

PRELIMINARY SURVEY OF CREOLE CATTLE IN THE NAHUATERIQUE REGION OF EL SALVADOR AND HONDURAS

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PRELIMINARY SURVEY OF CREOLE CATTLE IN THE NAHUATERIQUE REGION OF EL SALVADOR AND HONDURAS

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The remote region of Nahuaterique in the Department of La Paz in Honduras was part of the territory of El Salvador until 1992. Nahuaterique has beautiful natural landscapes, abundant water, with extensive pine forest cover. One of the primary economic activities of the villagers is the use of cattle as traction to transport wood from the forests. This is a preliminary survey to validate the Creole cattle that exist around Nahuaterique. The validation included interviews with farmers, and phenotypic observations of the animals in Rancho Quemado (Morazán, El Salvador) and Nahuaterique (La Paz, Honduras). Bovines with typical Iberian-type horns, small ears, small size, compact, and adapted to the environment were found in the Caseríos Sabanetas and Los Patios (Nahuaterique) regions, while no Creole cattle were found in Morazán, El Salvador. The owners of these animals remain committed to preserving the genetics of the local Creole cattle to assure the production of oxen that are essential for transporting wood, as well as for the production of dairy products for local consumption.

Resumen

La remota región de Nahuaterique, en el departamento de La Paz (Honduras), formó parte del territorio de El Salvador hasta 1992. Nahuaterique posee bellos paisajes naturales, abundante agua y una extensa cubierta forestal de pinos. Una de las principales actividades económicas de los pobladores es el uso del ganado como tracción para transportar la madera de los bosques. Este es un estudio preliminar para validar el ganado criollo que existe en la zona de Nahuaterique. La validación incluyó entrevistas con los ganaderos y observaciones fenotípicas de los animales en Rancho Quemado (Morazán, El Salvador) y Nahuaterique (La Paz, Honduras). En las regiones de Caseríos Sabanetas y Los Patios (Nahuaterique) se encontraron bovinos con cuernos típicos de tipo ibérico, orejas pequeñas, tamaño reducido, compactos y adaptados al medio, mientras que en Morazán (El Salvador) no se encontró ganado criollo. Los propietarios de estos animales siguen empeñados en preservar la genética del ganado criollo local para asegurar la producción de bueyes que son esenciales para el transporte de

madera, así como para la producción de productos lácteos para el consumo local.

Introduction

The region of Nahuaterique belonged to the Department of Morazán, El Salvador until the ruling of The Hague in 1992, which changed its sovereignty to the Department of La Paz in Honduras. The local economy of the region is based on the cultivation of corn for local consumption and the exploitation of pine wood as a means to gain the finances to obtain other goods essential for subsistence (Vargas-Valdez, 2005). The characteristics of the micro-region are consistent with a potential for the production of coffee, fruit, vegetables, and cereals. The forested area offers the possibility of sustainable forestry systems, and biological corridors, as well as the management of the protected area of Nahuaterique. Nahuaterique is an area of beautiful natural landscapes, abundant water; the production of wild fruits including periwinkles, pears, peaches, and blackberries; tubers such as malanga; and the production of bee honey (Fuentes de Joya et al, 2015).

Keywords: Ox; Wood; Forestry; Rural development; Way of life; Timber exploitation.

Palabras clave: Buey; Madera; Silvicultura; Desarrollo rural; Medio de vida; Explotación maderable.



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Cattle are present in Nahuaterique. According to Santoro et al (2020), the tradition of breeding cattle in El Salvador dates back to the Spanish colonization and is still practiced today with very few changes. Uses for cattle include dairy production based primarily on a pastoral system with small herds (Mejía et al, 2003). According to Calderon-Castillo et al (1998), animal traction is also important for farmers in El Salvador, and the production of oxen is essential for this purpose.

The first cattle were brought to America by Christopher Columbus to the Caribbean islands. Following this introduction, the Spaniards conquerors then introduced cattle of this Iberian origin throughout all America (Inchausti and Tagle, 1967). El Salvador was no exception and the arrival of cattle in the country dates back to the period of the early conquest and colonization, as validated by archaeological remains of the settlement of Ciudad Vieja (ancient village of San Salvador) which was occupied between the period of 1528- 1545 (Scott, 2011). According to De Alba (2011), when Iberian cattle arrived on the American continent they had to adapt their characteristics to the specific local context. During the initial period of cattle management, human intervention was minimal, and natural selection was the most important factor.

The only formal study concerning Creole Cattle in El Salvador was made by Calles (1971), who found endangered populations of Creole bovines in Santa Ana, La Paz, and San Miguel Departments. At the present time, it is assumed that the Creole Cattle is fully assimilated by crossbreeding with Brahman and others specialized breeds (Martínez Aguilar 2020).

The objective of this research was to verify the presence of Criollo cattle in the area of Nahuaterique. These would be the last vestiges of the Salvadoran Creole Cattle that lack influence from zebu or northern European breeds. The study also investigated the role of cattle in the way of life of the inhabitants of the area.

Materials and Methods

Study Area

The research was conducted in the area of Caserío Rancho Quemado, Municipality of Perquin (Morazán, El Salvador), and in the area of Nahuaterique (La Paz, Honduras), figure 1. The zone has a high elevation above sea level, Rancho Quemado is at 1332 masl, and Nahuaterique is about 1765 masl. The average annual temperatures are between 14 to 25°C. The region has an average humidity, higher than 75%, the average annual rainfall is 1255 mm (Figuroa Cardoza, 2008).

Methodology

The paper is mainly based on bibliographic research, field surveys, and observations made by the authors.

Field Survey

This survey was conducted in November 2021. The field surveys were carried out by traveling from Rancho Quemado to Nahuaterique, a route of approximately 7 km on unpaved roads, in

the search, 7 cattlemen were interviewed. When cattle were found, the owner was asked about the origin of his cattle and their productive purposes. Responses were recorded in a survey, where the ranchers were asked if their animals were creole (referred to locally as "indio" cattle), what was the main purpose of owning them, what was their breeding system and if any crossbreeding was undertaken to introduced breeds. Every cattle farmer found along the route was interviewed (Rancho Quemado, 3 cattlemen; Nahuaterique, 4 cattlemen). The cattle were observed by recording their phenotypic characteristics such as coat color, horn shape, approximate height, characteristic of any cervical or thoracic hump, size and shape of ears, and rump shape. The animals were also photographed. The generalized and most relevant aspects of the surveys are presented in the results of this preliminary survey.

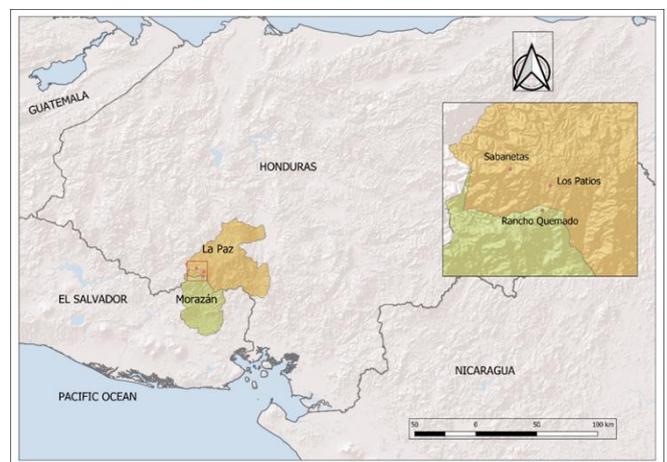


Figure 1. Study Area in the border zone of El Salvador and Honduras. (*Área de Estudio en la zona fronteriza de El Salvador y Honduras*)

Results

Rancho Quemado (Perquin, Morazán, El Salvador).

No Criollo cattle were found in Rancho Quemado. The 3 ranchers interviewed at this site gave references of knowing the Criollo Cattle and of having owned heads of cattle of these genetics, but not owning an animal at the time of the investigation.

The Rancho Quemado ranchers referred us to cross the border at Paso de Monos (Perquin) to look for creole animals in Nahuaterique. *Nahuaterique (La Paz, Honduras).*

Sites in Nahuaterique included the Caseríos de Los Patios, El Zancudo, and Sabanetas, 4 ranchers were interviewed in these locations. No Creole animals were seen in El Zancudo, where most cattle corresponded to a phenotype influenced by Holstein and Brown Swiss. In Los Patios and Sabanetas, more typically creole animals were found.

Creole cattle found in Los Patios

In this place, a rancher who owned a herd with strong Creole influence was found. He owned 13 animals, including cows, calves, a bull, and an ox. The creole cattle found in Los Patios were typical

Iberian types. Bulls were black-coated (figures 2 and 3) while oxen were reddish-coated (figure 4). The horn type was Iberian, being horizontal and forward in bulls and more upright lyre shape in cows. The cattle had small ears, no hump, and a high rump. Body size is small and compact. The owners characterized the cattle as very well adapted to the environment. When the owners were consulted about the genetic origin of the animals, they stated that they were "indios", the Salvadorian way of referring to Creole animals. The owners stated that they kept them to continue producing oxen since their way of life was mainly the exploitation of wood, and due to the conditions of the terrain, the compact, strong, and well-adapted Creole oxen were the only way they had to extract the logs.



Figure 2. Creole Bull (*toro criollo*).



Figure 3. Creole Young Bull (*toro criollo joven*).

Along with the bull in Figure 2 was a group of breeding cows for which he served as the sire of their calves. The cows of this group had traces of Creole influence along with some evidence of a mixture of specialized breeds (Figure 5). The lactating cows produced milk used traditionally for self-consumption to produce curd or fresh cheese.

Creole cattle spotted in Sabanetas

In this place were found a rancher who owned a herd with Creole influence. He owned 9 animals, including cows, calves, a Bull. In Sabanetas a reddish bull was found that had Iberian type horns, small ears, good conformation, a good Creole (Figure 6). This bull was the sire of a group of Creole cows (Figure 7). The owner of this herd also expressed the importance of continuing to breed animals of this type to maintain the production of creole oxen and also maintain milk production for self-consumption.



Figure 4. Creole Ox (*Buey criollo*).



Figure 5. Group of breeding cows (*grupo de vacas reproductoras*).



Figure 6. Creole Bull (*toro criollo*).



Figure 7. Creole Cow (*vaca criolla*).



Figure 8. Paisanita Creole Cattle, From Chiquimula (Guatemala). Source: Morales-Cantoral 2021. (*ganado criollo Paisanita*)

Discussion

In the Ch'orti' region, in the department of Chiquimula (Guatemala), the local and creole bovine called La Paisanita was identified (Figure 8), which has adapted over many years to production systems with minimal management and adverse environmental conditions, with the majority of rural families maintaining the breeding of these animal genetic resources (Morales-Cantoral, 2021).

As can be seen in Figure 8, the Creole Paisanita Cattle (Guatemala) are similar in morphology and coat colors to the Creoles found in this work in Nahuaterique. According to De Alba (1955), the Creole Bovines in El Salvador were similar to the Creoles of Honduras, Nicaragua, Limonero from Venezuela, and Costeño con Cuernos of Colombia.

The breeds mentioned above are red-coated, similar to the cattle found in Nahuaterique. However, in Nahuaterique as well as in El Paisanita, black-coated cattle were also found, similar to the Spanish Fighting Bull and other Spanish breeds. There appears to have been no selection aimed at homogenizing a coat color, which is a similar case to the Casanareño breed in Colombia, in which several coat

colors persist. According to Martínez Aguilar (2020), based on the study of Calles (1971), the most representative color of the Creole cattle of El Salvador was a reddish coat, including variants based on red (39.39%), followed by a black coat, with variants of it (24.24%). There are also many other minority colors so, in terms of color, the breed has many variants.

The Creole cattle have an essential role in the way of life of the inhabitants of Nahuaterique. Ranchers expressed the fundamental importance of the Creole oxen to extract and transport pine wood. Therefore, they kept Creole bulls to be able to maintain the production of newborns to train Creole oxen. According to Cordero & Aguilar (1990), the ox should have short, strong, well-placed legs, large, strong and the chest should be broad and deep. The high degree of hardiness produced by the Creole genetics makes the

animals more resistant to diseases and adverse environmental conditions. Oxen must also have a high degree of resistance to the attack of ectoparasites. Animals also must have docile temperaments (Cordero, 1984). This agrees with the characteristics described by the owners of the Creole genetics, who also state that the oxen with zebu (Brahman) influence does not adapt well to the working conditions required in their environment. According to Calderon-Castillo et al (1998), oxen constitute an important working capital in the predominant agricultural production systems in the Eastern zone of El Salvador. This is particularly prevalent in the Nahuaterique area, which has limited access during the rainy season due to its clay roads and steep slopes.

Conclusions

In this preliminary study, no Creole cattle were found in the jurisdiction of Morazán, El Salvador. Animals with Creole characteristics were found in Caserios Los Patios and Sabanetas, Jurisdiction of Nahuaterique.

The main reason for keeping Creole cattle in the Nahuaterique area is because of the way of life of the inhabitants, whose main activity is timber exploitation. Productive activity in which Creole oxen are crucial due to the harsh conditions of the terrain.

References

- Calderón Castillo, M.A; Erazo Ramos, R:A; Escamilla Jurado, M.A. (1998). Determinación de las técnicas de selección y adiestramiento de bovinos usados para tracción animal en el departamento de San Miguel, El Salvador. (Tesis de Ingeniería Agronómica). Universidad de El Salvador, El Salvador.
- Calles, E. (1971). Estudio del ganado criollo en El Salvador. (Tesis. Ingeniería Agronómica). Universidad de El Salvador. El Salvador.
- Cordero, W. (1984). Entrenamiento de bueyes para extracción forestal Iscozanán. Perú, Tropical Science center/USAID. 34 p.
- Cordero, W; Aguilar, M. (1990). Los Bueyes; Selección, Entrenamiento, Sanidad Y Nutrición. Turrialba. Instituto Tecnológico De Costa Rica. Centro De Información Tecnológica: Unidad De Tecnología Apropiaada, P. 75.
- De Alba, J. (1955). Observaciones sobre las razas Criollas de Colombia. *Agricultura Tropical* 11(6):423-434; 11(8): 647-656.
- De Alba, J. (2011). El libro de los bovinos criollos de América. Biblioteca básica de agricultura. Ed. Colegio de Postgraduados. México. 444p.
- Figueroa Cardoza, R.A. (2008). Clasificación de zonas bioclimáticas de El Salvador, sus herramientas y estrategias para diseño urbano-arquitectónico. (Tesis. Arquitectura). Universidad de El Salvador, El Salvador.
- Fuentes de Joya, R.L; Morataya Ramirez, L.E; Ponce Martinez, C.D. (2015). La utilización de los recursos naturales para mejorar las condiciones socioeconómicas de los habitantes de la comunidad de Nahuaterique, Departamento de Morazán 2014. (Tesis de Licenciatura en Administración de Empresas). Universidad de El Salvador, El Salvador.
- Inchausti, D.; Tagle, E. (1967). *Bovínotecnia. Exterior y razas*. 5ª Ed. Buenos Aires. AR. El Ateneo. p.419.
- Martínez Aguilar, E. (2020). Reseña del Origen y Desaparición de los Bovinos Criollos en El Salvador, el Primer Paso para una Posible Reintroducción. *Revista Agrociencia*, 3(16), 118-129. Retrieved from <https://www.agronomia.ues.edu.sv/agrociencia/index.php/agrociencia/article/view/171>
- Mejía Miranda, O; Pomareda, C; Pérez, E; Ganoza, V. (2003). Plan de Desarrollo Ganadero El Salvador. Retrieved from http://old.mag.gob.sv/index.php?option=com_phocadownload&view=category&download=7:plan-de-desarrollo-ganadero&id=4:planes&Itemid=93
- Morales-Cantoral, E.R. (2021). Caracterización Morfométrica Y Faneróptica De Los Bovinos Establecidos En La Región Ch'Ortí Del Departamento De Chiquimula, Guatemala. (Tesis de Licenciatura en Zootecnia). Universidad San Carlos de Guatemala, Guatemala.
- Santoro, A; Martínez Aguilar, E.A; Venturi, M; Piras, F; Corrieri, F; Quintanilla, J.R; Agnoletti, M. (2020). The Agroforestry Heritage System of Sabana De Morro in El Salvador. *Journal Forests* 11(7):747.
- Scott, E. (2011). Observaciones Preliminares de los Restos Fúnicos de la Operación 99-2. In: Fowler, W. 2011. Ciudad Vieja: Excavaciones, Arquitectura y Paisaje Cultural de la Primera Villa de San Salvador. Ed. Universitaria (UES). San Salvador, 231 p.
- Vargas-Valdez, R.E. (2005). El fallo de la Corte Internacional de Justicia y su efecto jurídico sociológico para los salvadoreños que habitan en el Exbolsón de Nahuaterique, entregado a Honduras. Retrieved from <https://webquery.ujmd.edu.sv/siab/bvirtual/BIBLIOTECA%20VIRTUAL/LIBROS/F/ADV0000002.pdf>