



# Analysis of Branded Cattle Feed Industry in Saurashtra Region: A Case Study of Rajkot, Junagadh, and Amreli Districts, India

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## Authors' contributions

This work was carried out in collaboration between both authors. Authors MJB and PMR Collaborated on this project, thoroughly reviewed the work. Both authors read and approved the final manuscript.

## Article Information

DOI: <https://doi.org/10.9734/acri/2024/v24i7824>

## Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/119946>

Original Research Article

Received: 12/06/2024  
Accepted: 15/08/2024  
Published: 19/08/2024

## ABSTRACT

This study investigates the branded cattle feed industry in the Saurashtra region of Gujarat, specifically in Rajkot, Junagadh and Amreli districts. The research aims to analyze the competitive landscape and identify the problems faced by cattle feed dealers. Research was carried out using a descriptive research design and non-probability purposive sampling, 224 cattle feed dealers were surveyed across 32 talukas from the selected districts. The analysis covered compound cattle feed

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**Cite as:** Balas, Mukeshkumar J., and Prajapati Mahesh R. 2024. "Analysis of Branded Cattle Feed Industry in Saurashtra Region: A Case Study of Rajkot, Junagadh, and Amreli Districts, India". *Archives of Current Research International* 24 (7):14-20. <https://doi.org/10.9734/acri/2024/v24i7824>.

(CCF), cotton seed cake cattle feed, and maize seed cake cattle feed comparing various brands based on price, profit margin, and selling quantities. Key findings reveal significant variations in prices, profit margins and selling quantities among different brands and districts. For Compound Cattle Feed (CCF), Rajmoti 8000 was the top-selling brand in Amreli, Rajvadi 8000 in Junagadh and Doodh Shakti in Rajkot. In the cotton seed cake segment, Krishna Oil Mill in Junagadh, Khedut Oil Industry in Amreli and Ramkrushna Industry in Rajkot had the highest monthly sales. Using Garrett's ranking method, the study identified key strengths of top-selling brands based on parameters such as product quality, promotional activities, sales quantity, credit period and brand image. Doodh Shakti's strength in Rajkot was its sales quantity and promotional activities while Rajvadi 8000 in Junagadh focused on product quality and brand image. In Amreli Rajmoti 8000 emphasized product quality and promotional activities. Within the cattle feed industry, Problems faced by dealers included maintaining product quality, establishing appropriate pricing, accessing credit and a lack of storage facilities in which product quality is the most critical issue. This study provides valuable insights for farmers, dealers and businesses of the cattle feed industry in the Saurashtra region.

*Keywords: Cattle feed dealers; compound cattle feed; competitor analysis; price; product.*

## 1. INTRODUCTION

Animal husbandry and dairy farming with agriculture have been essential aspects of human existence since civilization. The livestock sector plays a crucial role in the Indian economy as part of agriculture. It makes a substantial contribution to both food security and the GDP. During 2021–2022, the livestock sector contributed 30.19% of the GVA of the Agricultural and Allied Sector and 5.73% of the total GVA (at constant prices) [1].

### 1.1 Animal Feed Industry

Animal feed refers to the food provided to domestic animals in animal husbandry practices. Global animal feed market Valued at approximately US\$ 501.9 billion in 2022. The global animal feed market size reached US\$ 518.4 Billion in 2023. The market is expected to reach US\$ 674.7 Billion by 2032 with a growth rate of 2.9% (CAGR) from 2024 to 2032. In the global animal feed market, the major players include Archer-Daniels-Midland Company, Cargill Incorporated, Charoen Pokphand Group, Dupont De Nemours Inc., Evonik Industries AG (RAG-Stiftung), ForFarmers N.V., Kemin Industries Inc., Nutreco N.V (SHV Holdings), Perdue Farms Inc. and Tyson Foods Inc etc. [2]. India's extensive reservoir of livestock and poultry constitutes a cornerstone in uplifting the socio-economic conditions of rural communities. According to the 20th Livestock Census, the country boasts approximately 303.76 million bovines (including cattle, buffalo, Mithun and yak), 74.26 million sheep, 148.88 million goats, 9.06 million pigs and around 851.81 million

poultry. Over the period from 2014-15 to 2021-22 the livestock sector has witnessed a remarkable compound annual growth rate of 13.36% [1].

### 1.2 Cattle Feed Industry

Animal feed fed to cows and other bovines to fulfil their nutritional demand is known as cattle feed. To supply vital nutrients such as carbohydrates, protein, lipids, vitamins, minerals, phosphorus, magnesium, omega-3 and fibres. The cattle feed can include several kinds of molasses, mixers, cereals, forages, oilseeds, protein cakes and agro-industrial by-products [3].

India holds the title of the largest milk producer globally. India contributed to 24% of the total global milk production in the fiscal year 2021-22. The global cattle feed market size hit US\$ 88.4 Billion in 2023 with a growth rate of 3.15% (CAGR) from 2024 to 2032. projects that the global cattle feed market will hit US\$ 118.0 billion by the end of 2032. Some of the key drivers of the cattle feed market are the growing competition among livestock producers and increasing awareness of diseases that may harm cattle [3]. The three components of cattle feed are concentrate feed, dry fodder/roughages and green fodder. The cattle feed industry, a significant component of the animal feed industry is currently developing into an organized sector from a fragmented industry [4]. Cattle Feeds can be classified into three categories: roughages (high-fibre byproducts like pasture forages and hays), concentrates (grains, molasses, supplements), and mixed feeds (complete

**Table 1. Shortage on availability of Cattle feed in India in 2021**

Feed	Requirement (MT)	Availability (MT)	Shortfall (%)
Concentrates	123	45	63.41
Green Fodder	1025	390	61.95
Dry Fodder	570	443	22.28

**Table 2. Different forms of CCF according to NDDB specifications**

Sr. No.	Characteristic Requirement	Type 1	Type 2
1	Moisture (maximum)	11 %	11 %
2	Crude protein (minimum)	22 %	20 %
3	Crude fat (minimum)	3 %	2.5 %
4	Crude fibre (maximum)	7 %	12 %

balanced diets or varying in energy, protein or fibre levels) [5].

Table 1 shows information regarding feed requirements, availability and shortfalls of cattle feed in India in million tons for three types of feed: concentrates, green fodder and dry fodder. Concentrates and green fodder both have huge shortfalls with percentages of 63.41% and 61.95%, respectively. The shortfall in dry fodder is 22.28% which is noticeably smaller [6].

The concept of branded cattle feed being a packaged product is not a new topic. It is increasing in popularity in India too. A combination of different concentrate feed ingredients blended in the right proportions is called compound feed. There are several types of compound cattle feed such as mash, pellets, crumbles, cubes and more. There are two different forms of CCF based on the amount of protein present in compound feed according to NDDB shown in Table 2 [7].

Major players in the Indian feed industry include integrated feed manufacturers, small-scale feed producers and global agribusiness corporations. Some prominent companies operating in this sector are Godrej Agrovet, Cargill India, Venky's India, and Alltech 7 India [8].

The present study was undertaken with three objectives: to carry out competitor analysis of the branded cattle feed industry in Rajkot, Junagadh and Amreli Districts of the Saurashtra Region of Gujarat and to find out the problems faced by dealers concerning the cattle feed industry.

## 2. MATERIALS AND METHODS

The Gujarat state comprises 33 districts. Among them, three major districts Rajkot, Junagadh and

Amreli from the Saurashtra region were selected for the study. In which selected districts cover the major area of the Saurashtra region of Gujarat. All 32 talukas of these three districts were covered. out of 32, 11 talukas are in Rajkot district, 10 talukas in Junagadh and 11 talukas in Amreli district. The research design employed was descriptive and a non-probability purposive sampling method was used to select the sample unit which is cattle feed dealers. A total of 224 cattle feed dealers, 7 from each taluka hence 77 from the Rajkot district, 70 from Junagadh and 77 from Amreli district were surveyed. The research instrument was a semi-structured schedule and the data collected were classified, tabulated and subjected to statistical analysis to draw logical conclusions. The study was carried out from 25<sup>th</sup> January to 10<sup>th</sup> April, 2024. Tabular analysis was used for the analysis for competitor analysis of the branded cattle feed industry concerning branded cattle feed products for two attributes price and profit margin and Henry Garrett's ranking method (1969) was used to get the top two strong parameters of the branded Cattle feed products which are most selling in the Saurashtra region. The Weighted Average Mean was used to identify problems faced by dealers concerning cattle feed.

Henry Garrett's ranking method (1969) was used to rank the parameters of compound cattle feed products such as Quantity sales of product, Quality of product, Credit period, Brand image, Timely availability and Promotional activity.

The following formula was used for Henry Garrett's ranking method (1969) [9]:

$$\text{Percent position} = 100 (R_{ij} - 0.5) / N_j$$

Where:  $R_{ij}$  = Rank given for the  $i^{\text{th}}$  factor by  $j^{\text{th}}$  respondents

$N_j$  = Number of factors ranked by  $j^{\text{th}}$  respondents

To calculate the Weighted Average Mean, the Linkert scale was used for problem assessment for cattle feed dealers in which a ranking system from 1 to 5 was employed. The ranks were assigned to each problem level as follows: No Problem (ranked 1), Low Problem (ranked 2), Medium Problem (ranked 3), High Problem (ranked 4) and Very High Problem (ranked 5).

The following formula was used for the calculation of the Weighted Average Mean:

$$\text{Weighted Average Mean (X)} = (F_1X_1 + F_2X_2 + F_3X_3 + F_4X_4 + F_5X_5) / X_t$$

Where: F = Weight given to each response

X = Number of responses

$X_t$  = Total number of responses

### 3. RESULTS AND DISCUSSION

The analysis of the branded cattle feed industry in the Saurashtra region of Gujarat provides valuable information for farmers and dealers of Rajkot, Junagadh and Amreli District. The comparison of profit margins, prices and selling quantities for different branded compound cattle feeds, cotton seed cake cattle feeds, and maize seed cake cattle feeds allows farmers to make informed decisions based on their specific requirements and budget. The analysis reveals variations in prices, profit margins and selling quantities among different brands and companies [10-12].

#### 3.1 To Carry Out Competitor Analysis of the Branded Cattle Feed Industry

Competitor analysis of the branded cattle feed industry was carried out based on the total quantity sold of products in the respective districts. The data collected were classified and tabulated to find out the highest-sold product per month in the district for compound cattle feed, Cotton cake cattle feed and maize cake cattle feed.

##### 3.1.1 Profit margin and price comparison of the branded compound cattle feed (CCF), Branded Cotton seed cake and Maize seed cake cattle feed in Rajkot, Junagadh and Amreli district

###### 3.1.1.1 Compound cattle feed (CCF) in Rajkot, Junagadh and Amreli district

Number of compound cattle feed was sold by the various firms like Doodh Shakti, Rajvadi 8000,

Rajmoti 8000, Tiwana 8000, Nature Well 8000, Dudh Malai, Ras Malai, SK 8000, Amidhara, Power Dan, Ramkrupa 8000, Gokul, Kesar Malai, 3 Star, Hiramoti, Doodh Sagar, Madhuram, Vishva Sp., Dairy Sagar, Milk More, Makhan Mishree, Dudh Mani, Royal 8000, Riyal Chana Chor, Tiwana 10000, 4 Star, Samrudhi, Banshree, Energy. The price of compound feed per bag and bag size, quality and dealer margin varied with products.

Based on a Field survey found In the Rajkot district, the price at which the feed is sold to farmers known as the farmer price varies from ₹18.75 to 33 Rs per kg of CCF in which Samrudhi fetches the highest price. Dealer margins or the profit margin for the dealer varied from ₹ 40 to 65. Doodh Shakti has a huge margin. Doodh Shakti has the highest selling quantity and Energy has the lowest with the feeds having selling quantities ranging from 12.88 to 242 MT per month in the Rajkot district.

In Junagadh district, the Compound cattle feed prices for farmers vary between ₹ 23.33 to 33 per kg of CCF. Madhav Cattle Feed has the lowest price and Godrej Agrovvet Ltd. has the highest price per kg of feed. Dealer margins ranged from ₹ 40 to 70 per bag. Makhan Mishree has the lowest margin and Girgay (Nature Well Cattle Food) has the highest. The monthly selling quantities vary from 14 to 289.20 MT per month. Rajvadi 8000 has the highest selling quantity while Madhuram has the lowest.

In Amreli, the farmer prices for the compound cattle feed per kg of CCF ranged from ₹ 18.75 to 31 Rs. with Gokul having the lowest price and Tiwana 10000 being the most expensive. The dealer margins vary from ₹ 30 to 100 per bag with Khedutchhap offering the lowest margin and Takat having the highest. The selling quantities per month ranged from 34.7 to 357.60 MT. in which Rajmoti 8000 has the highest selling quantity while Sardar has the lowest.

###### 3.1.1.2 Cotton seed cake cattle feed in Rajkot, Junagadh and Amreli district

The profit margin and price of branded cotton cake cattle feed in Rajkot district. The farmer prices range from ₹ 30 to 32.2 per kg of Cotton Seed cake with Kannaya cattle Feed having the highest price. The dealer margins which represent the profit margin for the dealers varied from ₹ 25 to 50 per bag. Khushi Oil Mill offers the highest dealer margin while Doodhdhara

Cattle Feed and Patidar Cattle Feed provide the lowest. The selling quantities ranged from 29 to 310 MT per month. The Ramkrushna industry has the highest monthly selling quantities while Bansi Cattle Feed has the lowest.

In Junagadh district, the prices which farmers pay per kg of cotton seed cake cattle feed ranged from ₹ 27.78 to 34.89 with Patidar cattle Feed being the most expensive and Laxmi Cattle Feed having the lowest price. Dealer margins range from ₹ 20 to 50 per bag. Ramkrushna industry offers greater earnings while Ganesh Cattle Feed has the lowest margins. The selling quantity ranged from 38.7 to 835.65 MT per month. Madhav Cattle Feed has the lowest selling quantity while Krishna Oil Mill has the most.

In Amreli, the prices that farmers pay per kg of cotton seed cake vary between 27.78 to 34.89 Rs. Patidar cattle Feed is the most expensive and Shree Patel Oil Industry has the lowest price. Dealer margins ranged from 25 to 60 Rs per bag. Raghunandan Oil Industry offers the highest profit margin for dealers while Ganesh Cattle Feed has the lowest. The selling quantities ranged from 62.5 to 760.05 MT per month with the Khedut Oil Industry having the highest selling quantity and Doodhdhara Cattle Feed having the lowest.

### 3.1.1.3 Maize seed cake cattle feed in Rajkot, Junagadh and Amreli district

In Rajkot district, the price of maize seed cake cattle feed varied between ₹ 19.45 and 45 per kg of feed. Mayank Cattle Feed was the costliest for farmers. Dealer margins vary with Mayank Cattle Feed having the greatest profit while a range of margins was ₹ 40 to 50 per bag. The monthly selling quantity of maize cake ranged from 6 to 122.5 MT, with Vishwa Cattle Feed having the highest monthly sales of Maize seed cake.

In Junagadh, the prices that farmers pay for maize seed cake range from ₹ 20 to 39 per kg with Mayank cattle feed being more expensive and Vishwa cattle feed having the lowest price. Dealer margins per bag ranged from ₹ 35 to 55 with the lowest margin offered by Maldhari Cattle Feed and the highest margin offered by Mayank Cattle Feed. The monthly selling quantities ranged from 8.4 to 194 MT. The highest selling quantity was for Mayank Cattle Feed while the lowest was for Nilkamal Cattle Feed.

In Amreli, the farmer prices for the Maize seed cake cattle feed ranged from ₹ 22.67 to 37.5 per

kg of Feed with Krishna Cattle feed offering the lowest price and Mayank cattle Feed being more expensive. The dealer margins per bag varied from ₹ 35 to 55 with Krishna Cattle Feed having the lowest margin and Mayank Cattle Feed providing a higher margin. The selling quantities ranged from 13.50 to 183.20 MT per month. Balaji Cattle Feed has the highest selling quantity while Patidar Oil Industry has the lowest.

### 3.1.2 Competitors analysis of key players in cattle feed industries in rajkot, Junagadh and Amreli District

This analysis considered six parameters for evaluating the CCF product's performance: quantity of product sales, promotional activities, product quality, timely availability, brand image and credit period. To determine the significance of each parameter Garrett's ranking technique was employed and the parameters were assigned respective rankings. Among them the top two ranked parameters identified as the strength of the top 5 mostly selling CCF products in the district based on the monthly average quantity sales of the product.

In the Rajkot district, Doodh Shakti focuses on Quantity sales of products and promotional Activity while Rajvadi 8000 emphasizes product quality and Brand image. Rajmoti 8000 balances quality and credit period and Tiwana 8000 focuses on quality and promotional activity. Nature Well 8000 focuses on the quality of product and credit availability to dealers.

Compound Cattle Feed players of Junagadh district the Rajvadi 8000 place emphasis on the quality of product and brand image while Nature Well 8000 prioritizes the quality of product and timely availability. SK 8000 focuses on the quality of the product and timely availability. Gokul highlights the quantity sales of product and brand image whereas Rajmoti 8000 emphasizes the quality of product and promotional activity.

The competitor of the cattle feed industry in Amreli district, the Rajmoti 8000 focuses on the quality of product and promotional activity. Malai Misri prioritizes the quantity sales of product and timely availability. Spe. Rajmoti emphasizes promotional activity and brand image. SK 8000 highlights the quality of the product and timely availability while God Mother 8000 places importance on quantity sales of product and promotional activity.

### 3.2 To Identify Problems Faced by Dealers Concerning Cattle Feed

Table 3 presents the problems faced by dealers in the Junagadh, Rajkot and Amreli districts regarding cattle feed. It outlines factors such as Quality, Price, Lack of Credit, Lack of Storage and Availability. The problems are categorized into different levels of severity: NP (No Problem), LP (Low Problem), MP (Medium Problem), HP (High Problem) and VHP (Very High Problem).

Dealers faced significant problems of maintaining product quality as indicated by the medium to very high problem scores reported. Pricing was another notable concern with dealers struggling to establish appropriate prices and navigate price fluctuations. Access to credit presents a moderate issue with a substantial number of dealers encountering difficulties in obtaining credit period. Insufficient storage facilities also pose challenges, affecting the efficiency of dealers' operations.

**Table 3. Problems faced by dealers of the Cattle Feed Industry in Junagadh, Rajkot and Amreli districts**

Factor	WAM	Rank
Quality of product	4.15	1
Price	4.00	2
Lack of Credit	3.51	3
Lack of Storage	2.37	4
Availability	2.09	5

### 4. CONCLUSION

The research was conducted on the branded cattle feed industry in the Saurashtra region of Gujarat specifically focusing on Rajkot, Junagadh and Amreli districts. The study provides valuable insights into the competitive landscape and problems faced by cattle feed dealers. The study employed a descriptive research design, utilising a non-probability purposive sampling method to survey 224 cattle feed dealers across 32 talukas from Rajkot, Junagadh and Amreli districts. The study shows significant variations in prices, profit margins and selling quantities among different brands and districts. For Compound Cattle Feed (CCF), Rajmoti 8000 was the top-selling brand in Amreli, Rajvadi 8000 in Junagadh and Doodh Shakti in Rajkot. In the cotton seed cake segment, Krishna Oil Mill in Junagadh, Khedut Oil Industry in Amreli and Ramkrushna Industry

in Rajkot had the highest-selling brands. While in Maize cake cattle feed segments Vishwa Cattle Feed in Rajkot district, Mayank Cattle Feed in Junagadh and Balaji Cattle Feed in Amreli district have the highest-selling brands. Utilizing Garrett's ranking method, the study identified key strengths of top-selling products based on parameters like product quality, promotional activities, quantity sales of product, credit period and brand image. The study shows that in Rajkot district, Doodh Shakti's strength was quantity sales of the product and promotional activities while in Junagadh district Rajvadi 8000 focused on product quality and brand image and in Amreli district Rajmoti 8000 focused on the quality of product and promotional activities. Dealers of the Cattle feed industry faced problems like maintaining product quality, establishing appropriate pricing, accessing credit and having sufficient storage facilities. Out of these problems maintaining product quality was the most critical problem followed by establishing appropriate pricing and accessing credit respectively while storage and availability of products are significantly less important problems in this region.

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### ACKNOWLEDGEMENTS

The funding agency did not play a role in the study design, data collection, analysis, interpretation, or manuscript writing.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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*Peer-review history:*  
*The peer review history for this paper can be accessed here:*  
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