

China's dairy is in growth mode

Since 2000, China's dairy industry has expanded its dairy herd 6.9 percent annually. At the same time, milk production has grown 9.1 percent.

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CHINA'S dairy industry has grown dramatically over the last 20 years, but its growth is not well documented outside of annual surveys by the Dairy Association of China (DAC). Consequently, there are quite different numbers from various sources for dairy cattle in China.

The DAC is housed in the Institute of Animal Science and is a quasi-government organization. An annual report of nearly 200 pages is published by the DAC, but data are not available through any website. Part of these varying numbers may be due to the way dairy cattle are counted. In China, as in other countries, dairy cattle on a farm include all animals: calves, heifers, dry cows, and lactating cows. On a normally populated dairy farm, one-half of animals are lactating cows.

Up and coming

What accounts for the dramatic rise in milk production in China?

A major emphasis by the government has been to have milk especially for baby formulas and school-age children. At the China Dairy 20 Summit in 2015, China Vice President Wang Yang and Minister of Agriculture Han Changfu emphasized that development of the China dairy industry should focus on quality and food safety, particularly after the "melamine incident" in 2008.

Since then, there have been many efforts and changes directed at improving dairy product quality. Currently, the mechanism for determining profitability is not mature, with the producer sector experiencing wide swings in profitability, tending toward the low side. Therefore, there is no guarantee of a high-quality and safe milk supply.

In 2016, there were 14.3 million head of dairy cattle, including calves, heifers, dry cows, and lactating cows in China. Dairy cattle numbers have grown by a factor of three-fold from 2000 to 2016, an annual rate of 6.9

percent (Figure 1).

Milk production in 2016 was 37.1 million metric tons (MMT) (a metric ton is 1,000 kilograms or 2,200 pounds). It has grown fourfold from 2000 to 2016, an annual improvement of 9.1 percent (Figure 1). China's milk production was 4.7 percent of global milk production in 2016, the third most by a single country after India and the U.S.

Dairy product production (DPP) in 2016 was 29.9 MMT, and it has grown 14.3-fold from 2000 to 2016, an annualized gain of 18.2 percent. The annual improvement of DPP is twofold compared to that of milk production. Most milk was produced in the north of China, including Inner Mongolia, Heilongjiang, Hebei, Henan, and Shandong provinces, which together make up 64.7 percent of national milk production (Figure 2).

Dairy cattle numbers grew steadily in 2014 due to tight raw milk supplies and climbing prices in 2013. With dairy farmers' willingness to expand herd size and milk yield, milk production outpaced consumption (approximately 17.2 MMT) in 2014. With growing importation of dairy products, the market switched from a tight supply situation to one of very adequate supply.

In some regions of China, there was an oversupply of raw milk, which led to declining milk prices and higher culling rates in 2014. Today, total dairy cattle numbers are expected to be stable or slightly smaller, but total milk production is expected to grow due to improvements in milk yield per cow.

A variety of farm styles

Currently, there are three predominant models for milk production in China: cropping area (CA), suburban area (SA), and pasture production (PAS) models. Cropping area dairy farms are generally owned by a farm family with a herd size between five to 200 head of cows. This model supplies more than 60 percent of total raw milk supply. The advantages of this style include inexpensive labor, land, and feed resources.

Suburban area model dairy farming

includes all sizes of commercial dairy farms, which are challenged with limited land resources leading to environmental pollution issues. This model now supplies about 30 percent of the raw milk in China. However, the need for well-trained labor and limited land resources restrict this model.

The pasture production model can only produce around 10 percent of the country's raw milk supply. This model is declining in China due to long-term overgrazing of grassland and limited land availability.

In 2016, 53 percent of dairy farms had cow numbers in excess of 100 head, which allows them to be classified as "dairy farms of scale." This was greater than 2008 by 33.5 percent. These farms have milking parlors.

Dairy farms of scale are well adapted to new manure recycling technology as well. Dairy farm management computer software helps the transition to mechanization and use of information technology. In 2015, average milk production reached 6 metric tons (13,200 pounds) per cow per year, an improvement of 1.2 metric tons (2,640 pounds) from 2008.

A global impact

So, how does this affect the U.S. dairy market? According to the USDA's Economic Research Service and the Foreign Agriculture Service, as well as the U.S. Dairy Export Council, U.S. dairy milk solids exports of all U.S. production reached a peak in 2014 and 2015 at about 15.5 percent. Exports declined to about 14 percent in 2016.

On a dollar basis in 2016, China was fourth among countries/regions in purchasing U.S. dairy, trailing Mexico, Southeast Asia, and Canada in sales. Sales to China in 2016 were off 15 percent compared to 2015 falling to \$384 million. This was down from a peak of \$706 million in 2014 and \$695 million in 2015. To learn more, visit <http://on.hoards.com/May2017MSB>.

This is a reflection of China's major milk processors buying more milk solids on the world market, especially in 2016 when world prices were lower. In December 2017, China lowered its cheese tariffs from 12 to 8 percent. Over the last decade, China's cheese imports grew more than sevenfold to nearly 100,000 MT. China is now a top 10 cheese buyer and is on pace to become the largest cheese importer in the world. 🐄

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