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The future holds challenges and opportunities for dairy producers

A new review from the Journal of Dairy Science® looks at the next 50 years

Philadelphia, April 5, 2018 – In the future, global food production systems will come under increased pressure from population growth, urbanization, and climate change. Over the last two years, scientists from the United States, the United Kingdom, and Sweden have examined projections and current data to identify ways in which the dairy industry may respond to these challenges to meet increased demand for dairy products over the next half century. A new [review](#) published in the [Journal of Dairy Science®](#) projects how dairy producers will meet these challenges and take advantage of opportunities in 2067 and beyond.

Global population is expected to increase from 7.6 to 10.5 billion people by 2067, while arable land per capita will decrease by 25 percent. Because population growth will be uneven, disparity in arable land per capita is also expected to increase. With increased population density comes increased urbanization, which has typically led to greater personal income and greater demand for dairy products. It is also expected that climate change will force changes in the location of dairy production. In the Northern Hemisphere, where 86 percent of the world's milk is produced, the effects of climate change are less tempered by oceanic effects. Dairy production will shift to areas with more sustainable water supplies and adequate growing seasons in response to changes in climate.

To meet increased demand in the face of these challenges will require dairy farms to be profitable and sustainable. "Dairy farmers in 2067 will meet the world's needs for essential nutrients by adopting technologies and practices that provide improved cow health and longevity, profitable dairy farms, and sustainable agriculture," said Jack H. Britt, PhD, professor and associate dean emeritus from North

Carolina State University, Raleigh, NC, USA. The authors forecast that dairy farmers will adopt ways of managing the microbiomes of cows' digestive systems and other body systems to improve health and well-being. They also believe that there will be more attention to managing a cow's epigenome, which mediates longer-term responses to the environment.

The dairy industry will increase production and safety through consolidation, modernization, and specialization. Global trade will be an important factor influencing profitability, and larger dairy farms will continue to make greater use of automation to reduce costs. Improvements in genetic selection will lead to dairy cattle lines that are healthier, produce milk more efficiently, and are more disease- and heat-resistant. The authors expect a shift from simply exporting surpluses to producing value-added products tailored to specific tastes and customs.

“The world faces a challenge in feeding its expanding population during the next 50 years, and we forecast that dairying will meet this challenge by exploiting knowledge and technology to develop better dairy cows and more productive and sustainable dairy farms,” according to Dr. Britt. “Our vision is that dairying in the future will reflect sustainable intensification that benefits animals, agroecosystems, and humankind through production of key nutrients for human consumption.”

The review is available online at [http://www.journalofdairyscience.org/article/S0022-0302\(18\)30181-4/fulltext](http://www.journalofdairyscience.org/article/S0022-0302(18)30181-4/fulltext).

Notes for editors

The article is “*Invited review: Learning from the future—A vision for dairy farms and cows in 2067*,” by J.H. Britt, R.A. Cushman, C.D. Dechow, H. Dobson, P. Humblot, M.F. Hutjens, G.A. Jones, P.S. Ruegg, I.M. Sheldon, and J.S. Stevenson (<https://doi.org/10.3168/jds.2017-14025>). It will appear in the *Journal of Dairy Science*, volume 101, issue 5 (May 2018) published by FASS Inc. and Elsevier.

Full text of this article is available to credentialed journalists upon request. Contact Eileen Leahy at +1 732 238 3628 or jdsmedia@elsevier.com to obtain copies. Journalists wishing to interview the authors should contact J. H. Britt, North Carolina State University, at jackhbritt@gmail.com.

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The American Dairy Science Association (ADSA) is an international organization of educators, scientists, and industry representatives who are committed to advancing the dairy industry and keenly aware of the vital role the dairy sciences play in fulfilling the economic, nutritive, and health requirements of the world's population. It provides leadership in scientific and technical support to sustain and grow the global dairy industry through generation, dissemination, and exchange of information and services. Together, ADSA

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