



## **COST OF MILK PRODUCTION AND BREAK EVEN ANALYSIS OF MEMBER AND NON MEMBER OF DAIRY COOPERATIVE SOCIETY FOR MILCH ANIMALS (COW & BUFFALO) IN DISTRICT ETAWAH OF U.P.**

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### **ABSTRACT**

This study covered 150 cooperative member milk producers and 150 non-member milk producers which were post-stratified into Landless, Marginal, small, medium and large herd size categories. Breakeven point is a point where no profit no loss status achieved where  $MR = MC$ . In this study breakeven point analysis was done to estimate the minimum quantity milk to be produced to cover the total cost on all categories (members and nonmembers) of households of milch animals (Cow and buffalo). And also in this study the researchers have find out the Total cost of milk production per liter for member and non member categories. This study is helpful to find out the total cost of milk production in all categories as well as members and nonmembers of dairy cooperative society are able to find out the breakeven point of the whole business.

### **KEYWORDS**

Breakeven Point (BEP); Marginal cost; Marginal Return; Cost of Milk; Milk Production; Dairy Cooperative Society.

### **ACADEMIC DISCIPLINE AND SUB-DISCIPLINES**

Management

### **SUBJECT CLASSIFICATION**

Agriculture Management

### **TYPE (METHOD/APPROACH)**

Survey/Interview with mathematical Analysis

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## INTRODUCTION

As per an assessment made by the Planning Commission Report-2012, the domestic demand for the milk by 2020-21 is expected to be 172.20 million tons. India would have sufficient production to meet such demand. The international body on the farm sector in its latest 'Food Outlook' report also estimates global milk production in 2020 grow by 2% to 772million tones.

India's milk production rise by 4% i.e., 127.9 million tonnes in 2011-12 and per capita availability was 291 gms/day while in 2010-11 milk production was 121.8 million tones and per capita availability was 281 gms/day. In domestic market demand of milk and dairy products is increasing very high but the production processing facilities of milk in India is not up to the mark.

The main milk producing states in India in order of output are Uttar Pradesh, M.P., Rajasthan, Gujarat and Haryana, which supply more than 80 percent of the total milk production of the country but on the basis of per capita milk consumption Punjab ranks first followed by Haryana, Rajasthan, Gujarat, M.P., Uttar Pradesh, Andhra Pradesh, Tamilnadu, Maharashtra and Bihar respectively though our country has the largest population of milch animals i.e. 19.1 crore cattle including 6.9 crore buffaloes (1982 ansus) but the milk production is very low being 157 kg per animal as compared to 7154 kg in USA, 3950 kg in UK and 3902 kg in Denmark.

Cost plays an important role in portraying economic viability of a dairy enterprise. It is a critical economic indicator for milk producers, consumers and policy makers in order to provide an effective linkage between the milk producers and consumers for fixing the price of milk rationally. Generally, a milk producer can increase his dairy income in two ways either by increasing the milk production or by reducing cost of milk production. Cost of milk production often becomes a policy issue, when milk producers complain that the price of milk they are getting does not the cover cost of milk production. Keeping the above background in mind, it is necessary to study the comparative analysis of per liter cost of milk production as well as break even analysis of both group of member and non members of dairy cooperative society for all the category(landless, marginal, small, medium and large) in case of milch Cow and buffalo.

"Etawah" in Uttar Pradesh is famous for its Bhadawari breeds of buffalo and Jamunapari breed of goats. The said breed of buffalo were also known for consuming less fodder relative to production of high fat content milk. However, all the milch animals such as buffalo, cow and goats are grazed in the ravines and the forest area between Jamuna and Chambal rivers of Etawah district of U.P. The number of milch livestock of Etawah district during 2012 were reported as total number of female adult cows 1,10,825, total number of adult females buffaloes 92065 and total female adult goats were 2,41,61.

The trend shows that very soon Etawah district will get an important place in the future, map of "milk Grid" of India by producing on an average of 2.801 lakh liters per day during 1986-87 which was increased to 3.83 lakh litres per day during 2006-07 and now 2011-12 it will be increasing 5.20 lakh litres per day. There were 3020 cooperative milk producer- societies during 1986-87, which has increased to 4272 during 20011-12. Cooperative milk societies of Etawah produced 0.22 lacs liters/day in 1986-87 while they produced 2.53 lacs liters/day in 2006-07. Recently the latest production of milk in 2011 -12 was 3.86 lacs liters/day.

### Review of Literature

Attempts have been made to review briefly the specific and relevant literature, which has direct or indirect bearing on the objectives of the present study. Accordingly, relevant literature has been reviewed and presented in chronological order as follows.

**Rao and Singh (1995)** while studying the impact of operation flood programme on the economics of the buffalo milk production in Guntur district of Andhra Pradesh found that the gross cost of milk production was Rs.2,982.05, Rs.3,274.05, Rs.2,744.80, Rs.2,682.75 per annum on landless, small, medium and large categories in the case of the beneficiary households as against Rs.2,544.05, Rs.2,252.05, Rs.2,113.35 and Rs.2,314.10 per annum on landless, small, medium and large categories for the non-member households. The average cost of milk production was Rs. 2.80 per litre on the beneficiary households as compared to Rs.3.75 per litre on the non-beneficiary households.

**Shiyani and Singh (1995)** conducted a study on economics of milk production for the member and non-member milk producers in the Saurashtra region of Gujarat and observed that the net cost of maintaining a buffalo was Rs.36.30, Rs.40.15, Rs.24.35 per day in rainy, winter and summer seasons in the case of the member respondents as against Rs.32.49, Rs.37.97 and Rs.26.10 per day for the non-member respondents. The corresponding figures for the milch cow were Rs.17.52, Rs.19.27and Rs.16.93 in the case of the member respondents as against Rs.16.13, Rs.20.14 and Rs.16.46 per day in the case of non-member respondents. The season wise analysis indicated that the highest cost of milk production per day was found in winter season both in the case of members and non-members. The main reasons for the higher cost during winter season were better feeding and management practices adopted by the milk producers to obtain more milk yield. Further, it was observed that feeds and fodder constituted about 70 per cent of the total maintenance cost of a milch buffalo and nearly two-thirds of the total cost of cow milk production. On an average, per litre

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cost of buffalo milk production was Rs.5.56 and Rs.6.47 for members and non-members, respectively. Corresponding figures for milch cows were Rs.4.12 and Rs.4.63.

**Shukla et al. (1995)** studied the impact of Operation Flood Programme on the economy of rural milk producers in Kanpur district – Dehat (UP) and found that the overall average cost per milch animal and per household per annum was found to be Rs.7,588 and Rs.18,286, respectively in the programme area as compared to Rs.6,854 and Rs.11,584 in the non-programme area. The average cost of milk production per litre was found to be Rs.3.59 and Rs.3.67 in programme and non-programme areas, respectively. The overall average milk production per day per household was higher at 8.78 litres in the programme area as compared to 6.04 litres in the non-programme area. The average milk consumption per day per household was 2.23 litres and 1.92 litres in the programme area and non-programme area, respectively.

**Shah et al. (1996)** conducted a study on milk production, marketed surplus and marketing of milk in organized and unorganized milk marketing sector of Bullandshahar district. The results of the study revealed that the level of milk production was higher in villages covered by DUSS than those not covered under it NDUSS. On an average, the annual milk production per household was 4504 litres in DUSS and 3964 litres in NDUSS area. The milk production increased with the increase in herd size category in both areas. Milk production in DUSS area was 2378, 5225 and 8301 litres for small, medium and large herd size categories, respectively, whereas it was 2045, 4079 and 8094 litres for small, medium and large herd size categories in NDUSS area, respectively.

**Koshta, A.K. & Chandrakar, R. (1999)**, explored the difference between members and non member of milk co-operative societies with regard to distribution pattern of dairy animals productivity costs and returns of milk production and disposal pattern of fluid milk. Non member were observed to have higher operational costs per cow per day and lower cow productivity than member of milk co-operative societies. Returns are higher for non member as they obtain higher price than members. Cost benefit ratio is higher for buffalos than cow due to low operational cost of milk production.

**Pranajit Bhowmilk, Smita Sirohi and Dhaka. J.P. (2006)** analysed that the net cost of milk production from crossbred cows is nearly half of the same from local cow, thus in the economic interest of the farmers, strategies aimed at crossing nondescript cattle with superior germplasm should be intensified by the concerned state department. The contribution of technological component in higher milk production for cross breed cows is about 68 percent, thus, propagation of crossbreeding in the region has the potential to ensure reasonable returns of investment. The annual value of inputs saved in one district alone, covers 87 percent of the expenditure on dairy development made by the state in four years. Therefore, from the planners' perspective also, it is a winsome proposition.

**Singh, K. M. et al., (2012)**, Dairy farming has emerged as an important source of livelihood, particularly on small holder households. The efficient management of dairy cooperative system has facilitated milk production and marketing in Bihar. An attempt was made to analyze the milk contribution to dairy co-operative, producers' share in consumer rupee and cost of milk production in Bihar. Per litre cost of milk production varied from Rs. 10.12 for crossbred cows to 13.90 and Rs. 13.57 for buffalo and local cows, respectively, which are higher than price paid by co-operatives for standard milk (fat-6% and SNF-21%). Herd size and type of milch animal along with parity had significant influence on cost of milk production. Production cost is likely to decrease with increase in size of unit and in production of crossbred cows in herd. More than two-third of milk produced by co-operative members is marketed through dairy co-operatives in Bihar. The producers' share in consumer rupee is about 58% for all categories of herd since all are marketing their milk through co-operatives only. Dairy farmers should also be advised for meeting the requirements of feed by providing desired nutrients through feeding of green fodder which not only reduces intake of concentrates but also helps in reducing the cost of production. Treatment of dry fodder with urea helps in improving its nutritive value, and such technologies may be popularized to make feeding balanced and cost effective.

**Meena G. L. & D. K. Jain (2012)**, study covered 75 cooperative member milk producers and 75 non-member milk producers which were post-stratified into small, medium and large herd size categories. Per day net maintenance cost was found to be higher for member group than that of non-member group. It was found to be higher in case of buffalo than that of cow and also observed more

in the summer season. Per litre cost of buffalo and cow milk production was observed to be higher for the non-member as compared to member group. Per litre cost of buffalo milk production decreased with increase in herd size categories across different seasons while same trend was not observed in case of cow milk production. Further, it was found higher in summer season. Daily net return was found relatively higher in member group as compared to non-member group and also found higher in winter season. Overall average daily milk production, consumption and marketed surplus of milk were found higher on the member group as compared to non-member group. The corresponding figures were recorded highest in the winter season in both the member and non-member group.

**Tanwar P. S. et.al.(2012)**, study was conducted to estimate the economics of milk production among different categories of members and non-members families of dairy co-operatives based on personal interview method. An analysis of data from 240 families (120 household under each category) revealed that overall gross maintenance cost per animal per year was higher (Rs. 21532.81) in members families in comparison to non-members families (Rs. 19768.30). Maximum gross maintenance cost was on small farmers and minimum was on landless farmers in both the categories. The share of variable and fixed cost in total maintenance cost was (82.36% and 17.64%) in members families and almost same in case of non-members families (82.95% and 17.05%). The cost of feed, fodder and concentrate was main component in gross maintenance cost in both the categories. The overall cost per liter of milk was lower (Rs.10.47) in members families than non-members families (Rs.11.29). The size of land holding showed negative relationship with cost of milk production. Overall net return per animal per year was higher in members households in comparison to non-members households.



Overall net profit per liter of milk was Rs. 4.73 for members households, while it was Rs. 2.01 on non-members households. The overall average income per rupee of investment was higher (Rs.1.45) in members families than non-members families (Rs. 1.18).

### Research Methodology

District Etawah milk producers' cooperative union was purposively selected from state of Uttar Pradesh. Exhaustive lists of all the milk producers' cooperative societies in Etawah district milk producer's cooperative union were prepared. Researchers have selected randomly 150 non member of dairy cooperative society & 150 members of dairy cooperative society from 10 Villages of 2 blocks selected in district Etawah. All the milk producing households members and non members were classified into five categories, viz., Land less, Marginal, Small, Medium and Large farmers on the basis of land holding capability. Thus in all, 300 households were interviewed during the year 2008-09. The primary data were collected with help of well structured pre-tested schedule by personal enquiry method. The data collected were subjected to tabular analysis in order to study the comparative economics of milk production. The net maintenance cost per milch animal per day was divided by the respective average milk yield per milch animal per lactation to arrive at per litre cost of milk production. Break –even analysis was employed to work our break even output for milch animals (cow and buffalo) on different categories of households (MR = MC) i.e., marginal cost is equal to marginal revenue. The total milk produced by the all milch animals in the household was reckoned as total milk production.

### COST OF MILK PRODUCTION ANALYSIS

In table no.1 total cost of milk production per lactation on different category of milch cow, the total overall average cost Rs. 28800 in dairy cooperative member category and in non member category overall average total cost per lactation was Rs 27900.

In dairy cooperative members category the total cost of per lactation was maximum Rs. 30000 in large category and minimum 24600 in land less category in comparison to non member category the total maximum investment invested by large category i.e. Rs 29700 and minimum was by landless i.e. Rs. 24900 per lactation per cow respectively.

In table No. 1 in the case of milch cow the cost of milk production per liter of milk, the total overall average cost of milk production per liter of milk Rs. 11.52 in dairy cooperative member category and in non member category overall average cost of milk production per liter of milk were Rs. 12.14.

In dairy cooperative members category the cost of milk production per liter of milk was maximum Rs. 11.86 in medium category and minimum Rs. 8.78 in land less category in comparison to non member category the maximum cost of milk production per liter of milk by medium category i.e. Rs 12.00 and minimum was marginal category i.e. Rs. 11.25 respectively.

**Cost of milk production (per litre) on different categories of milch animals (cow) per lactation**

**TABLE - 1**

Particulars of BEP	Non Member					Over all Average	Member					Over all Average
	Landless	Marginal	Small	Medium	Large		Landless	Marginal	Small	Medium	Large	
Total cost (Rs.)	24900	27000	27300	28800	29700	27900	24600	27000	28200	29700	30000	28800
Total milk production (litre)	2199	2400	2298	2400	2499	2298	2799	2700	2499	2499	2799	2499
Cost of milk production/ litre (Rs.)	11.32	11.25	11.87	12.00	11.88	12.14	8.78	10.00	11.28	11.88	10.71	11.52

**Cost of Milk Production (per litre) on different Categories of Milch Buffalo per Lactation**

TABLE - 2

Particulars of BEP	Non Member					Overall Average	Member					Overall Average
	Landless	Marginal	Small	Medium	Large		Landless	Marginal	Small	Medium	Large	
Total cost (Rs.)	28200	30600	30300	32100	30900	30300	30000	32700	32400	33300	33600	32100
Total milk production (litre)	2700	2400	2100	2400	2700	2400	2400	2700	2700	2700	2700	2400
Cost of milk production/litre (Rs.)	10.44	12.75	14.42	13.37	11.44	12.62	12.50	12.11	12.00	12.33	12.44	12.27

**Cost of Milk Production of milch Buffalo**

In table No. 2 total cost of milk production per lactation on different category of milch Buffalo, if we see the table in particulars of BEP the total overall average cost Rs. 32100 in dairy cooperative member category and in non member category overall average total cost per lactation was Rs 30300.

In dairy cooperative members category the total cost of per lactation was maximum Rs. 33600 in large category and minimum Rs. 30000 in land less category in comparison to non member category the maximum investment invested by large category i.e. Rs 30900 and minimum was by landless i.e. Rs. 28200 per lactation per buffalo respectively.

In table No. 2 in the case of cost of milk production per liter of milk for milch buffalo, the total overall average cost per liter of milk Rs. 12.27 in dairy cooperative member category and in non member category were Rs. 12.62.

In dairy cooperative members category the cost of milk production per liter of milk was maximum Rs. 12.50 in landless category and minimum Rs. 12.00 in small category in comparison to non member category the maximum cost of milk production per liter of milk by small category i.e. Rs 14.42 and minimum was landless category i.e. Rs. 10.44 respectively.

**Break-Even Point Analysis of Milch Cow**

The break-even point analysis was done to estimate the minimum quantity milk to be produced to cover the total cost on all the categories of households of milch cow are given in table no.3

In break Even Point for milch cow table shows that the overall average total cost per animal per lactation for member of dairy cooperative society was Rs. 28800 while for non members, it was Rs. 27900. In members category the maximum total cost per animal per lactation was Rs 30000 in large category and minimum Rs 24600 in land less category. In other side (non member) category maximum value of total cost per milch cow per lactation was Rs 29100 ( large ) and minimum value was Rs.24900 in land less category.



**Break Even Point (BEP) for Milch Cow on Different Categories**

**TABLE – 3**

Particulars	Non Member					Overall Average	Member					Overall Average
	Landless	Marginal	Small	Medium	Large		Landless	Marginal	Small	Medium	Large	
Milk yield per Animal/lactation (litre)	3240	3000	3000	3000	3300	3000	3600	3000	3300	3300	3600	3300
Fixed cost per animal/lactation (Rs.)	900	900	900	900	900	900	900	900	900	900	900	900
Variable cost per animal/lactation (Rs.)	24000	26100	26400	27900	28200	27000	23700	26100	27300	28800	29100	27900
<b>Total cost per animal (Rs.)</b>	<b>24900</b>	<b>27000</b>	<b>27300</b>	<b>28800</b>	<b>29100</b>	<b>27900</b>	<b>24600</b>	<b>27000</b>	<b>28200</b>	<b>29700</b>	<b>30000</b>	<b>28800</b>
Variable cost per litre of milk (Rs.)	7.86	8.96	8.80	9.30	8.54	7.50	6.58	8.70	8.27	8.72	8.08	8.45
Price/ litre of milk (Rs.)	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
Break-even point (litre)	98.46	111.94	109.75	116.88	106.38	94.73	86.37	108.43	103.09	108.69	100.89	105.26
<b>Percentage of BEP to total out put</b>	<b>3.03</b>	<b>3.73</b>	<b>3.65</b>	<b>3.89</b>	<b>3.22</b>	<b>3.15</b>	<b>2.39</b>	<b>3.61</b>	<b>3.12</b>	<b>3.29</b>	<b>2.80</b>	<b>3.18</b>

The overall average variable cost per liter of milk for member of dairy cooperative society was Rs. 8.45 while for non members, it was Rs. 7.50. In members category the maximum variable cost per liter of milk was Rs 8.72 in medium category and minimum Rs 6.58 in land less category. In other side (non member) category maximum value of variable cost per liter of milk was Rs 9.30 (medium) and minimum value was Rs.7.86 in land less category.

The dairy cooperative society members have achieved their overall average breakeven point at 105.26 liter while the non members of dairy cooperative society have achieved their overall average breakeven point at 94.73 liter. Thus, it is clear that the milk yield per milch cow per lactation was higher than its break even output to cover the cost in both category of member and non member of dairy cooperative society.

**Break-Even Point Analysis for Milch Buffalo**

The Break-Even Point analysis was done to estimate the minimum quantity milk to be produced to cover the total cost on all the categories of households of buffalo are given in table no.4.

In break-even point for milch buffalo table shows that the overall average total cost per animal per lactation for member of dairy cooperative society was Rs. 32100 while for non members, it was Rs. 30300. In members category the maximum total cost per animal per lactation was Rs 336000 in large category and minimum Rs 30000 in land less category. In other side (non member) category maximum value of total cost per milch cow per lactation was Rs 32100 (medium) and minimum value was 28200 in land less category.

The overall average variable cost per liter of milk for member of dairy cooperative society was Rs. 11.70 while for non members, it was Rs. 11.86. In members category the maximum variable cost per liter of milk was Rs 11.88 in large category and minimum Rs 11.44 in small category. In other side (non member) category maximum value of variable cost per liter of milk was Rs 13.71 (small) and minimum value was Rs.9.88 in land less category.



The overall average Break Even point per liter of milk for member of dairy cooperative society was 207.45 liter while for non members, it was 257.17 liter. In members category the maximum BEP per liter of milk was 210.67 liter in land less category and minimum 198.41 liter in marginal category. In other side (non member) category maximum value of BEP per liter of milk was 349.65 liter (small) and minimum value was 284.72 liter in land less category. Thus, it is clear that the milk yield per milch buffalo per lactation was higher than its break even output to cover the cost in both category of member and non member of dairy cooperative society.

**Break Even Point (BEP) for Milch Buffalo on Different Categories**

**TABLE - 4**

Particulars	Non Member					Overall Average	Member					Overall Average
	Landless	Marginal	Small	Medium	Large		Landless	Marginal	Small	Medium	Large	
Milk yield per animal (litre)	2700	2400	2100	2400	2700	2400	2400	2700	2700	2700	2700	2400
Fixed cost per animal (Rs.)*	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Variable cost per animal (Rs.)	26700	29100	28800	30600	29400	28800	28500	31200	30900	31800	32100	30600
<b>Total cost per animal (Rs.)</b>	<b>28200</b>	<b>30600</b>	<b>30300</b>	<b>32100</b>	<b>30900</b>	<b>30300</b>	<b>30000</b>	<b>32700</b>	<b>32400</b>	<b>33300</b>	<b>33600</b>	<b>32100</b>
Variable cost per litre of milk (Rs.)	9.88	12.12	13.71	12.75	10.88	11.86	11.87	11.55	11.44	11.77	11.88	11.70
Price litre of milk (Rs.)	18.00	18.00	18.00	18.00	18.00	18.00	19.00	19.00	19.00	19.00	19.00	19.00
Break-even point (litre)	184.72	255.10	349.65	285.71	210.67	257.17	210.37	210.34	198.41	207.46	210.67	207.45
<b>Percentage of BEP to total output</b>	<b>6.84</b>	<b>10.62</b>	<b>16.65</b>	<b>11.90</b>	<b>7.80</b>	<b>10.00</b>	<b>8.76</b>	<b>7.79</b>	<b>7.34</b>	<b>7.68</b>	<b>7.80</b>	<b>7.87</b>

\*(Fixed cost = Housing expenditure + Depreciation on milch cow + Depreciation on machinery + Interest on animal value)

### CONCLUSION

At last researcher find out through research that cost of milk production per liter of cow and buffalo per lactation was lower in member families than non-member families. This reflect that the members of dairy cooperative societies not only kept superior breed of cow and buffaloes but also followed better feeding and management practices than their counterpart non-member families, which in turn, enhance their profit by way of higher productivity of buffaloes. In BEP analysis, member of dairy cooperatives achieved Break Event Point earlier while non member reached on that level after some more milk production in buffalo category. Finally, it is suggested that non-members should take the membership of dairy



cooperatives, so that economic status of the milk producers can be improved. After joining dairy cooperatives non members will be entitled to get better feeding management practices as well as credit facilities on low interest rate.

## REFERENCES

- [1] Badal, P.S. and Dhaka, J.P. 1998. An Analysis of Feeding Pattern and Cost of Milk Production in Gopalganj District of Bihar. *Indian J. Dairy Sci.* 51(2):121-126.
- [2] Bhardwaj, A., Dixit, V.B. and Sethi, R.K. 2006. Economics of Buffalo Milk Production in Hisar District of Haryana State. *Indian J. Dairy Sci.* 59(5):322-327.
- [3] G. L. Meena., Jain, D. K. 2012. Economics of Milk Production in Alwar District (Rajasthan): A Comparative Analysis, *International Journal of Scientific and Research Publications*, Volume 2, Issue 8.
- [4.] Singh, Krishna M. *et.al.* (2012), "An Economic Analysis of Milk Production in Bihar" *Indian Journal of Animal Sciences*, 82(10):1233-1237, October 2012
- [5] Tanwar P. S., Yogendra Kumar, Sankhala Gopal. 2012. Economics of Milk Production Among Member and Non-Member Families of Dairy Cooperatives in Jaipur (Rajasthan), *Indian J. Dairy Sci.* 65(5).
- [6] Rao, B. D. & Singh C.B., "Impact of operation flood program on the economics of buffalo milk production in Guntur Dist. Of AP" *Indian dairyman*, 1995, 18(4) ; 47 -50.
- [7] Sah, D, Jain D.K. & Sharma KNS, Impact of Dairy cooperative on marketing pattern of milk in Bullandshahar, UP, *Indian dairyman*, 1996, 48(6) ; 37 -41.

## Author' biography with Photo



Ashish Chandra is currently working at Amity Business School, Amity University, U.P., Lucknow Campus. He has also served at Advanta India Ltd. A hybrid seed marketing company.

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