



TECHNICAL DATA SHEET

BEEF

Section A: General Information

<h3>A.1</h3>	<p>Beef production in Costa Rica:</p>	<p>In Costa Rica, the majority of cattle is intended for beef production, which mainly consists of females and the predominant breed in the sector is Brahman. The National Agricultural Survey (ENA) 2019 revealed that 62.7% of the national herd is intended for beef production, making it the main livestock activity in the country with a count of 1,023,953 animals; it is followed by dual-purpose cattle with 353,868 (21.7%), dairy cattle with 253,144 heads (15.4%), and finally, 2,502 work animals (0.2%).</p> <p>Together, they make up the estimated 1,633,467 heads reported in the country. Regarding gender distribution, 72.3% of the national herd are females; which represents a positive aspect in the growth capacity of the herd and the work focused on the reproduction of this type of animal. 94.6% of farms use a grazing system, which has implications for animal welfare. As for feeding, 97% manage cattle fed with grass, a factor affecting the nutritional properties of the meat.</p>		
<h3>A.2</h3>	<p>Main beef production areas in Costa Rica:</p>	<p>Over half of the cattle are distributed between the provinces of Guanacaste and Alajuela.</p> <p>In Alajuela, San Carlos stands out due to its high concentration, representing almost half of the beef cattle in the entire province.</p>		
<h3>A.3</h3>	<p>Costa Rica's exports:</p>	<table border="0"> <tr> <td data-bbox="664 1719 1142 1845"> <ol style="list-style-type: none"> 1. China (64%) 2. United States (27%) 3. Jamaica (3%) </td> <td data-bbox="1159 1719 1637 1845"> <ol style="list-style-type: none"> 4. Guatemala (2%) 5. Honduras (1%) 6. Other (3%) </td> </tr> </table> <p>In 2021, 35% of the production was exported. The sector's exports have been steadily increasing, mainly driven by the rise in sales to China in 2019.</p>	<ol style="list-style-type: none"> 1. China (64%) 2. United States (27%) 3. Jamaica (3%) 	<ol style="list-style-type: none"> 4. Guatemala (2%) 5. Honduras (1%) 6. Other (3%)
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<h3>A.4</h3>	<p>Beef harvest in Costa Rica:</p>	<p>For 2022, it was 388,659 cattle</p>	<h3>A.5</h3> <p>Importaciones de Costa Rica:</p> <p>Los principales proveedores Of beef in 2022 were from Nicaragua (54.4%), United States (43.6%), and Guatemala. Together, they represent almost 98% of total imports.</p>	

Section B: Beef Production Systems:

<h3>B.1</h3>	<p>Beef cattle farming in the country has two predominant production systems:</p> <ol style="list-style-type: none"> 1. Beef: under breeding, breeding-development, development, fattening, and full-cycle systems. 2. Dual-purpose: it is the one intended for both milk production and meat animals. 	<ul style="list-style-type: none"> • Breeding: includes calf production and sale at weaning. • Development: ranges from weaning to a weight of 350-380 kg. • Fattening: aims to produce the most kilograms of meat per unit area in the shortest possible time. • Complete cycle: includes breeding, development, and fattening.
<h3>B.2</h3>	<p>Main production systems:</p>	<ol style="list-style-type: none"> 1. Extensive (grazing): Animals are not subjected to any type of confinement, large areas are available for grazing, and supplementation is minimal. 2. Semi-intensive (semi-stabled): It consists of a mix of intensive and extensive systems where feeding is based on grazing plus extra supplementation. 3. Intensive (stabled): A system where animals are confined all the time, and they are provided with a balanced ration of food that allows them to meet their nutritional requirements, depending on production goals. 4. Silvopastoral: it's a production method that combines livestock, grass, and trees and/or shrubs (perennial canopies) in the same area.



B.3	Main production systems:	Grazing: 94.6% (natural grass 51.6%, improved grass 45.0%, and others). Semi-stabled fattening: 3.2% Stabled: 2.2%
B.4	Main feeding systems:	<ol style="list-style-type: none"> 1. Natural grass: herbaceous vegetation, native and adapted to the conditions existing in the area, which grows naturally. 2. Improved grass: forage species that have been genetically manipulated to be more productive and resistant to climatic variations, pests, and diseases. 3. Cut grass: forage species that allow high biomass production per unit area, which must be harvested and chopped to offer to animals or to store as fodder (silage and hay). 4. Other forages: herbaceous species with high protein or carbohydrate content used to enrich the animals' diet. 5. Concentrates: balanced foods, intended to provide protein, energy, fiber, vitamins, and minerals as part of the animal's daily requirements. 6. Agricultural residues: leftover from the agricultural agroindustry process or remnants of agricultural production, which can be used for animal supplementation.

Section C: **Fattening systems in Costa Rica: (Pérez, 2017)**

The production systems of cattle farming depend on the biological functions of reproduction, growth, and lactation. Reproduction and lactation are relevant in breeding systems, and growth is the fundamental function in fattening systems.

The most important nutrients for fattening livestock are water, proteins, energy sources (mainly structural carbohydrates from plants, such as cellulose and hemicelluloses), and minerals. In some situations, simpler carbohydrates are used (grains as starch sources and molasses as sugar sources). Vitamins, being ruminants on grazing, are not so relevant due to their abundance in green pastures and that several of them are "produced" by the microorganisms present in the rumen.

The main food used in breeding farms is grass for grazing, which the animal harvests by itself fresh. This is undoubtedly the cheapest food, and the most effective harvesting method. The second food that fatteners use is mineral supplements, including common salt. And some producers store fodder as hay (drying preservation) or silage (lactic fermentation preservation), but this practice is also uncommon compared to grass grazing.

C.1	Full-cycle fattening:	Calves (males and females) live with their mothers from birth and have access to consume milk directly from the udder. The pre-weaning period ranges from 6 to 8 months of age (specialized breeding) or 8-10 months in dual-purpose systems. From their weaning, the calves move on to their development phase (up to 350 kg); from there, they go to fattening lots.
C.2	Development of males:	Male calves are acquired at weaning or at one year of age from breeding producers or auctions, weighing between 150 and 250 kg. These calves are kept on the farms for about a year and are sold developed, weighing between 300 and 350 kg.
C.3	Fattening of males:	Developed bullocks are acquired, weighing between 300 and 350 kg, and they are "fattened" up to their processing weight, which ranges between 450 and 550 kg. The fattening period is about one year, although there are variations depending on the region (climate), genetic composition of the animals, and feeding strategies.
C.4	Development and fattening of males or females:	In this case, calves or heifers are acquired at weaning or at one year of age and are kept growing until they reach their market weight. For females, this happens between 350 and 450 kg, and for males between 450 and 550 kg. The average cycle of development-fattening is two years, with wide variations caused by the availability of food (quantity, quality, and seasonality of forage supply, supplements) and the type of animal being worked with.



C.5

Fattening of Cows:

Some producers focus on purchasing adult females with poor body conditions (thin cows) and fatten them over short periods (between 3 and 6 months). In this scheme, the producer's commercial skills are very important; profits often come more from the relative differences between purchase and sale prices, rather than from the weight gain of the animals.

C.6

Feedlot Fattening:

As part of the effort to make better use of land resources and achieve a better selling price for the calves produced, some feedlot fattening systems have been developed in Costa Rica. The common denominator for their feasibility is the availability of food at reasonable prices.

Section D: **Animal Health on the Farm: (Pérez, 2017)**

D.1

Periodic vaccination is essential.

A group of these diseases (Anthrax, Bovine Viral Diarrhea (BVD), IBR/IPV (Bovine Infectious Rhinotracheitis/Infectious Pustular Vulvovaginitis), and Hemorrhagic Septicemia) are the responsibility of the production sector because vaccines are available for their prevention, and their significance as trade barriers, epidemiological and zoonotic is not very high. In Costa Rica, vaccination against Anthrax and Septicemia is common, but there are also vaccines available against clostridial diseases, BVD. There are semi-annual vaccination protocols in the country that most fattening farms use.

D.2

Parasites:

Costa Rica is a tropical country with ideal conditions for a high prevalence of parasites in animals. For beef cattle, there are two groups of significant parasites, impossible to eradicate but need to be controlled:

- a. Internal parasites, mainly gastrointestinal and pulmonary.
- b. External parasites, notably ticks and torsalos.

In the sustainable intensive fattening system, internal parasites must be controlled using two strategies:

- a. Incidence diagnosis, made through laboratory analysis.
- b. Combat using dewormers when deemed necessary.

Section E: **Cattle Trade in Costa Rica:**

Cattle marketing in the country mainly operates under the auction system, a unique model that allows the trade of cattle from farms dedicated to different systems, of different ages and weights. This varies between regions, depending on the production systems in each region.

Section F: **Price Information:**

The average carcass price for 2022 was 2,856 colones. From 2021 to 2022, the carcass price increased by 20.1%.

The price experienced significant fluctuations throughout 2022, with growth during the first half of the year and a decrease in the second half.

SOURCE:

Pérez, E. 2007. *Management Manual: Sustainable Intensive Fattening Livestock Systems*. INTA. 43p.