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CRIOLLO CATTLE IN LATIN AMERICA

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INTRODUCTION

Criollo cattle were introduced into Latin America during the early colonization period from 1520 to 1560. These cattle, of Spanish origin, passed first to the Canary Islands and then to Santo Domingo (Dominican Republic) and later to the American continent. This introduction by the colonists was, in the beginning, made to populate the tropics and the American highlands.

For many years Criollo cattle were the basis of the livestock enterprises in Latin America for beef and for milk production. More recent importations of European cattle, during the latter 1800's and the first part of this century, have nearly completely absorbed the Criollos to such an extent that in some regions they have completely disappeared. Recent accelerated absorption toward the Zebu, especially in tropical regions, has resulted largely due to the advantages of hybrid vigor of the cross which was, at least originally, interpreted by the cattleman as being due to the superiority of the Zebu. In spite of the repeated dilutions of the Criollo population by imported European and Zebu breeds there still exists a reduced nucleus of true Criollo in Latin America. The geographic distribution of some of the more important nuclei are as follows:

- a. Rivas, Nicaragua
- b. Río Limón, Zulia, Venezuela
- c. Choluteca, Honduras
- d. Sabanas de Bolívar, Colombia
- e. Central Provinces of Panamá
- f. Esmeraldas, Ecuador
- g. Curraleiro, Brazil

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In addition to these important nuclei other types of Criollo are known, such as the Romo Sinuano and Blanco Orejinegro of Colombia, the Barroso of Guatemala and the Durham of the highlands of Costa Rica.

The Latin American cattle industry, especially in tropical areas, depends principally on the utilization of pastures. Furthermore there exists various environmental conditions which complicate livestock production using highly specialized beef or dairy breeds. From this primary reason arises the basis and justification for conserving and evaluating the Criollo and determining what role it should play in Tropical livestock production either as a pure breed or a basis for crossbreeding systems with European and Zebu breeds.

#### CARACTERISTICS OF PRODUCTION IN CRIOLLO CATTLE

The following data are derived principally from the Criollo herds of the "Centro Agronómico Tropical de Investigación y Enseñanza" (CATIE) in Turrialba, Costa Rica.

##### Milk Production

Evaluation of Criollo cattle in Turrialba was initiated in 1947 with the introduction of a group of 50 cows of Nicaraguan origin with later importations from Nicaragua, El Salvador and Honduras. The evaluations from 1947 until the present time has been concerned with growth, production and reproduction of the Criollo and with their crossbreds. Table 1 shows some of the averages from the Turrialba Criollo herd.

These production averages indicate the value that Criollo cattle can have as a dairy breed in the American tropics if one compares these averages with those of the Zebu which are inferior. The reproductive performance of the Criollo is superior to that of the European breeds in the tropics and similar to that of the European breeds in temperate zones.

Results derived from crossbreeding studies in Turrialba also indicate the value of the Criollo in the improvement of milk production and the conservation of good reproductive performance. Table 2 shows some results of the Criollo and some crosses with European breeds for growth and production characteristics.

##### Beef Production

The absorption of the nucleus of Criollo cattle by the Zebu in the American tropics has been principally due to the notable hybrid vigor resulting in the product of these two breeds.

TABLE 1. Production characteristics of Criollo cattle.

Characteristic	Average Production
Birth weight	27 kg
Weight at First Calving	330 kg
Adult weight	408 kg
Age at first calving	36 months
Calving Interval	387 days
Services per pregnancy	1.7
Production first lactation	1793 kg
Adult production	2100 kg
Percent milk-fat	4.9
Production fat (adult)	103 kg
Adult age	94 months
Lactation length	274 days

TABLE 2. Production characteristics of different breeds and crosses.

Breed Group	Growth and Reproduction				
	Age at 1st Service (mo.)	Weight at 1st Calving (kg)	Adult Weight (kg)	Services/Pregnancy (no.)	Calving Interval (days)
Criollo	36	330	408	1.7	387
Jersey	31	277	331	2.2	377
F <sub>1</sub> (J x C)	32	306	375	1.7	373
F <sub>1</sub> x Ayrshire	30	296	---	1.7	---

  

	Production		
	Milk (kg)	Milk fat (%)	Milk fat (kg)
Criollo	1793	4.8	94
Jersey	2282	4.8	104
F <sub>1</sub> (J x C)	2557	4.9	122
F <sub>1</sub> x Ayrshire	2797		

Table 3 shows the results of crosses between the Brahman, Criollo and Santa Gertrudis breeds produced in the beef herd of CATIE in Turrialba.

TABLE 3. Averages in production for Criollo, Brahman and Santa Gertrudis breeds and their reciprocal crosses.

Breed Group		Birth Weight kg	Weaning Weight kg	13 month weight kg
Sire	Dam			
G	G	32.5	208	264
G	B	27.3	206	272
G	C	31.3	213	265
B	B	27.5	190	246
B	G	36.5	229	295
B	C	35.5	230	296
C	C	29.1	204	253
C	G	30.7	213	270
C	B	25.4	204	273
<b>X</b>		<b>30.7</b>	<b>211</b>	<b>271</b>

G = Santa Gertrudis, B = Brahman, C = Criollo

Source: Muñoz y Martin, 1969.

These results indicate the value of the Criollo in beef production as a purebred and when utilized as a crossbred with the Zebu. The weaning weights and 13-month weights of the Criollo were superior to those of the contemporary Brahman. The maternal ability of the Criollo, as manifested in the production of heavier weaned calves, is evidence that they are superior as milk producers to the Zebu dams.

The expression of hybrid vigor varies according to the type of cross involved. Table 4 shows that a high percent heterosis results from crossing the Brahman and Criollo whereas there is little heterosis in the crosses of Santa Gertrudis and Criollo.

Results in beef and milk production very similar to those found in Turrialba have been observed by investigations in Venezuela and Colombia where some of most prominent studies for evaluating the Criollo have been carried out.

These results demonstrate the possibilities which Criollo cattle can have for producing milk and beef. The scarcity of

TABLE 4. Percent heterosis in crosses between the Santa Gertrudis, Criollo and Brahman breeds.

Breed Group		% of heterosis		
Sire	Dam	Birth Weight kg	Weaning Weight kg	13-month weight kg
G	B			
B	G	6.6	9.1	10.1
C	G			
G	C	0.5	3.7	3.6
C	B			
B	C	7.6	10.6	12.3
Pure vs. Crossbreds		4.8	7.7	8.7

G = Santa Gertrudis, B = Brahman, C = Criollo

Source: Muñoz y Martin, 1969.

information gives an indication of the need to strengthen and intensify the efforts for their conservation and evaluation.

The Tropical Agricultural Research and Training Center (CATIE), considering the value of Criollo cattle and their importance in the development of the livestock production in Latin America, principally the tropical area, presents to the Working Group on Breed and Crossbreed Evaluation, the following proposals:

- Solicit the FAO to coordinate the efforts of the Latin American countries and International Institutions in establishing programs of conservation and evaluation of the nucleus of Latin American Criollo Cattle.

The emphasis in these programs should include the following areas:

1. Inventory of existing nuclei of Criollo cattle.
2. Establishment of a germplasm bank (semen).
3. Establishment of systems of recording.
4. Interchange of information and publication of bibliographies.