

## **SIGNIFICANCE OF PRODUCT TYPE AND BRAND IN THE PURCHASING BEHAVIOUR OF CATTLE FEEDS: AN EMPIRICAL STUDY IN KERALA**

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### **Abstract**

*Cattle feed industry is a major segment of animal feed industry. This industry is gradually evolving into an organized sector and the feed manufactures are increasingly using modern and sophisticated methods that seek to incorporate best global practices. This industry has got high potential for growth in India, given the fact that the country is the world's leading producer of milk and its production is expected to grow at a compounded annual growth rate of 4 per cent. Besides, the concept of branded cattle feed as a packaged commodity is fast gaining popularity in rural India. There can be a positive change in the demand for cattle feed because of factors like (i) shrinkage of open land for cattle grazing, urbanization and resultant shortage of conventionally used cattle feeds, and (ii) introduction of high yield cattle requires specialized feeds. Earlier research studies done by the present authors have revealed the significant growth prospects of the branded cattle feed industry, the feed consumption pattern and the relatively high share of branded feeds, feed consumption pattern based on product types (like, pellet and mash), composition of cattle feed market and the relatively large shares of Kerala Feeds Ltd. (KFL) and Kerala Solvent Extractions Ltd. (KSE) brands, the major factors influencing the purchasing decisions etc. As a continuation of the earlier studies, this study makes a closer look into the significance of product types in the buyer behavior, level of awareness about the brand and its implications on purchasing decisions, and the brand-shifting behavior and its determinants.*

**Key Words:** *Compounded Cattle Feed (CCF), Product Type, Brand Awareness, Brand Shift.*

### **Introduction**

Cattle feed Industry, a major ingredient of animal feed industry is currently evolving from a fragmented industry into an organized sector. The feed manufactures are increasingly adopting modern and sophisticated methods in an effort to incorporate best global practices. This industry has got high growth potential in India, given India's position as world's leading producer of milk. The production is expected to grow at compounded annual growth rate of 4 per cent. The way the rural farmers makes their purchases of feed and have their buying priorities is quite different from those of their urban counterparts. Hence one need to find out the demand patterns, consumption pattern, customer preferences, their attitude towards different product types and brands, their brand shifting behavior and its determinants etc. Research findings on these aspects are essential for formulation of strategies for marketing of cattle feeds.

### **Branded Cattle Feed Industry**

The concept of branded animal feed as a packaged commodity, though not a very recent concept, is gaining popularity in the rural folks in the recent past. The packaged feed, as a product possesses, various factors such as hygiene, quality, convenience to handle, etc. to its advantage. The age old feeding pattern practiced in India is a mixed variety consisting of green grass, dry grass, cotton seed cake, coconut cake, rice bran etc. From the time immemorial, the cows were fed by grazing in open areas. But, as time elapsed, due to changes both environmental and social, there has been gradual shift from the age-old pattern to Compounded Cattle Feed (CCF). The Indian milk scenario witnessed a total metamorphosis by the advent of Operation Flood; thus greatly increasing the per capita consumption of

milk and sparking of high demand for feed. On analyzing the factors related to the cattle feed demand, it is seen that there can be a positive change in the market demand for feeds. The major factors contributing to this are: (i) Shrinkage of open land for cattle grazing, urbanization and resultant shortage of conventionally used cattle feeds, (ii) Introduction of high yield cattle requires specialized feeds.

### **Literature Review and Research Gap**

Sinha, Abhishek (2000) [1] has made an elaborate discussion on the current status, problems and challenges of cattle feed industry in India. The growing trend and favourable macro-economic and demographic factors resulting in bright prospects of the industry etc. have been discussed by the author.

CLFMAI (2012) [2] Compound Livestock Feed Manufacturers of India (CLFMAI) in its industry analysis on Livestock Feed Industry in India has studied the trend and pattern of the growth in this industry, the growth prospects of the industry and also the drivers of this growth.

John M P & Manoj P K (2013) (a) [3] in their research paper have analyzed the purchasing pattern and buyer behavior in respect of cattle feed products with reference to the cattle feed market in Kerala. The major factors influencing their purchasing decision like price and quality, convenience etc. have been pointed out in the paper. The purchasing pattern in respect of different product-types (pellet and mash) and brands (KFL, KSE etc.) have been discussed, and broad marketing strategies have been suggested.

John M P & Manoj P K (2013) (b) [4] in their research paper have made a detailed analysis of the dynamics of cattle feed industry in India with a focus on Kerala state. Feed consumption pattern, composition of the cattle feed market, pattern of cattle holdings vis-à-vis feed consumption, milk-yield vis-à-vis use of branded cattle feed, factors influencing purchasing decisions etc. have been studied. The paper has suggested strategies for effective marketing of cattle feed and hence increasing the market share. In view of the foregoing, it is noted that focused studies on product-types and their influence on buying decisions, level of brand awareness among customers, factors influencing brand-shifting etc. have not been undertaken so far. Thus, the present study seeks to bridge the research gap as above.

### **Objectives of the Study**

- (i) To make a detailed study of the cattle feed market in Kerala so as to assess the demand pattern, consumption pattern, buyer behavior, and factors influencing purchasing decisions.;
- (ii) To critically analyze the buyers' attitude towards product-types (pellet and mash) and major brands (KFL, KSE, and others) and to study their awareness of a typical brand, KFL;
- (iii) To formulate meaningful marketing strategies for effective cattle feed marketing, particularly from the perspective of KFL – a Government company, based on the findings of the study.

### **(iv) Hypotheses of the Study (Null)**

- (i) No distinction is made between the two types of products (Pellet and Mash) during the course of purchase of cattle feed products.
- (ii) All buyers of cattle feed products are aware of the Kerala Feeds Ltd. (KFL) brand.
- (iii) Brand switching is just by chance and it depends on customer decision taken randomly without any specific consideration.

### **Methodology of the Study**

#### **❖ Methodology**

The study is both analytical and exploratory. It is analytical to the extent that it seeks to analyze the current market structure, growth trend and pattern, and future prospects of cattle feed industry in Kerala. It is exploratory as it seeks to formulate suitable strategies and approaches for marketing of cattle feed products, as per the current status of the buyers' attitude towards different product types and brands.

➤ **Data Collection** Both primary and secondary data are collected for the study. Primary data are collected from samples of 180 dairy farmers from central Kerala using a carefully designed, pre-tested Questionnaire. Secondary data are collected from authentic sources like publications of the Ministry of Agriculture of the State and Central Governments, Reserve Bank of India, National Council for Agricultural Research (NCAR), reports of industry associations like CLFMAI, research journals etc.

➤ **Sampling Frame** A Multi-stage Sampling methodology is adopted for data collection. In the First Stage (Geographical Sampling), among the 3 regions in Kerala (ie. Southern, Central and Northern) the Central Kerala region is chosen for detailed study; as the Central Kerala is noted to be representative of the entire Kerala based on earlier preliminary studies by the same authors. Accordingly, of the 14 Districts in Kerala, 6 Districts located at Central Kerala region (Malappuram, Palakkad, Thrissur, Ernakulam, Kottayam and Idukki) are chosen for detailed study. In the Second Stage (Random Sampling) a sample comprising of proportionate number of farmers are selected from each of the 6 Districts in Central Kerala as noted above. Random Sampling (lottery method) is adopted to identify the members to be included in the sample from among the total population. Based on the above multistage sampling procedure, 180 farmers are included in the sample.

❖ **Analytical Tools and Software Packages**

Various popular statistical tools of data analysis like Chi-Square test, t-test, ANOVA etc. are used for the analysis of data. Statistical packages like SPSS, STATA etc. are used for data analysis.

## Analysis and Interpretation

❖ **Expected Growth of Animal Population**

Growth of animal population will have a direct and positive impact on cattle feed consumption. Increase in cattle feed consumption is linked to increase in animal population. Table I shows the expected growth of animal population in Kerala. It is noted that while 54.44 per cent of farmers expect an increase in animal population, only 16.11 percent expect a negative growth. This is a positive sign. (Table I).

Table I: Expected Growth in Cattle Population

Sl. No	Response	Nos	Percent
1	Positive	98	54.44
2	Negative	29	16.11
3	No change	43	23.89
4	No response	10	5.56
	Total	180	100.00

(Source: Survey Data)

❖ **Present Feed Consumption Pattern**

The pattern of feed consumption is studied to have new insights into the current behavior of farmers as knowing this aspect, helps to frame strategies for capacity building in feed production and promotion of cattle feed could be made more effectively. Table II shows that 31.67 per cent gives Natural and branded feed, 26.11 per cent gives all the category of feeds. In effect, as high as 57.68 per cent uses branded

feeds and also other feeds. This points to 'nearing maturity' market condition, one that absorbs the ready-made CCF as regular feed for milking cows. (Table II)

Table II: Present Feed Consumption Pattern

Sl. No	Response	Nos	Percent
1	Natural feed	5	2.78
2	Fodder	8	4.44
3	Branded feed	34	18.89
4	Natural and fodder	6	3.33
5	Natural and branded	57	31.67
6	Fodder and branded	23	12.78
7	All the feed category	47	26.11
	Total	180	100

(Source: Survey Data)

#### ❖ *Composition of Cattle Feed Market*

Among the users of the branded cattle feed products as high as 53.33 percent of the pellet type products are supplied two major brands KSE and KFL. The rest 46.66 percent is shared by all other brands. However, in respect of Mash type products, only one major brand (viz. KSE) is offering this product, and not KFL. Hence, the balance as high as 91.11 percent of the total supply relates to all other brands including unbranded products. Thus, unlike in the case of Pellet type products, the prominence of major brands is very poor in respect of Mash type products. (Table III).

Table III: Relative Share of Cattle Feed Market

Sl. No	Brand Name (Manufacturer)	Pellet type (Percent)	Mash type (Percent)
1	KSE	27.78	08.89
2	KFL	25.56	0
3	Others	46.66	91.11
	Total	100.00	100.00

(Source: Survey Data)

#### ❖ *Cattle Holdings and Consumption Pattern*

Analysis to find the average cattle holding and consumption pattern in respect of both pellet and mash type of feeds has been done in the three regions under study (Table IV). It is noted that mash consumption is quite higher than pellet consumption. Mash consumption is 82.32 kg per cattle per month whereas pellet consumption is 65.62 kg. The average mash consumption per month is 680 kg while that of pellet consumption is 542 kg. (Table IV).

Table IV: Cattle Holdings and Feed Consumption

Sl. No	Particulars	Unit	Quantity
1	Average cattle holding per month	No.	8.26
2	Average pellet consumption per month	kg	542
3	Average mash consumption per month	kg	680
4	Pellet consumption	kg	65.62

	per cattle per month		
5	Mash consumption per cattle per month	kg	82.32

(Source: Survey Data)

❖ **Milk-yield and Use of Branded Cattle Feed**

Frequency of farmers who felt the yield trend is positive is as high as 79.44 percent and only 12.22 percent among them has felt a negative need, while 7.22 percent felt no change in the per cent felt there is no change. It is noted that there is a positive attitude towards branded cattle feed. (Table V).

Table V: Milk Yield and Branded Cattle Feed

Sl. No	Response	Nos	Percent
1	Positive	143	79.44
2	Negative	22	12.22
3	No change	13	7.22
4	Non response	2	1.12
	Total	180	100

(Source: Survey Data)

❖ **Other Major Findings from the Field Study**

It is found that 26.11 per cent of the farmers use all types of feeds and 18.89 per cent depends only on branded feeds. Hence, there is good scope for bringing conventional feed users towards branded products. The consumption of pellet form of feed is increasing and has got regional brand leaders. The consumers of pellet feed showed a positive attitude towards the animal farming and further use of pellet. Price, convenience, availability and quality are the major factors influencing the purchase decision of farmers. Quality as a single reason has low priority. Over half of the farmers seek advice of Doctors.

**Testing of Hypotheses**

❖ **Hypothesis – I (Product Types)**

H<sub>0</sub>: No distinction is made between the two types of products (Pellet and Mash) during the course of purchase of cattle feed products.

H<sub>a</sub>: Purchase of Pellet and Mash types of product affect each other; customers who buy both types prefer the brand that offers both types.

The 2X2 Contingency Table (Chi-Square test) is prepared first for further analysis (Tables VI to IX).

Table VI: Market share of major Brands

Types	KFL	KSE	Other Brands
Pellet	25.56	27.78	46.66
Mash	0	08.89	91.11

(Source: Computed from Survey Data, See Table III)

Table VII: Share of KSE vis-à-vis other Brands

Types	KSE	Other Brands	Total
Pellet	27.78	72.22	100

(Source: Computed from Survey Data in Table VI)

Table VIII: Contingency Table (for Chi-Square Test)

KSE	Other Brands	Total
18.34	81.66	100
18.33	81.67	100
36.67	163.33	200

(Source: Computed from Survey Data in Table VII)

Table IX: Finding the Chi-Square Value

Class	Observed (f)	Expected (e)	Chi-Square= [(f-e)*(f-e)]/e
Pellet From KSE	27.78	18.34	4.859
Pellet from other Brands	72.22	81.66	1.091
Mash from KSE	8.89	18.33	4.862
Mash from Other Brands	91.11	81.67	1.091
Grand Total = Chi-Square Value			11.903

(Source: Computed from Contingency Table, VIII)

Chi-square variate C tabulated with (2-1) X (2-1) = 1 degree of freedom at 5% LOS (Level of Significance) is 3.841. The Calculated value (11.903) being higher than the Table Value (3.841) at 5% LOS

**Null hypothesis is rejected at 5% LOS.**

From the above analysis it is clear that sales of Pellet and Mash both affect each other. Customers going for both types of product prefer to buy the product of the same brand. Hence KSE has more sales than the KFL. This suggests that KFL must think of launching Mash type too for better sales.

❖ **Hypothesis – II (Brand Awareness)**

Let Xi denotes a random variable which is assigned values as 0 or 1 as follows:

- 1 - When the response is positive regarding awareness about the brand.
- 0 - When response is negative or respondent is unaware about the brand.

Here, under the null hypothesis and alternate hypotheses are defined as follows:

H<sub>0</sub>: All buyers of cattle feed products are aware of the Kerala Feeds Ltd. (KFL) brand.

H<sub>a</sub>: Not all buyers of cattle feed products are aware of KFL brand

Hence, the mean (μ) of observation of the sample survey, under the null hypothesis is, H<sub>0</sub>: μ=1

Observed mean (π) under the sample survey

π =

0.77. Now to test this mean to check awareness among buyers. T-test is applied as follows:

Calculated value of T is:  $T = (\pi - u) / S\sqrt{n}$ , where

$S = \sum [((Xi - \pi) * (Xi - \pi)) / (n-1)]$ , and n = 180

$S = [139*(1-0.77)*(1-0.77) + 41*(0-0.77)*(0-0.77)] / 179$

= 0.177. Thus, value of T can be found as follows:

So,  $T = -0.33X\sqrt{180} / 0.177 = -25.013$ . Or,  $|T| = 25.013$

Tabulated value of T at 5% level of significance (LOS) and at the given degree of freedom is 1.96. As the calculated value (25.03) is much higher than tabulated value (1.96),

**Null hypothesis is rejected at 5% LOS.**

Thus, all buyers are not aware of the KFL brand. So, more promotional activities must be done by KFL.

**❖ Hypothesis –III (Brand Shifting)**

Chi-Square test used here. Considering brand shift to be equal for all the brands E, the average of shifts is 10.57. Now, the hypotheses are defined as follows:

H<sub>0</sub>: Brand switching is just by chance and it depends on customer decision taken randomly without any specific consideration.

H<sub>1</sub>: Brand switching depends on services and value provided by the company.

Table X: Finding the Chi-Square Value (Brand Shift)

Brands	Shift	Observed (f)	Expected (e)	Chi-Square = [(f-e)*(f-e)]/e
KSE	23	23	10.57	14.62
OK	01	14	31.71	9.89
Godrej	02	18	10.57	5.22
SKM	11	12	10.57	0.19
KFL	18	07	10.57	1.20
MBS	12		SUM	31.13
Others	07			

(Source: Computed from Survey Data on brand shift)

From Table X, Chi-Square value calculated is 31.13 which is higher than the tabulated value at 5% LOS with 5 degree of freedom of 11.507. Thus, the

**Null hypothesis is rejected at 5% LOS.**

It follows that brand switching results from service quality as well as value of service provided by companies. So companies like KFL should try to improve service quality and enhance value provided.

**Suggestions Based on the Findings**

The demand for compounded cattle feed (CCF) is registering a gradual increase. Market consolidation is happening, with a preference for CCF that too the pellet-type products, rather than the conventional ones. KFL, KSE, MILMA, OK etc. are the leading brands in Kerala that are enjoying sizeable market share. KFL, Government of Kerala owned company, has attained a good market standing since its commissioning. However, KFL has not been able to increase its sales level to further heights, particularly in southern and northern regions, as the production levels are getting saturated.

1. In order to retain the market share and to achieve a higher market share, it is essential for KFL to increase the production through expansion, merger or acquisition. Thus to overcome its inability to meet market demand in Southern and Northern regions, in addition to the ongoing expansion of the existing unit, setting up of new units would be the quite advisable. KFL can further enhance its market share by locating plants both in Northern and Southern parts of Kerala, for more effectively catering to the needs of those regions, preferably adjacent to the railway line suitable for railway siding.
2. As suggested by the test results of the first hypothesis, KFL must launch its Mash product also, to catch up with companies like KSE, and also to enhance its brand image and sales.
3. Similarly, as suggested by the tests results of the second hypothesis, KFL must initiate planned strategies for building up its brand through effective promotion and advertising; because many buyers are not aware of KFL brand.
4. Typical cattle feed manufacturers, including KFL must try to enhance the service quality and value delivered in order to improve their sales and market, as suggested by the test results of the

third hypothesis. Invariably, the the cattle feed produced should be of the high quality as the consumers are found to be quality conscious and this will ensure market consolidation.

5. A restructuring of market plan based on logistics need to be implemented. To increase the market penetration, systematic, strategically planned, aggressive schemes are to be developed. Options like creation of district-wise sole selling agents, introduction of new schemes like extra quantity, distribution of food supplements along with the cattle feed, gifts to the dealers, simple and effective brochures, advertisements, massive promotion for quality poultry feed to be used in households as supplementary feed etc. in a professional way, may be thought off.

In short, meticulously planned and carefully designed marketing strategies are vital for sustained business growth and profitability of cattle feed manufacturers in Kerala. For the public sector player viz. KFL which is already having a good reputation and brand equity, an expansion strategy to more effectively cater to Northern and Southern parts of Kerala is found to be an imperative for survival and growth, rather than an option.

### Concluding Remarks

The compounded Cattle Feed (CCF) though not a relatively new entry in the market, is gaining momentum and acceptability in the recent past. It attracted the farmer's attention because of many reasons. The live stock population in Kerala mainly consists of cows, buffaloes and goats. On the basis of the results of the survey, it can be reasonably assumed that the demand for compounded cattle feed will grow by 5 per cent on an average in the future.

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