

Strategies for Genetic Improvement of Cattle in the North Patagonian Rangelands

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Introduction

Foot and mouth disease (FMD) has generated growing concerns to producers from the 1960s to the present because of the direct economic losses, as well as problems arising from international export trade. Since 1970, Argentina has been divided into zones with a different health status of FMD. Until 2013 a zone free of the disease with vaccination (North Patagonia A) acted as a protection area for the free zone without vaccination (the rest of Patagonia).

The zoophyte-sanitary barrier was moved to the Colorado river (Resolution 141/2013 of the Ministry of Agriculture, Livestock and Fisheries) and vaccination against the disease is no longer required in the valleys in Rio Negro province, part of Neuquén and the partido of Patagones in the southern tip of Buenos Aires province (North Patagonia Zone A).

Cattle ranching in the region began around 60-70 years ago replacing the sheep, but the first genetically improved cattle breeding came much later. Determining the impact of moving the health barrier to the Colorado River is a challenge for practitioners and livestock producers in the area. The new sanitary status of freedom from FMD without vaccination prevents the introduction of live animals to the buffer zone. This makes the challenge greater as it is necessary to produce meat products from different species to supply the population of Northern Patagonia reaching new markets FMD-free for better prices (Lascano and Boya, 2006, Pecker, 2007). Therefore, the objective of this study was to determine the strategies used by farmers to provide genetically improved animals. While the cattle in the region arises around 60-70 years replacing the sheep, the first genetically improved cattle come much later. To determine the impact of the shift of health barrier to the Colorado River is a challenge for practitioners and livestock producers in the area. The new sanitary status of free of FMD without vaccination prevents access of live animals to the buffer zone. This makes a greater challenge because it is necessary to produce meat products from different species to supply the population of Northern Patagonia reaching new FMD-free markets for better prices (Lascano and Boya, 2006, Pecker, 2007). Therefore, the objective of this study was to determine the strategies used by farmers to provide genetically improved animals to enhance cattle breeding in the grasslands of Northern Patagonia.

Materials and Methods

Interviews were carried out on all (sixteen) the regional farms dedicated to cattle genetic improvement to collect qualitative and quantitative data (Lhoste, 2001) in order to identify and understand the strategies and practices of used by cattle breeders for genetic improvement. The study area includes the plateau and valleys of Rio Negro province, in North Patagonia.

Results

The first cattle breeders settled in the area in the early 90s. Most of them started between 2000 and 2009, ranging from producers of a few bulls a year to those with large numbers of animals. The results of the interviews showed that most establishments produce bulls to be sold at regional shows or directly to livestock producers. In a few cases they also sell sperm or embryos. Very few cows are sold as they are used for replacement. The number of bulls sold per year ranges from 3-170 depending on the size of the stud farms. Aberdeen Angus is the most popular breed followed by Polled Hereford. Only one establishment is starting to breed Limangus.

Genetic improvement by artificial insemination is common in most establishments. Moreover, even though embryo transfer is a technique that is costly and requires trained professionals in the field, many breeders plan to use this method in the short or medium term.

Discussion

Given that the sanitary barrier banned the entry of live animals from the north of the country, it was thought that breeder sales would increase significantly. This did not happen because the cattle breeders bought new stock before the change in 2013, as well as a decrease resulting from the drought that hit during 2007-2009, in many cases reaching 50% fewer animals. Farmers are in a process of retaining cows, so delaying the genetic improvement process. An equally important factor is the existence of fattening to corral with a special category called young uncastrated male, of which some animals are selected for breeding because of their phenotypic characteristics. Finally, there is a percentage of producers who use their own replacement bulls leaving calves born in the field as future parents. Some improvements are displayed in the price and number of animals sold during the 2015 Rural Exhibitions.

Conclusions

The breeder producers have not yet perceived any changes in the demand for bulls and in some cases sales were difficult or only equal to the previous year. It is expected that an improvement in the breeder market will be seen three years after the change in the animal health status of this zone. Some improvements are displayed in the price and number of animals sold during the 2015 Rural Exhibitions.

The breeder producers use artificial insemination and embryo transfer as strategies to incorporate genetic material from other regions and thus provide the local market with high-quality reproductive animals well adapted to the environment.

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