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## THE PREFERENCE OF DAIRY FARMING BY DAIRY FARMERS IN KANYAKUMARI DISTRICT

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**ABSTRACT-** The aim of this study is to know the preference of Dairy Farming by Dairy farmers using significant test and cluster analysis. The study is conducted among 300 dairy farmers in Kanyakumari District who were randomly selected from six taluks of Kanyakumari. The Significant test is carried through t test and shows that the statement livestock and crop production together is better and has the highest score. The cluster analysis is used to find the nature of the sample respondents. The Dairy farmers were categorised into Inheritors, Initiators, Investors and Innovators. To know about the sources of information of dairy farming from the Friends and Family and Farmers Association (260), with regard to milk yield, majority got the information was gathered from Farmers Association (188). The information about the quality of milk was gathered from all but main source is farmers association. They mainly depended on the Veterinary Doctor for the information regarding breeding, feeding and diseases.

**Keywords: Dairy Farming, Preferences and Livestock**

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### I. INTRODUCTION

Livestock sector plays a major role in the economy of the State. It provides livelihood and is the mainstay of small and marginal farmers. Other sectors, such as Farm cultivation is seasonal in nature. The low cropping intensity coupled with a large number of small and marginal farmers and landless labourers, subsistence farming does not fetch adequate returns from land. Thus Animal Husbandry sector plays a vital role in providing subsidiary employment to rural folk and guaranteed household income. Dairy development offers quick returns and near stable prices throughout the year. The combination of livestock rearing and crop production enables full utilisation of farm by-products and conserves soil fertility. Kanyakumari is deficit in milk production and the increased adoption of organic farming practices requires development of this sector in the district. About 97 percent of operational holdings are of less than one hectare. Livestock production has been steadily growing faster than any other agricultural sub-sector and it is foreseen that livestock will account for more than half of total global agricultural output in economic terms by 2010. Further, to reach the growth rate of 4 percent in the agriculture sector as envisaged in the XI plan, the growth in livestock sector becomes more essential.

### KANYAKUMARI DISTRICT COOPERATIVE MILK PRODUCERS SOCIETIES (KDCMPS)

The Dairy Development Department was established in 1958 in Tamilnadu. The administrative and statutory control over all the milk cooperatives in the State was transferred to the Dairy Development Department on 1.8.1965. The Commissioner for Milk Production and Dairy Development was made as the functional Registrar under the Tamilnadu Cooperative Societies Act. The Union "The Kanyakumari District Cooperative Milk Producers Union" with the adoption of 'Anand pattern' in the State of Tamilnadu, works under the control of Tamilnadu Co-operative Milk Producers' Federation Limited, Chennai. The Kanyakumari District Cooperative Milk Producers Union Number 2946 was first registered as Nanjil Nadu Milk Supply Society in the year 25th January 1949 and started its functioning from 7th February 1950. Later it was elevated as Nanjil Nadu Cooperative Milk Supply Union and then converted to Kanyakumari District Cooperative Milk Producers Union with effect from 16th February 1982.

### PREFERENCE OF DAIRY FARMING

Dairy farming is an important way for farmers to increase their earnings and access to more nutritious food for their families. While subsistence dairy farming provides not only fresh milk and a source of basic income, value-added products, such as yogurt and cheese, provide a higher source of revenue. Because, green fodder helps the animal to produce more milk and helps the producer to reduce feeding costs. Along with nutritious foods, sufficient amount of clean and fresh water is also essential for dairy animals because dairy animals need more water than other animals. The preferences of dairy farming by the dairy farmers are many. A few reasons are given below and tested through suitable statistical tools.

*Table. 1. Reliability Statistics for the Preference of Dairy Farming*

<b>Item-Total Statistics</b>				
<b>Statements</b>	<b>Scale Mean if Item Deleted</b>	<b>Scale Variance if Item Deleted</b>	<b>Corrected Item-Total Correlation</b>	<b>Cronbach's Alpha if Item Deleted</b>
Profitable business	188.51	2836.425	.190	.821
Getting Continuous income	187.25	2794.671	.287	.817
Less investment coupled with immediate returns	183.73	2678.002	.495	.808
Good market demand	184.65	2720.343	.316	.816
Lack of knowledge on other activities	183.25	2665.660	.458	.809
Hereditary	183.57	2683.899	.378	.813
Peaceful and no tension	182.34	2639.290	.479	.808
Less risky	181.82	2623.256	.494	.807
Crop residues utilised for dairy	181.55	2617.165	.482	.808
Dairy is better than crop production and business	181.62	2619.380	.496	.807
Getting loans easily for dairy farming	181.02	2593.608	.558	.804
Milk used for domestic use	184.98	2735.147	.276	.818
Prevents migration	180.48	2581.602	.517	.805
Livestock and crop production together is better	179.36	2538.712	.646	.799
Experience of households in Milk	182.71	2657.402	.395	.812
Self Interest	185.78	2774.077	.210	.822
Availability of Infrastructure	181.90	2641.491	.351	.815
Low literacy level	181.46	2629.547	.350	.816
Self-employment	184.71	2741.118	.233	.822
To get additional income	185.73	2764.313	.247	.819
<b>Cronbach's Alpha</b>	<b>.820</b>			

<b>No of Items</b>	<b>20</b>			
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Source: Primary Survey

There are twenty statements taken to elucidate the opinion of the sample respondents regarding the preference of dairy farming as their profession. The Cronbach's Alpha test for reliability shows that the value is 0.820 which is enough for further testing. Hence all the 20 statements are taken into consideration.

*Table. 2. Test of significance for the Preference of Dairy Farming*

Statements	T	Sig. (2-tailed)	Mean	Standard Deviation	95% Confidence Interval of the Difference	
					Lower	Upper
Livestock and crop production together is better	41.77	0.00	13.61	5.65	12.97	14.25
Getting loans easily for dairy farming	37.43	0.00	11.95	5.53	11.32	12.57
Prevents migration	35.59	0.00	12.49	6.08	11.8	13.18
Dairy is better than crop production and business	34.81	0.00	11.35	5.65	10.71	11.99
Less risky	34.48	0.00	11.15	5.6	10.51	11.78
Less investment coupled with immediate returns	34.40	0.00	9.24	4.65	8.71	9.77
Crop residues utilised for dairy	33.97	0.00	11.42	5.82	10.76	12.08
Peaceful and no tension	33.68	0.00	10.63	5.47	10.01	11.25
Lack of knowledge on other activities	32.41	0.00	9.72	5.19	9.13	10.31
Experience of households in dairy	29.57	0.00	10.26	6.01	9.57	10.94
Hereditary	28.70	0.00	9.4	5.68	8.76	10.05
Low literacy level	27.83	0.00	11.51	7.16	10.69	12.32
Availability of Infrastructure	27.81	0.00	11.07	6.9	10.29	11.86
Good market demand	25.56	0.00	8.32	5.64	7.68	8.96
Getting Continuous income	23.84	0.00	5.72	4.15	5.24	6.19
Milk used for domestic use	23.65	0.00	7.99	5.85	7.32	8.65
To get additional income	22.73	0.00	7.24	5.52	6.62	7.87
Self-employment	22.34	0.00	8.26	6.41	7.54	8.99
Self Interest	21.25	0.00	7.19	5.86	6.52	7.85
Profitable business	18.54	0.00	4.46	4.17	3.99	4.94

Source: Primary Survey

The significant test is carried out with the help of t test and the result shows that the statement Livestock and crop production together is better and has the highest score of (t: 41.77, sig: 0.00) which is followed by the statements Getting loans easily for dairy farming (t: 37.43, sig: 0.00), Prevents migration (t: 35.59, sig: 0.00), Dairy is better than crop production and business (t: 34.81, sig: 0.00), Less risky (t: 34.48, sig: 0.00), Less investment coupled with immediate returns (t: 34.40, sig: 0.00), Crop residues utilised for dairy (t: 33.97, sig: 0.00), Peaceful and no tension (t: 33.68, sig: 0.00), Lack of knowledge on other activities (t: 32.41, sig: 0.00), Experience of households in dairy (t: 29.57, sig: 0.00), Hereditary (t: 28.70, sig: 0.00), Low literacy level (t: 27.83, sig: 0.00), Availability of Infrastructure (t: 27.81, sig: 0.00), Good market demand (t: 25.56, sig: 0.00), Getting Continuous income (t: 23.84, sig: 0.00), Milk used for domestic use t: 23.65, sig: 0.00), To get additional income (t: 22.73, sig: 0.00), Self-employment (t: 22.34, sig: 0.00), Self Interest (t: 21.25, sig: 0.00) and Profitable business (t: 18.54, sig: 0.00). Hence it is noted that the sample respondents prefer dairy mainly as they involve in agriculture rather than out of self interest and to earn income.

### CLUSTER ANALYSIS

Cluster Analysis is an exploratory analysis that tries to identify structures within the data. Cluster analysis is also called as segmentation analysis or taxonomy analysis. More specifically, it tries to identify homogenous groups of cases if the grouping is not previously known. Because it is exploratory, it does not make any distinction between dependent and independent variables.

*Table. 3. Cluster Analysis for the Preference of Dairy farming*

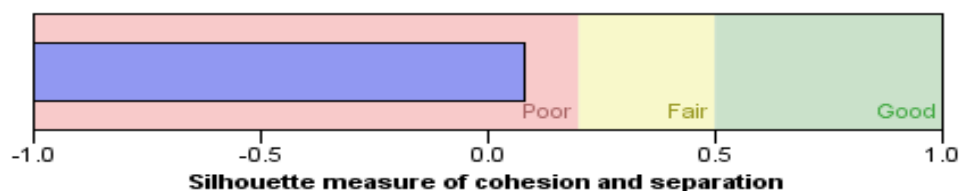
Final Cluster Centers							
Statements	Cluster				ANOVA		
	Initiators	Inheritors	Investors	Innovators	Cluster Mean Square	F	Sig.
Profitable business	1.00	6.16	5.90	2.78	349.66	24.93	.000
Getting Continuous income	1.00	7.52	4.81	5.84	326.46	23.13	.000
Less investment and immediate returns	1.00	9.98	11.16	9.38	715.53	49.01	.000
Good market demand	1.00	12.55	9.84	5.18	1466.76	84.91	.000
Lack of knowledge on other activities	1.00	8.17	14.84	10.01	1378.71	103.78	.000
Hereditary	1.00	9.74	8.84	11.64	820.64	33.89	.000
Peaceful and no tension	1.00	11.53	13.46	10.37	1050.00	53.77	.000
Less risky	1.00	13.92	11.94	10.61	1205.20	61.96	.000
Crop residues utilised for dairy	1.00	11.24	10.20	15.12	1486.36	77.46	.000
Dairy is better than crop production	1.04	14.41	8.53	13.01	1548.28	93.73	.000
Getting loans easily for dairy farming	1.00	12.26	16.01	11.75	1469.16	91.91	.000

Milk used for domestic use	1.00	13.90	4.00	6.86	2008.04	141.19	.000
Prevents migration	1.00	14.37	17.21	10.49	1964.67	112.90	.000
Dairy along with crop production is better	1.00	15.56	16.39	13.17	1742.41	119.95	.000
Experience of households in dairy	1.00	14.40	9.69	9.10	1393.09	62.35	.000
Self Interest	1.41	8.90	8.44	6.21	467.14	15.61	.000
Availability of Infrastructure	1.00	7.67	11.21	16.84	2448.13	105.42	.000
Low literacy level	1.00	6.58	15.24	16.41	2956.24	135.37	.000
Self-employment	1.26	6.24	7.11	12.78	1313.94	46.69	.000
To get additional income	1.26	4.83	5.44	12.31	1479.52	93.76	.000
<b>Number of Cases in each Cluster</b>	<b>27</b>	<b>99</b>	<b>70</b>	<b>104</b>			
<b>%</b>	<b>9</b>	<b>33</b>	<b>23</b>	<b>35</b>			

Source: Primary Survey

The cluster analysis was used to find the nature of the sample dairy farmers. The cluster result reveals that the sample dairy farmers are categorized into Initiators, Inheritors, Investors and Innovators. Out of the total respondents 27 respondents (9 percent) categorized under Initiators, 99 respondents (33 percent) categorized under Inheritors, 70 respondents (23 percent) categorized under Investors and the rest 104 respondents (35 percent) categorized under Innovators. All the statements taken for analysis are statistically significant, but individual scores are different for F and mean score. The statement profitable business has (F: 24.93, Sig: .000), Getting Continuous income (F: 23.13, Sig: .000), Less investment and immediate returns (F: 49.01, Sig: .000), Good market demand (F: 84.91, Sig: .000), Lack of knowledge on other activities (F: 103.78, Sig: .000), Hereditary (F: 33.89, Sig: .000), Peaceful and no tension (F: 53.77, Sig: .000), Less risky (F: 61.96, Sig: .000), Crop residues utilised for dairy (F: 77.46, Sig: .000), Dairy is better than crop production (F: 93.73, Sig: .000), Getting loans easily for dairy farming (F: 91.91, Sig: .000), Milk used for domestic use (F: 141.19, Sig: .000), Prevents migration (F: 112.90, Sig: .000), Dairy along with crop production is better (F: 119.95, Sig: .000), Experience of households in dairy (F: 62.35, Sig: .000), Self Interest (F: 15.61, Sig: .000), Availability of Infrastructure (F: 105.42, Sig: .000), Low literacy level (F: 135.37, Sig: .000), Self-employment (F: 46.69, Sig: .000) and To get additional income (F: 93.76, Sig: .000). The mean score is high for the statement Low literacy level (2956.24) and is low for the statement Getting Continuous income (326.46). The cluster quality is poor as it is below 0. Hence it is observed that the sample respondents chose dairy farming mainly to use the milk for domestic use and due to low literacy level and earning is not their prime motive

#### Cluster Quality



#### SOURCES OF DAIRY FARMING INFORMATION

In developed countries, dairy farms typically consist of high producing dairy cows and other species used in commercial dairy farming include goats, sheep, and camels. Many dairy farmers were brought up on dairy farming while some others inherited it from their parents and branched out on their own. In business, knowledge is power and the application of knowledge is tremendous power. Information gathering is part of

every successful activity and as such the sample respondents sources of information gathering is listed as below with regards to Milk Prices, Milk Yield, Milk Quality, Breeding, Feeding, Diseases and milk Storage.

*Table 4. Sources of Dairy Farming Information*

Sources	Prices	Yield	Quality	Breeding	Feeding	Diseases	Storage	Total	%
Friends and Family	105	20	38	27	18	-	10	218	<b>10.38</b>
Farmers Association	155	188	64	31	67	-	22	527	<b>25.10</b>
Newspapers	20	53	44	15	10	-	6	148	<b>7.05</b>
Cooperatives	-	13	22	35	34	-	5	109	<b>5.19</b>
Television	1	10	20	13	5	1	42	92	<b>4.38</b>
Milk Consumers	2	10	51	1	1	-	22	87	<b>4.14</b>
Veterinary Doctor	-	6	32	154	158	297	188	835	<b>39.76</b>
Government Institutions	17	-	27	23	7	2	5	81	<b>3.86</b>
Radio and other media	-	-	2	1	-	-	-	3	<b>0.14</b>
<b>Total</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>300</b>	<b>2100</b>	

Source: Primary Survey

Table shows that regarding milk prices, the sample respondents enquire from the Friends and Family and Farmers Association (260), with regard to milk yield, majority got the information from Farmers Association (188). To increase the quality of milk, information will be gathered from all but mainly from farmers association. For breeding, feeding and to know about the diseases, they mainly depend on the Veterinary Doctor.

Out of the sample respondents, 51 percent have the experience of less than 10 years in dairy farming, 20 percent with the experience of 10-20 years, 12 percent with the experience of 20-30 years, 13 percent with the experience of 30-40 years and 3 percent with the experience of above 40 years. Among them 75 percent have less than 5 cows, 18 percent have 5-10 cows, 5 percent have 10-15 cows and 2 percent have 15-20 cows. Majority (37 percent) have the milk yield of below 10 liters, 31 percent between 10 and 20 liters, 18 percent between 20 and 30 liters, 11 percent between 30 and 40 liters, 2 percent between 40 and 50 liters and just one percent have more than 50 liters of milk. With regard to the number of family members who involved in dairy farming, 25 percent have the support of 3 members at the maximum, 57 percent between 3-6 and 18 percent get the support of more than 6 members. While the appointment of other workers is considered 56 percent hire below 3 members, 41 percent between 3-6 and 3 percent hire more than 6 members. The expenditure on dairy varies from person to person, 41 percent of the sample respondents spend the maximum of Rs. 5000, 47 percent between Rs. 5000 and Rs. 10000 and 12 percent above Rs. 10,000. Out of the sample group, 29 percent were in a position to earn an income of Rs. 5,000 as maximum, 53 percent between Rs. 5,000 and Rs. 10,000 and 18 percent above Rs. 10,000.

## II. CONCLUSION

The dairy farming is a class of agriculture for long- term production of milk which is processed either on a farm or a dairy plant. Animals like cows, goats, sheep and camels are used for commercial dairy farming to produce a number of dairy products such as cheese, butter, ice cream, buttermilk, curd etc. Dairy farming is an important way for farmers to increase their earnings and access to more nutritious food for their families. While subsistence dairy farming provides not only fresh milk and a source of basic income, value-added products, such as yogurt and cheese, provide a higher source of revenue. One issue in the debate on dairy production is seasonal versus year-round milk production. Seasonal dairying compresses most of the management and work activities into short periods that allow little room for the management of dairy farming. Beyond regular farm practices, farmers are continuously making efforts towards sustainability. The use of renewable resources allows dairy operations to give energy back to the grid and may, in some cases, generate enough power for others to use.

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