing herd turnover, requiring fewer costly veterinary visits, and selling surplus breeding stock," Clark says.

"Dad understood that there would be freaks of nature," Tom Weeks remembers. "There would always be those that reach the outer-most tip of the production or type bell curves. But he believed that the most progress in a herd would be made when you minimized or eliminated those created at the bottom end." The question farmers continually asked Weeks was, "How do I do that?" And he offered analysis as his answer.

What is Analysis?

Analysis is the study of an animal's physical parts and their relationship to each other. It is not a description, measurement, or estimate but, rather, a logical thought process that separates the whole animal into its' component parts, understanding how to correct the deficiencies while retaining positive characteristics already present.

The basic idea of analysis, as provided by the aAa organization, was most simply stated by Weeks as "a cow should not be mated to a sire with weaknesses of the same nature as the cow already possesses." Analysis believes that just as deficiencies need to be brought into balance, keeping positive qualities in equilibrium is equally important.

"Weeks observed that animal physiques possessing structural extremes were less likely to live full, productive lives, although exceptions would always exist," Sarbacker explains. "He believed that most weaknesses resulted from selection practices that led to an extreme physical form or an unbalanced body structure."

In other words, the extremely refined cow could produce a large volume of milk at an early age but not have sufficient strength or capacity to maintain udder and body

health to last for several years. The large cow could have great capacity and stay healthy but not have the refinement to produce a sufficient milk volume for her body size.

In explaining these fundamental concepts Bill Weeks stated, "Any animal will tend to be generally wide or narrow, long or short, high or low, rough or smooth, strong or frail, thick or thin, heavy or light, rather than some unnatural combination of substance and dimension. This tendency for kinds of cows to be similar throughout is called relationship of parts, and makes possible the expression of a cow's character quite completely with a single word or symbol, such as "Round" or "Sharp"."

As Weeks' Round and Sharp analysis program flourished during the 1950s, he began to address the question of how to identify the greatest needs of the cow and what qualities the bull could best sire. In 1960, Weeks synthesized and condensed his observations into six different and unique qualities and labeled them from one to six for ease of explanation: 1-Dairy, 2-Tall, 3-Open, 4-Strong, 5-Smooth, 6-Style. For each quality he explained its general nature and practical purpose, along withthe original, hand-drawn silhouette still used today. The "Sharp" qualities (aAa 1-2-3) refined the structure while the "Round" qualities (aAa 4-5-6) provided substance.

"The round and sharp qualities may seem to be opposite in nature," says Sarbacker. "But Weeks proposed that, in different ways, refinement and substance could both be used to create more milk and better health in an offspring when applied where they were most needed in the parent. And that idea alone was something many others failed to grasp."

[use silhouette chart]

Weeks believed that the purpose of using a bull, besides impregnating the females, was to use them in a way that kept the female population physically healthy. Therefore, these six numbers relate to the same qualities for the bulls, only what they can contribute to the mating.

Clark explains, "One of Weeks' great contributions to cattle breeding was to demonstrate that bulls of any breed are nothing more than the masculine expression of the same six qualities possessed by cows. He understood how the masculine form expressed them, and he created a way to accurately and consistently explain it."

This revolutionary idea transformed cattle breeding from a random, inconsistent and often frustrating venture, into a logical, systematic approach that could be used by any dairy farmer in any production system.

Analysis Effect

Since 1950, analysis has answered two questions no other program can, 'What is the cause of this cow's problem?' and 'How do I fix it?' "If analysis didn't continually provide satisfactory answers to these questions, it would have ceased to be usable long ago or would have had to be changed. But neither has happened in six decades," Sarbacker notes.

One often unnoticed effect of Weeks' analysis program was the new terminology he brought into the dairy industry language that had not been present before, such as flat-bone. Others picked up on his ideas and often blended them into their own. The most easily recognized example of this is the term "dairy strength", which is much discussed

today but whose meaning is derived from the balanced blending of the dairy and strength qualities Weeks identified and advocated in 1950.

Tim Baumgartner, recently elected Red and White Association President, points out that, "Analysis has been involved with health traits from its beginning. Other programs have only now begun to realize their value and are trying to find a way to incorporate those traits into theirs."

Today's Impact

During its 60-year life, analysis has never changed, a claim no other breeding or mating guide can truthfully make. The process of analysis is the same today as it was in 1950. However, Weeks did change the way he explained his program several times as he sought a more concise method of making analysis understandable to more farmers.

Sarbacker says, "aAa offers the only independent, unbiased breeding guide available in the dairy industry today although it continues to be copied or imitated. We have been referred to as the standard against which all other programs are measured, and we strive to live up to that statement.

"Analyzers are tested monthly to achieve the highest degree of accuracy and excellence possible. Only analyzers trained, tested and qualified by the Animal Analysis Associates organization are authorized to assign aAa numbers."

While A.I. organizations in 24 countries hire aAa to analyze bulls, approved analyzers do not sell semen and do not make bull recommendations to farmers, although bulls are discussed at the owner's request.

Weeks further stated that "the position of this analysis idea in breeding plans should always be only an addition to the basis of selection known as breeding the 'best to the best,' with consideration for high production, proper type, depth of pedigree and family bloodline." Analysis, Weeks asserted, was not a substitute or replacement for any of these measures but would enhance the usage of other available information.

"This allows analysis to be used alongside genomic estimates, type and performance indexes, proof predictions, and anything else that may come down the road because they do not do the same thing as aAa," Clark concludes. "When used in conjunction with other programs, analysis can greatly strengthen their impact."

For 60 years, farmers have relied on the accuracy and integrity of aAa analysis as their guide to breeding better, more profitable cattle. As long as cows are milked, there will always be a need for an intellectually honest, unbiased approach to breeding programs; something aAa Analysis is in a position to reliably offer for the next 60 years.