In search of clusters of Wisconsin dairy farms to determine the compatibility between high standards of animal health, well-being and milk production

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A random selection of production variables form more than 1000 Wisconsin dairy herds ranging from small to large facilities with a low to high range of annual average milk production and a variety of management systems have been selected for the year 2010. The aim of the study is to cluster the herds for their herd characteristics with regards to animal health, genetics, management (herd size and milking frequency) and milk production without preconceived choices regarding the variables used for the clustering process. Methods such as concordance analysis and principal component analysis will be used to identify the most suitable subset of clustering variables from Dairy Herd Improvement Association (DHIA) stored data (AgSource Cooperative Services, Verona, WI). The resulting clusters will be subjected to a questionnaire in order to gain knowledge regarding herd management and facility design characteristics, and a sample of individual farms will be visited to objectively determine levels of well-being (including scores for locomotion, hygiene, hock and other injuries). Ultimately, the information will be used to determine whether high milk production is compatible with excellent standards of animal well-being. The proposed presentation will focus on the process and results for the selection of clustering variables, the outcome of the clustering analysis and its implications for the development of the questionnaires presented to the farmers.