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Report Name: The Brazilian Bovine Genetics Market and US Exports

Country: Brazil

Post: Brasilia

Report Category: Livestock and Products, Dairy and Products

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Report Highlights:

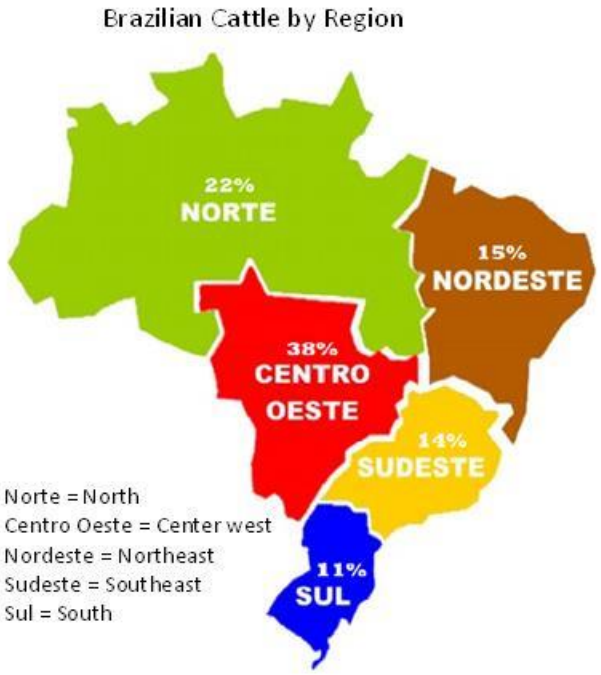
Bovine semen exports from the United States to Brazil reached a record in 2020, and expectations are that 2021 could be another record year. Brazil is the second largest market for U.S. bovine genetics. Demand for artificial insemination (AI) and high quality genetics in Brazil is growing by double digits each year, with the cattle sector leading the growth. In recent years, Post has increased marketing efforts in the area of bovine genetics and is working to address barriers to trade.

Summary:

The bovine genetics market in Brazil is growing by leaps and bounds, with Angus genetics leading the way. Last year saw records for both artificial insemination (AI) use in Brazil as well as bovine genetic imports. As ranchers seek to improve their traditional herds, they increasingly look to AI over natural breeding. Overall demand for high-quality semen is growing and the pandemic did not negatively impact semen sales in 2020, with imports reaching a record US$36.4 million. In regard to Angus genetics, the market is expected to double over the next four to five years. Meanwhile, AI use in the dairy industry continues to be low, but increasing, due to the small size of dairies in Brazil and the lack of resources to invest in high quality Holstein genetics. Along with greater domestic demand for high-quality semen, import demand is also on the rise, with the United States leading the way. Brazil was the largest market globally for U.S. bovine genetics (in quantity terms) in 2019 and the second largest (behind China) in 2020. The U.S. dominant market share is growing even larger as exports to Brazil were a record in 2020. FAS Brazil is active in supporting U.S. bovine genetic exports though the Cochran Fellowship program and has organized U.S. participation in the Expointer Cattle and Genetics show, the largest livestock show in South American, after a 20 year hiatus.

Angus Demand Grows Among Ranchers and Processors

Brazil has the largest commercial cattle herd in the world at approximately 238 million head, with 43 percent dairy and 57 percent beef cattle. This compares to about 95 million head in the United States and 85 million in the EU. The Nelore breed (Bos Indicus origin) has dominated the Brazilian beef cattle herd for more than a century and today still represents about 75 percent of all beef cattle. Originally brought to Brazil from India in the 1860s, the breed is known for its heat tolerance, resistance to insects and diseases, and productivity on poor-quality forage. However, relatively poor feed lot performance and a lack of marbling in Nelore beef are disadvantages of the breed.



Nelore cattle thrive in the powerhouse beef production states of the Center-West, including Mato Grosso and Mato Grosso do Sul, which are characterized by a very hot and humid tropical climate. This tropical climate is not well suited for Angus and other

European breeds (Bos Taurus). Excessive heat and ticks make it difficult to keep pure Angus cattle, with their European characteristics, in the region. Only in the far southern state of Rio Grande do Sul, and especially along the Argentine and Uruguayan borders, can pure Angus cattle thrive. Therefore, producers throughout the Southeast, Center-West, and North of Brazil who want to improve the carcass characteristics of their herds often cross the Nelore and Angus breeds, using AI. Despite the dominate number of Nelore cattle in Brazil, only 39 percent of beef insemination is of the Nelore breed with 49 percent being Angus and most often with U.S. Angus semen. Argentina provides some Angus semen but Argentine Angus bulls are generally smaller than their U.S. counterparts and feedlots in Brazil generally prefer larger Angus bulls for crossing with Nelore.


Nelore Cattle. Photo Source: Brazilian Angus Association

The first cross (F1) of a Nelore/Angus (known in Brazil as the industrial cross) provides heat and tick tolerance while improving carcass characteristics and meat quality (tenderness and marbling). Post contacts report that approximately 98 percent of Angus semen imports are used for the industrial cross. The heifer of an Angus/Nelore cross can be bred early (at 14 months), then be weaned and the F1 cross mother cow marketed at 30 months. This is an increasingly popular system in Brazil that brings top dollar for both the weaned calves and the F1 cross mother cows.

Consumer Demand for Angus and Angus Cross Beef is on the Rise

Only Argentina surpasses Brazil in per capital beef consumption globally. However, in order to increase demand for Angus beef and add value for ranchers, the Brazilian Angus Association created the Brazilian Angus Beef certification system. Currently an estimated 450,000 cattle are slaughtered under the program. In order to qualify, cattle must have at least 50 percent proven Angus genetics. This requirement differs from the U.S. certified Angus program, which is based on color and carcass characteristics.


Source: FAS Brazil. Angus Bulls in Bage RS-Uruguayan

Post contacts in the industry report that black cattle, even those not in the Certified Angus Beef Program, increasingly receive a premium at market. [Note: In Brazil, as opposed to the United States, Red Angus and Black Angus fall

under one association, the Brazilian Angus Association. Due, in part, to wide color variability in the offspring of the Red Angus/Nelore F1 cross, Black Angus cattle constitute more than 95 percent of all Angus cattle in Brazil.] High-end restaurants and sophisticated consumers in Brazil demand the tenderness that comes from beef of Angus and other European origin cattle. However, the price of beef is still the most important factor for the majority of Brazilian consumers, and thus low-cost Nelore beef continues to lead the market. In addition, some Asian markets, such as China, prefer a lean meat with little to no marbling for use in traditional dishes. Therefore, despite increasing cross breeding, most cattle operations in the Center-West and North of Brazil are still primarily Nelore-based. However, this is slowly changing, especially as demand for high-end steaks grows in Brazil as well as in many Asian markets.

Non-Angus Bos Taurus Demand Restrained

In Southern Brazil, European heritage breeds (Bos Taurus) dominate the market. [Note: "European breeds" are those that originally came from Europe (such as Angus, Charolais, Limousin, and Simmental) though the world's top quality genetics for many of these breeds, such as Angus, now come from the United States. The United States is the dominant global supplier of Bos Taurus breed genetics.]

Source: FAS Brasilia. Hereford and Bradford Cattle in Uruguaiana RS- Argentine Border

Market sources indicate that about half of all AI of Brazilian beef cattle consists of Angus semen, with the vast majority of the remainder consisting of Nelore followed by Brangus. Both the Braford (Hereford/Brahman cross) and the Brangus (Angus/Brahman) were developed in the southern Brazilian state of Rio Grande do Sul, near the town of Bage on the border with Uruguay. Post recently visited the facilities that developed these breeds and was informed that while there is still a growing market for Brangus genetics, other breeds are dwindling fast. Though still common in the the southernmost states of Brazil, the Braford breed has limited demand throughout the rest of Brazil and is croweded out by both red and black Angus. Likewise, the once promissing Canchim (Charolais/Nelore cross) breed is limited to a few ranches in the states of Rio Grande do Sul and Sao Paulo. Post visited the Embrapa (Brazilian equivalent to USDA's Agricultural Research Service) cattle research station in the interior of the state of Sao Paulo where the Canchim breed was developed and learned that while the breed has promissing characteristics, it is having difficulty competing with the Angus/Nelore cross. Limousin, Devon, Simmental, and other Bos Taurus breeds are very limited in Brazil and only rarely found in the far south.

Brangus Demand Grows in Feedlot Operations

In addition to pure breed Angus demand in southern Brazil and the Industrial Cross in the Center-West, ranchers in Brazil increasingly see the benefits of the Brangus breed (3/8 Brahman and 5/8 Angus) due to carcass improvements over Nelore cattle and adaptability to tropical conditions. As mentioned earlier, the Industrial Cross (F1 Angus/Nelore) is growing in popularity and often the heifers from an Industrial Cross are bred using Brangus bulls or semen in what is knows that the "F2 cruzamento." Therefore, it is common in the feedlots throughout the Center-West of Brazil to see both Industrial Cross cattle as well as Industrial Cross/Brangus cattle. Total Brangus semen demand in Brazil has grown to around 500,000 doses a year with the Center-West states of Mato Grosso and Mato Grosso do Sul being the primary users. In regards to imports, Argentina is the primary supplier of Brangus genetics to Brazil.

Beef on Dairy Pushes Beef Breed and Sexed-Semen AI Demand

Another dynamic in the market that is increasing demand for AI is beef on dairy breeding. Dairies in Brazil, and throughout the world, typically use breeds such as the Holstein, which are high milk producers but inefficient beef producers. In Brazil, the Holstein, Gir, and Girolanda (Holstein/Gir mix) are popular dairy breeds. The calves from these breeds, that are not kept back as heifer replacements to be used in milk production, are inefficient in beef production and not valued for their meat quality. However, crossing an Angus, or other European-origin breed, with a dairy cow results in a calf with far better value for its meat production.

The result of both increasing demand for Angus in traditional beef operations for cross breeding along with greater demand for beef on dairy crosses translates into higher overall AI demand in Brazil for Bos Taurus breeds, such as Angus, where the United States dominates the global market in terms of high quality genetics production and exports. Greater beef on dairy demand

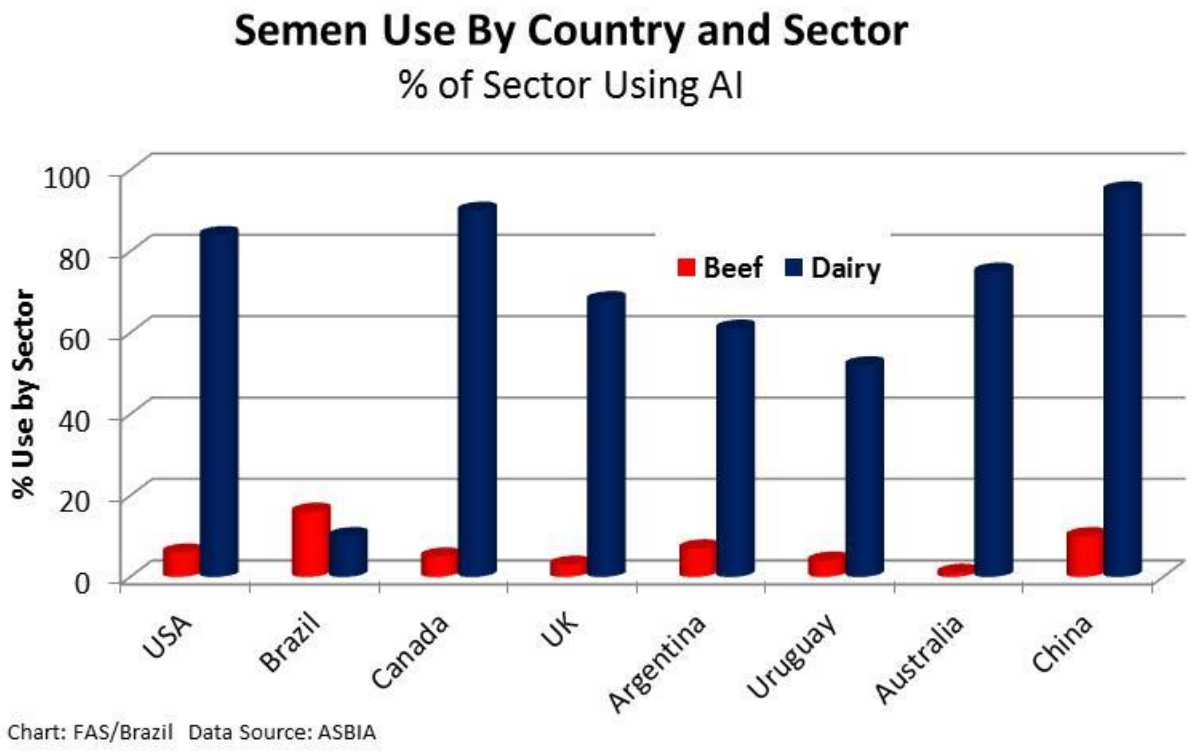
is also leading to more use of sexed-semen, which has about a 90 percent chance of delivering a heifer. Post contacts report that sexed semen demand was up 200 percent in 2020 and expect it to continue to grow rapidly in the coming years. This trend is confirmed by data provided by the Brazilian Association of Artificial Insemination (ASBIA).

AI Use Limited in Brazilian Dairy Industry

Though on the rise, the use of AI remains limited in the Brazilian dairy industry, with only about 10 percent of dairy cows bred using AI. This is very low in comparison to neighboring Argentina, where 61 percent of dairy cows are bred using AI, and Uruguay, where the figure stands at 52 percent (see graph below). Several factors account for the low use of AI by Brazilian dairy producers compared to the Brazilian beef industry and the dairy industries in other Latin American countries.

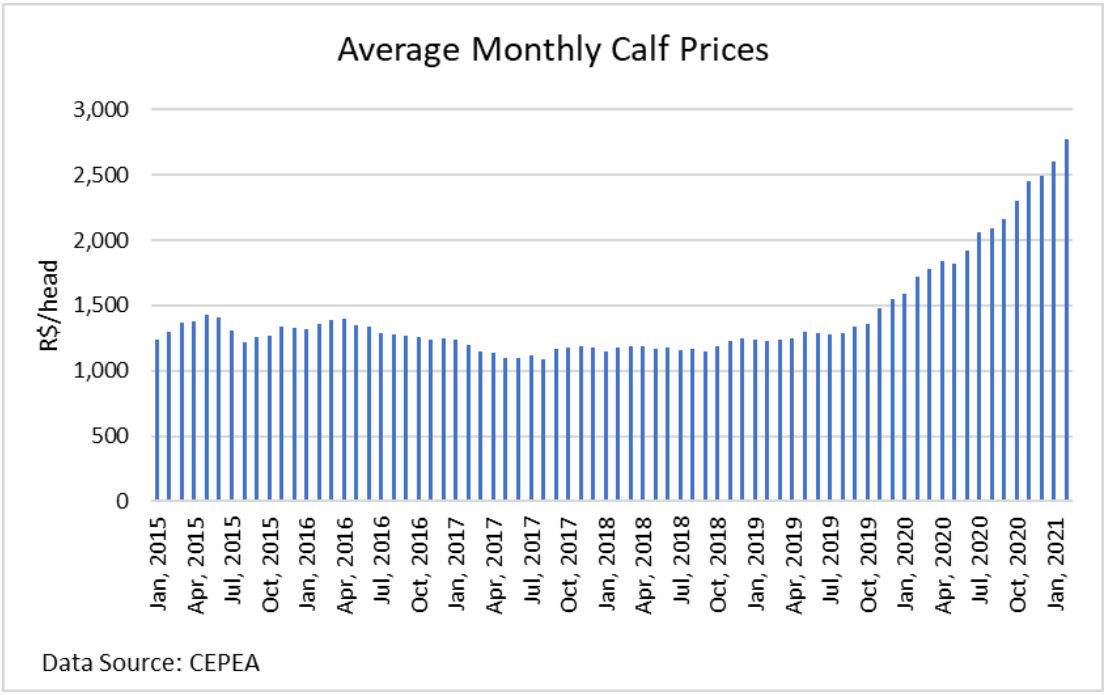
- The Brazilian dairy industry is characterized by small and medium-sized farms with few resources to invest in technology. Though large dairies (more than 1,000 cows) are growing throughout Brazil, they are still rare.
- Profits are restrained in the dairy industry as very little milk and few dairy products are exported. In recent years, dairy prices have been more subdued than in the case of beef. With no export outlet and limited demand in Brazil for high-quality fresh milk, producer returns generally do not allow for significant investments in technology such as high-quality semen.
- Dairy producers do not tend to see the benefits of high-quality genetics as much as beef producers due to limiting factors such as feed quality. As most dairy cows are pasture-raised, high quality genetics do not have the same impact in comparison to confined beef cattle on high-quality concentrated rations.

Despite these constraints to growth of genetic use by the dairy industry, production and use of AI by the dairy sector is increasing, and 2020 was a strong growth year semen sales to the dairy sector at 5.2 million doses, according to data from the Brazilian Association of Artificial Insemination (ASBIA). Record 2020 sales were 13 percent greater than in 2019. The Holstein breed remains the most popular among dairies in Brazil, with 70 of the 100 largest dairies in the country using at least some cows from the breed. The Girolando breed is used by 20 of the top 100 dairies, while one quarter of the 100 biggest dairies report using more than one dairy breed on their farm. In terms of imports, Holsteins dominate with about 65 percent market share. However, in total domestic use of dairy semen, Gir (defriend as a minimum 3/4 Gir) accounted for 61 percent followed by Holstein at 28 percent in 2020.



Demand for AI High-Quality Genetics in Brazil Grew in 2020

The pandemic did not slow the growing demand for bovine genetics in Brazil in 2020. Domestic production and imports in 2020 reached a record 25.6 million doses. This 2020 supply (imports and production) was 29.5 percent greater than in 2019.



The chart below illustrates the tremendous growth in production and imports of bovine semen resulting from soaring demand. This demand is supported by high cattle prices (see chart above), which are a result of both strong domestic and export demand. High cattle prices not only increase profitability but also discourage keeping bulls for breeding, as feed resources can be better used for beef production rather than reproduction.

A deep recession in Brazil restrained demand in 2015, 2016, and 2017. However, since 2017, Brazilian demand (measured in Brazilian products and imports) for semen has been particularly impressive and more than doubled, increasing from 14 million doses in 2017 to 29.5 million doses in 2020. A weak Brazilian currency coupled with strong exports of Brazilian beef has supported producer profits in the beef sector. High cattle prices have only served to accelerate the growing demand for animals that can be bred at an earlier age and their offspring that can be slaughtered at an earlier age. This has mostly been accomplished by using AI and high-quality genetics. Post contacts believe that the market will grow by 20 percent in 2021.

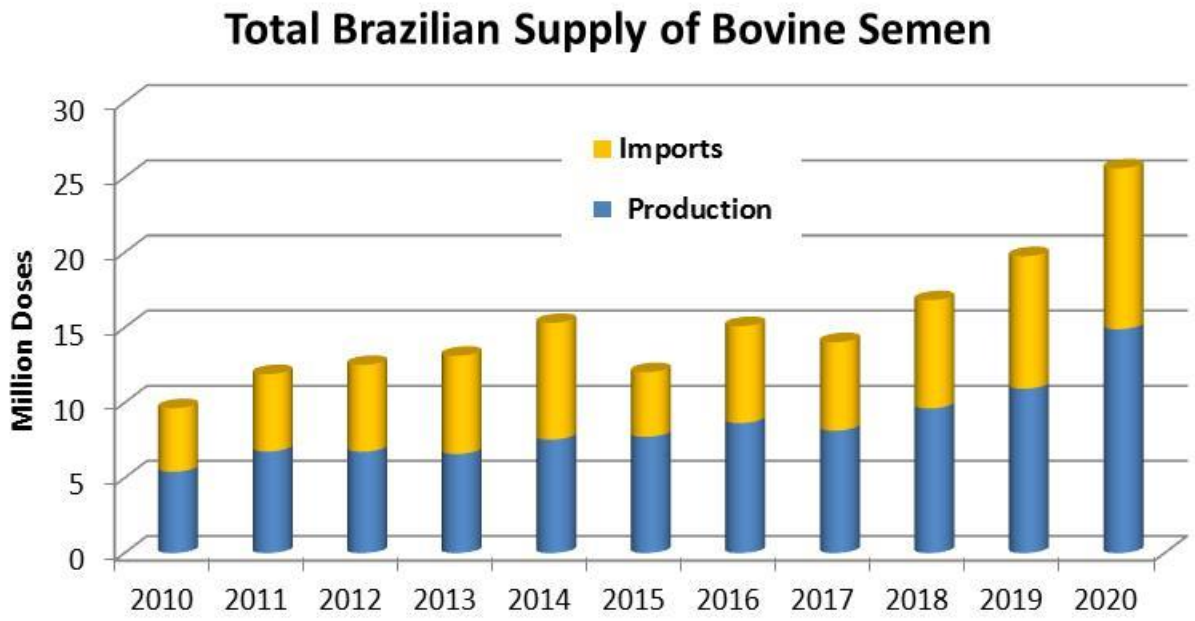
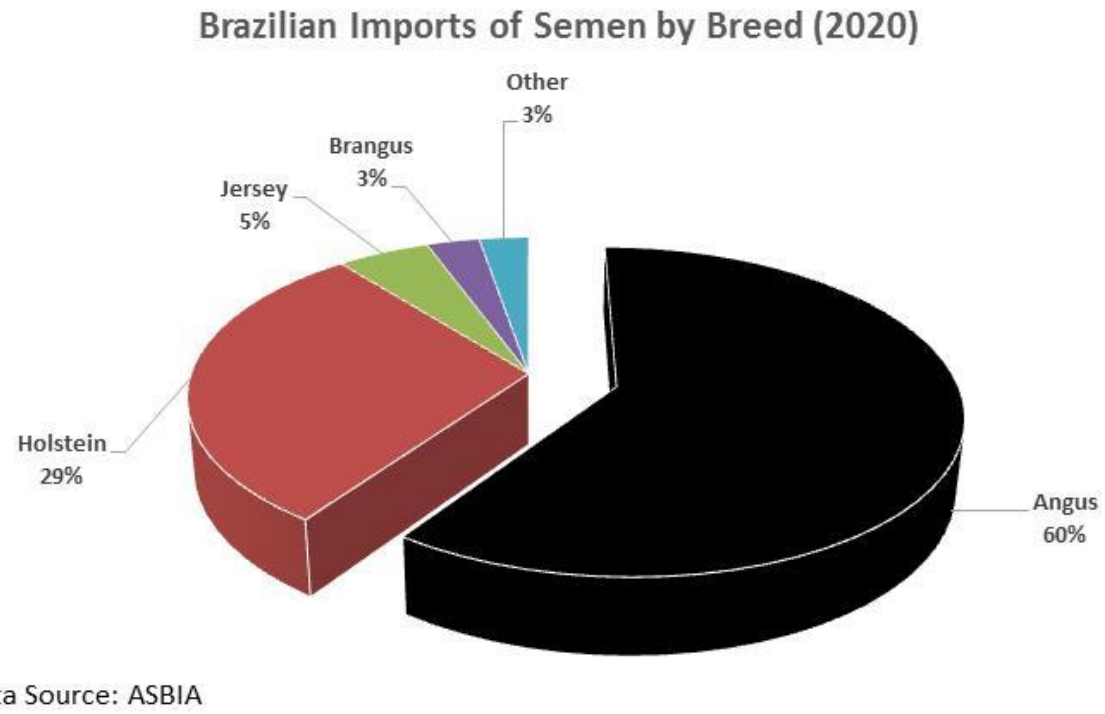


Chart: FAS/Brazil Data Source: ASBIA

An additional factor spurring greater AI use in Brazil is the growing use of fixed-time AI (FTAI). FTAI involves synchronizing the animals in a herd through the use of exogenus (injection or insertion/implantation) of hormones to allow AI over a controlled timeframe. The growth of FTAI means less time and resources are needed to monitor cows and heifers and entire herds can be inseminated in a day or two.

Import Market Grows with U.S. Genetics Leading the Way

About 88 percent of all beef bovine semen imports in 2020 were Angus, with the remainder consisting primarily of Brangus, Red Angus, Braford, and Senepol. Very little Charolais, Limousin, and Simmental semen was imported. It is estimated that there are about 65 million cows (mother cows kept for breeding) on beef ranches in Brazil. After years of strong growth, it is now believed that about 10 percent of those mother cows are bred using AI.

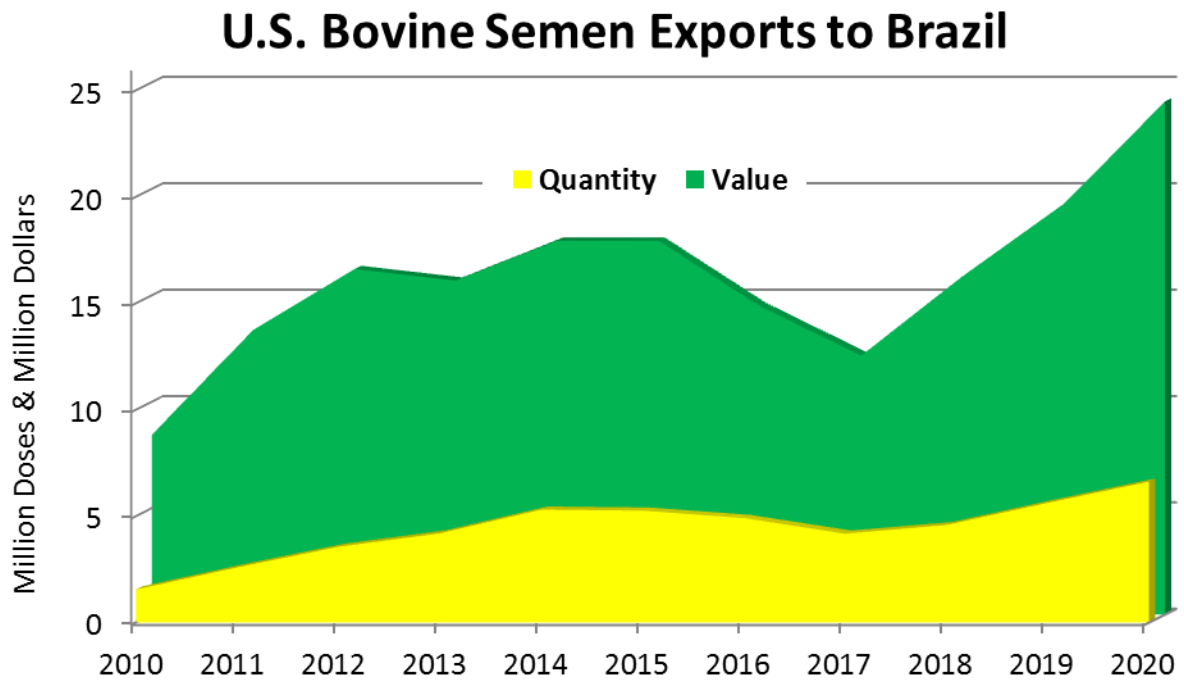


Data Source: ASBIA

U.S. Bovine Genetic Exports to Brazil Hit Records in Terms of Quantity, Value, and Market Share

The United States dominates the beef genetics import market in Brazil due to the superior quality of semen produced in the United States. For example, roughly 79 percent of Angus imports come from the United States, with most of the remaining imports coming from Argentina. Argentina has a slight lead over the United States in Brangus semen exports to Brazil, though the market is much smaller than for Angus.

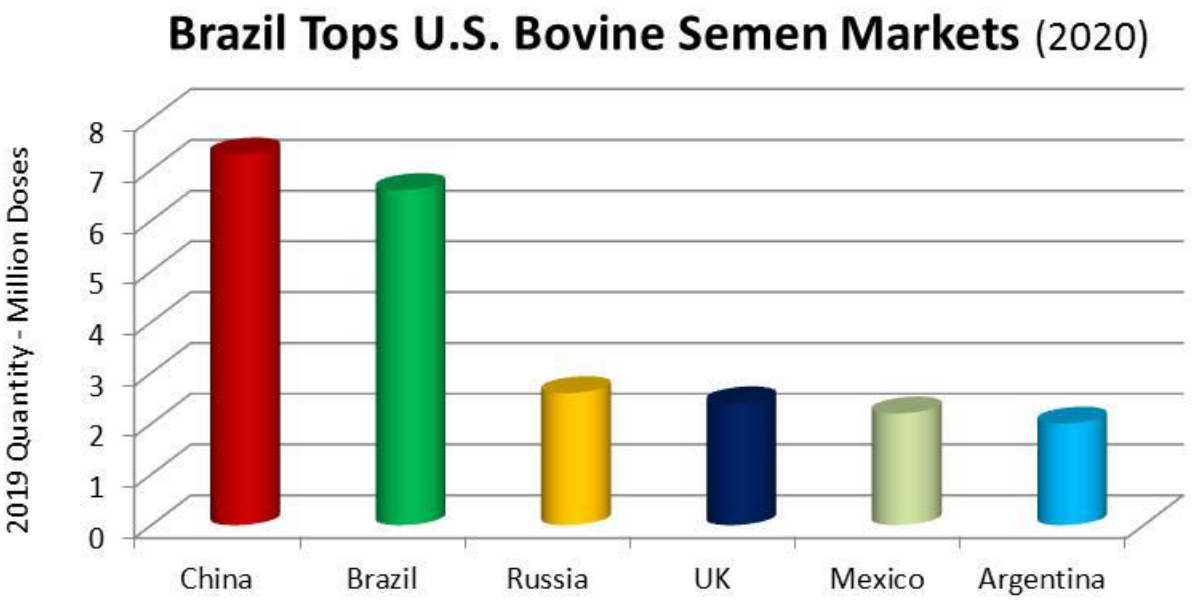
The chart below shows the impressive growth in U.S. exports to Brazil over the past few years. From 2010 to 2015, U.S. exports increased steadily but fell during the economic recession from 2015-2018. A recovering economy and strong cattle prices have supported demand for U.S. semen recently. Exports in 2020 reached a record in both value and volume terms. In fact, U.S. exports in terms of value were up 25 percent, while the quantity increased by 18 percent over 2019.



Data Source: USDA GATS

Total Brazilian bovine semen imports reached a record US$36.4 million in 2020, which is a 14 percent increase over 2019, according to official Brazilian government statistics. Brazil had until recently been the top market for U.S. bovine genetics since 2011, in terms of the number of doses. Mexico was the second largest market, followed by China. However, since 2016, Chinese demand has soared. Despite strong growth in exports to Brazil in 2020, China become the top market for U.S. bovine genetics in both value and volume terms. In value terms, Brazil is now the third largest market, behind China and the United Kingdom.

The United States dominates the Brazilian market for imported bovine semen, with 68 percent of the market share in 2019 and 73 percent in 2020 in value terms. The U.S. share from 2014 to 2019 was fairly consistent, ranging from 60-70 percent of the market. Canada is the second largest exporter to Brazil, with 20 percent market share in 2019 and 18 percent market share in 2020. Argentina is the third largest supplier with a 4 percent share. All major suppliers have held relatively even shares over the past several years and thus have all benefited from strong overall growth in import demand. In 2003, Brazil imported a total of just 3.5 million doses but that grew to more than 8.8 million doses of bovine semen in 2019 and a record 10.6 million doses in 2020.



Souce data USDA GATS and 2020 Forecast FAS/Brazil

FAS Brazil Supports U.S. Export Growth and Seeks to Remove Barriers

FAS Brazil is working to promote U.S. livestock genetic exports to Brazil together with U.S Livestock Genetics Export (USLGE), a nonprofit association that serves world markets with livestock genetics from leading U.S. livestock breeders. A new mechanism that Post uses to promote exports is the Expointer livestock and genetics show held in the southern state of Rio Grande do Sul each August. In 2019, FAS Brazil returned to participate in the show after a 20 year absence. In conjunction with USLGE, Post worked to organize seminars, receptions, and business meetings during the show. In September 2020, FAS Brazil participated in a virtual version of the show and organized presentations from USGLE, the U.S. Holstein Association, the Kansas Department of Agriculture, the American Paint Horse Association, and USDA FAS.

FAS Brazil has also used the Cochran Fellowship Program to send breeders, importers, and inseminators to the United States on short-term training exchanges to learn more about U.S. genetics available for export to Brazil. Two major groups were organized in 2017 and 2019 for dairy and beef cattle, respectively.

FAS Brazil is also working to remove technical barriers to trade. Working with the Brazilian Ministry of Agriculture and in coordination with the National Association of Animal Breeders (NAAB), FAS has sought to amend a regulation that requires microsatellite profiles for the registration of bulls and any offspring of the bulls, such that SNP profiles are accepted as a second option for parent verification.

Microsatellite technology is being replaced rapidly by SNP genotyping technology worldwide due to higher accuracy and cost efficiency. When the Brazilian regulation requiring microsatellites can be extended to accept SNP profiles, this would significantly reduce turnaround time for bull registration. Consequently, this would increase the already popular Brazilian market for semen exporters, leading to a greater availability of high-quality genetics for Brazilian producers. In addition, many countries around the world, including the United States, share SNP parentage markers to enhance the accuracy of national genetic evaluations. Brazil would be eligible for a similar bilateral exchange of SNPs when adopting this technology

Attachments:

No Attachments.