

Changes in dairy industry benefit dairy cattle health and welfare and consumers

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Profound changes in the dairy industry in recent decades have benefited the health and welfare of dairy cows, as well as consumers. A team of dairy science experts provides valuable insights into these changes, as well as the science behind them, and also identify knowledge gaps and further research needs. Their review is published in the current issue of the *Journal of Dairy Science*.

"Economic pressures, technological innovations, demographic shifts, consumer expectations, and an evolving regulatory framework have all contributed to the impetus for changes in the global [dairy industry](#)," explained lead investigator Herman Barkema, DVM, PhD, Professor, Epidemiology of Infectious Diseases and NSERC Industrial Research Chair in Infectious Diseases of Dairy Cattle, Department of Production Animal Health, Faculty of Veterinary Medicine, at the University of Calgary, Canada. "These changes have had, and will likely continue to have, profound effects on the health and welfare of [dairy cows](#) and on management practices and systems for dairy herds."

Barkema and colleagues examined the key changes taking place in the dairy industry in North America, Europe, Australia, and New Zealand, the implications of which are relevant for the dairy industry in most developed and developing nations.

The main trends they describe are:

- Decrease in the number of farms, whereas herd size has

increased

- Increasing number of dairy farms depending on hired (nonfamily) labor
- Regular professional communication and establishment of farm-specific protocols essential to minimize human error and ensure consistency of practices
- Increasing average milk production per cow, partly because of improvements in nutrition and management, but also because of genetic selection for milk production
- Rapid adoption of new technologies (e.g., automated calf feeders, cow activity monitors, and automated milking systems)
- Increasing requirement for farmers to adopt higher standards for food safety and biosecurity, become less reliant on the use of antimicrobials and hormones, and provide assurances regarding animal welfare, in order to remain compliant with regulations and competitive
- Increasing herd size and response to animal welfare regulations in some countries, which together have led to a decrease in the proportion of [dairy herds](#) housed in tie stalls
- In countries that traditionally practiced seasonal grazing, fewer farmers now let their dairy cows graze in the summer
- Increase in the proportion of organic dairy farms globally, particularly in Europe

The authors identify several opportunities that these changes offer for the future:

- Given the pressure to decrease the use of antimicrobials and hormones, conventional farms may be able to learn from well-managed organic farms.
- Increased adoption of new technologies will enable farmers to have access to rich data sources that can aid in further improving animal health and welfare. Because the potential is still largely

unrealized, more training of [dairy farmers](#), their employees, and their advisors is necessary.

- Genetic and genomic selection for increased resistance to disease offers substantial potential although this requires collection of additional phenotypic data.

"The possibilities of using milk for disease diagnostics and monitoring are considerable. We expect that dairy herd improvement associations will continue to expand the number of tests offered to diagnose diseases and pregnancy," added Professor Barkema. "There is every expectation that changes in the dairy industry will be further accentuated and additional novel technologies and different management practices will be adopted in the future."

"The take-home message is that the dairy industry is changing to meet consumers' expectations for improved health and well-being of [dairy](#) animals, while at the same time increasing food production in a sustainable manner. The solution is not to turn back the hands of time, but instead combine advanced technologies with modern production practices," commented Matt Lucy, PhD, Editor-in-Chief, Journal of Dairy Science, and Professor of Animal Science, University of Missouri, USA.

More information: "Changes in the dairy industry affecting dairy cattle health and welfare," by H.W. Barkema, M.A.G. von Keyserlingk, J.P. Kastelic, T.J.G.M. Lam, C. Luby, J.-P. Roy, S.J. LeBlanc, G.P. Keefe, and D.F. Kelton (DOI: [dx.doi.org/10.3168/jds.2015-9377](https://doi.org/10.3168/jds.2015-9377), *Journal of Dairy Science*, published online in advance of Volume 98, Issue 11 (November 2015))

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