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# CLASSIFICATION

## THE TOOL TO IMPROVE FUNCTIONAL CONFORMATION & ACHIEVE LONGEVITY

Today's dairy cow deals with some of the greatest challenges ever faced in the history of the dairy industry. Some of these challenges include the stresses associated with unprecedented levels of production, the expectation for superior reproductive performance, high energy rations, and confinement management characterized by constant exposure to concrete footing. The length of a cow's productive life in a herd directly affects her profitability since a longer herd life reduces replacement costs and increases the proportion of lactations from higher-yielding, mature animals. Therefore, it is paramount that we increase the cow's chance of surviving longer in the herd.



## Genetic & Non-Genetic Factors

Dairy cow survival is influenced by many genetic and non-genetic factors. Non-genetic factors include stall size and barn design, bedding type, milk quota restrictions, and the availability and affordability of replacement heifers. Genetic factors include the genetic capability for high production and desirable milk components, calving ease, achieving normal reproductive efficiency, maintaining adequate body condition, resisting mastitis and metabolic disorders and maintaining the type of foot conformation that minimizes lameness in a confined management system.

A cow that has all the genetic capabilities to meet the demands of modern dairy production will only reach the desired goals if she is provided with the care and housing that is necessary to achieve the full expression of her genetic potential. Many cows fail to attain the above genetic and non-genetic requirements, and as a result, leave their herds prematurely. These animals are either genetically inadequate or live in an environment that compromises the expression of their true genetic potential.

All of us share the great passion for good Holstein cows and it has been this common passion that, over the past 100 years, has been fundamental in the development of our present day Holstein. We appreciate the power of genetic selection and the responsibility that we have in shaping the future of the breed. It is remarkable that the genetic progress made in the first 50 years was made without the benefit of A.I., embryo transfer or genomic evaluations. Now with all of the genetic improvement tools we have at our disposal, the opportunity for rapid genetic progress has never been greater.

However, the industry is very different today than it was 50 years ago. In Canada, there has been a large reduction in the number of herds with many of the 50 – 60 cow tie-stall dairies having been replaced by 200+ cow free-stall dairies. The focus on the individual cow and livestock shows has, in many cases, been replaced by a focus on maximizing production and profitability and developing sophisticated herd management programs. Intense selection for production in commercial dairies has resulted in a diminished priority being given to classification and show cows. It has often been recognized that there is a disconnection between the type of cow sought after by the commercial breeder compared to the type of cow winning in the show ring.

Traditionally, the primary focus of the classification system was the overall Final Class. Great importance was placed on whether an animal scored Good Plus, Very Good or Excellent, and a lesser emphasis was placed on the detailed appraisal of individual traits that identify conformational strengths and weaknesses. The past decade has seen a dramatic shift in the use of classification as a herd improvement tool. Final Class still carries huge importance and prestige in herds that have a long-standing investment in achieving excellence in dairy cattle type selection. However, today more than ever before, the classification program must focus on a comprehensive set of descriptive traits that describe the animal's strengths and weaknesses, and collectively depict her overall functionality. One of the largest challenges is to identify the specific traits and parameters that are most important in defining true functionality.

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Both commercial and show ring breeders must recognize the importance of the newer herd management traits such as productive life, calving ease, body condition, and the traits representing greater resistance to both metabolic and infectious disease. There is a huge opportunity for genetic progress in these traits as well as the more traditional type and production traits. Many of the larger more commercial dairymen have expressed their view that the herd management traits mentioned above are the only traits that are important with regard to achieving maximum profitability. However, many of the traditional breeders draw our attention to the outstanding conformational changes, such as seen with udder conformation, that have been achieved through our classification system even without the benefit of many of the modern selection tools. With the conformational changes we have experienced in the past 100 years, it is inevitable that conformation will continue to change and it will be the selection pressures that dictate the type of change that will occur.

If we ignore all of the individual conformation traits, as some producers and researchers have suggested, we will lose the great monitoring tool we have for measuring conformational change and evaluating which of the changes are desirable and where breeding programs must be modified. Progress in feet and leg conformation and identifying the most desirable foot that minimizes lameness in a confinement management system has been much less successful than the progress in udder conformation. The introduction of foot lesion data and the initiative to review the way foot traits are currently evaluated is a proactive step to better evaluate foot conformation and provide an effective tool to reduce lameness. The introduction of robotic milking has emphasized the importance of proper teat placement and teat length as well as the desirability of a level udder floor. Without individual trait evaluation, it will be very difficult to monitor the progress made with these important anatomical characteristics. It is a dangerous assumption that the current conformation status of the Canadian Holstein will remain the same if we don't continue to evaluate individual traits to identify the trends that develop. The general philosophy of the evidence-based approach has always been that one must measure before we can monitor.

## Productivity, Longevity, and Animal Welfare

With today's dairy businesses being more commercially oriented and less focused on the individual animal, generating interest in breed improvement programs such as classification will be challenging. We must find ways to clearly identify the relationship between functional type and longevity and demonstrate the profitability benefits associated with achieving the correct functional conformation. The commercial breeder's perception of the correct functional type will inevitably be different than the show ring breeder. The focus will most likely be on a cow with less stature than the extreme of the breed, but with the necessary balance between strength and angularity. This involves a wide chest floor supporting well-sprung ribs with a strong loin and proper rump structure and slope. Udder conformation remains paramount for both longevity and freedom from mastitis. We must be prepared to be open-minded and accept the fact that the type classification system may have to be modified to accommodate the demands of modern confinement housing. The gap between the type of cow winning the show and the type demanded by the commercial breeder has already begun to narrow and increased efforts must be made so the cows winning in the show ring exemplify the same characteristics appreciated by the commercial breeder. It should be the mission of all Holstein breeders to ensure that the show ring remains the venue to demonstrate excellence in functional conformation and serves as a celebration for the entire dairy industry of their commitment to genetic progress in productivity, longevity, and animal welfare.

## Strength of relationship by conformation traits

The image below displays the strength of relationship that conformation traits have in relation to Longevity and Profitability. Using the same DH1 profit data that was used to create Pro\$, this data looks at animals born from January 2005 to September 2008 who were given the opportunity to reach six years of age. The strength or relationship was calculated using trait points to accommodate intermediate optimums and ideal linear scores; the results of which can be viewed in the image below. In order for an animal to remain in the herd for an extended period of time, her Mammary System and Feet and Legs must be sound, functional and productive. In order for an animal to be profitable while she is in the herd, she needs to be a balanced cow in order to remain healthy, productive, durable and functional.

