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2023 Semen Sales Report Reflects Global Trends

National Association of Animal Breeders regular members unit sales shows domestic and global semen use continues to shift.

Madison, WI [March 12, 2024] – The National Association of Animal Breeders (NAAB) members report annual units for the categories of domestic sales, export sales, custom collection, and imported units for dairy and beef breeds. With approximately 95% of the US AI industry represented by NAAB members, these annual statistics provide an accurate insight of the sales of U.S. bovine semen.

"After reaching new records for units sold in 2021 and successfully managing two years of disruptions to the supply chain and public health challenges during Covid, the global downturn post Covid continues to impact the genetics industry resulting in a second consecutive year of a decline in total dairy and beef units sold," says Jay Weiker, president of NAAB.

2023 semen sales data

The U.S. bovine semen industry reports a decline of 4% in total unit sales, reaching 66 million total units reported for all categories combined. This represents a 2.9 million unit decrease from the previous year. The value of semen exported reached a new record of \$306 million reflecting an increase in average blend price.

The total number of dairy unit sales for domestic and export experienced a substantial 5% decline compared to 2022. This represents 2.5 million fewer dairy units for a total of 46.9 million units. Beef unit sales only declined by 2%, which equates to just over 400,000 units for a total of 19.2 million units. Breaking this down further, the beef on dairy semen sales increased by about 1.5 million units both in the U.S. and for export, however beef on beef sales saw a decline of 1.4 million units. This is on top of a decline of 4 million units in 2022.

Globally, dairy producers continue to adjust their reproductive management programs and make breeding decisions that provide the best economic return for their business. Producers are using different combinations of conventional, and gender selected dairy semen along with beef semen to improve their bottom line. In the US, the type of semen used by dairy producers has shifted and the largest category in 2023 was gender selected dairy semen at 8.4 million units followed by beef on dairy at 7.9 million units and then conventional dairy at 7 million units. The cost of raising a heifer to the age of first calving continues to increase and the high value of young beef crossbred calves make it very appealing to dairy producers to produce F1 calves for the feedlots.

New to the NAAB semen sales statistics is the reporting of heterospermic semen units. 2023 semen sales reveal the newfound popularity of the heterospermic beef product at 1.8 million units sold with 1.3 million being domestic sales. This makes heterospermic beef the second largest 'breed' of beef semen sold, following Angus in first place.

Decline in domestic semen sales

The domestic dairy units reported for the U.S. declined by 4%, nearly 700k units with a market size of 15.5 million dairy units. Dairy units declined in the three previous years as well so over the last 4 years, the U.S. market has declined by 3.7 million dairy units.

Some of the decline in dairy units has been substituted by beef units. Domestic beef units sold in the U.S. increased by 400k units overall with units used on dairies increasing by nearly 1 million units while beef used in beef herds decreased. The total beef units sold in the US totaled 9.4 million units with 7.9 million going into dairy herds and 1.5 million used in beef herds. Additionally, in the domestic market, gender selected dairy product increased by 518k units or 7%. Gender selected dairy semen has grown steadily and now represents 54% of the dairy units used by U.S. dairy producers. The product mix allows producers to generate the calculated number of replacement heifers needed and it also maximizes genetic progress. Custom collected dairy units for non-members increased by 44% while custom collected beef units for non-members were down 10%.

Dairy exports also experience decline

“Exports have been strong over the years however the economic and geopolitical challenges facing global dairy and beef producers resulted in a decline for both dairy and beef units.” says Sophie Eaglen, International Program Director at NAAB. “The downturn in the China dairy economy and the challenges in Russia and that region have impacted dairy exports and the shift in Brazil to focus more on beef production from Zebu type genetics have had the largest impact on beef semen exports.”

Dairy units exported settled in at 29 million units representing a decrease of nearly 2.4 million units for an 8% decrease over 2022. Beef semen exports declined to a total of 4.5 million units, down 263k units or -6% from the previous year.

Global trends

Producers around the world face similar issues related to the cost of production, labor shortages and finding new ways to decrease the carbon footprint of livestock production. These reproductive management practices influence the type of product used.

While the U.S. market accounts for 7 million units of conventional dairy semen usage, export markets purchased 21 million units, or 3 times the volume. While there has been a decline in utilization of conventional semen in the U.S., the demand from the export markets has remained strong.

Similarly, 8.4 million units of gender selected dairy semen is used by U.S. producers while 8.6 million dairy units were exported. Roughly 37% of the dairy semen produced by members was used by U.S. producers and the other 63% was exported.

For the third year in a row, China was the top export market for total units and dollars. Brazil remained the second highest for total units, even though exports to Brazil were 718k units below 2022 volumes. The UK replaced Russia as the second highest market for dollar value.

The top 37 international markets all imported product valued over \$1 million dollars in 2023 and 16 countries imported product valued over \$5 million dollars, up from 11 countries in 2022. These 37 markets account for 92% of the total export units and 94% of the dollar value.

More information about NAAB and its annual statistics can be found on <http://www.naab-css.org/>

NAAB is the national trade association for artificial insemination businesses. In that capacity,

NAAB has the responsibility to negotiate with international markets to resolve trade restrictions that might limit access to product from the USA. NAAB members account for about 95% of dairy and beef semen sold in the USA and market semen to 119 countries around the world. NAAB members also participate in the Certified Semen Services (CSS) program to assure that the semen they provide to both domestic and international producers meet or exceeds the minimum health standards as well as semen quality standards.