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## **Economic Empowerment of Rural Agripreneurs from Selected Agri-enterprises in Rajasthan**

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### **ABSTRACT**

*The present research work was undertaken with the main objective to find out the income generation from selected agrienterprises by the rural youth. As income is the most crucial parameter in enterprise by which any venture can be termed as success or failure. If individual is not obtaining the desired returns from the inputs, then the efforts are futile and individual shift into other activity. Youth are the most dynamic and versatile segment of the population. They easily shift into new enterprise if they are unable to get lucrative perks from the earlier one. So, there is a need to collaborate agriculture and entrepreneurship together by which rural youth get the chance to earn the money and be self-reliant. Therefore, an effort was made to study the income generation and profit earned by the respondents from different agrienterprises. Samples were selected randomly from the districts of Rajasthan state. The study was conducted in randomly selected districts of Rajasthan state. From the different agrienterprises prevailing in the districts, six agrienterprises were selected which consists maximum number of rural youths namely dairy, poultry, vegetable cultivation, rose processing, rose cultivation and goatry enterprise. The research findings revealed that the respondents earned annual net profit of Rs. 4,15,840.70/- from dairy, Rs. 3,56,665.00/- from poultry, Rs. 2,83,370.70/- from rose processing, 1,89,327.60/- from vegetable cultivation, Rs. 1,13,213.50/- from goatry and Rs. 66,506.25/- from rose cultivation.*

**Key words :** *Economic; Empowerment; Income; Agri-preneurs; Agri-enterprises; Enterprises.*

**A**grienterprises is the economic and sustainable collaboration of agriculture and entrepreneurship, which provide an opportunity for someone to earn the great amount of profit by the inclusion of latest technology and advancement in the field of agriculture and ready to take any sort of risk. Agripreneurs is the one who transform the agricultural stuffs, such as vegetables, fruit, dairy, meat, fish and grains into the commercial products by utilizing various innovative models and sustainable production methods. Rural youth act as bacon that plays an important role in agriculture and other allied activities. Since youth are recognized as effective “change agents” they can help in the process of dissemination and adoption of modern techniques and methods of agriculture and can take active part in the removal of resistance to innovations among rural people. The growing rate of unemployment and poverty in rural

areas and slow growth of agriculture, there is a need of entrepreneurship in agriculture for more productivity and profitability. Some researchers may reveal that income earned from different vegetables were Rs. 41,117 from brinjal, cluster bean (Rs. 39,566), snap melon kachari (Rs. 36,158), Indian aloe (Rs. 33,026) and bottle gourd (Rs. 26,162) per hectare on their fields. Further study also revealed that the net income/hectare was highest in pea (Rs. 47,380) and cauliflower cultivation (Rs. 43,288) followed by cabbage (Rs. 40,209), carrot (Rs. 38,336) and spinach (Rs. 33,302), Meena et al. (2009). Gour et al. (2015) revealed that majority of the respondents earned annual income between Rs. 8,600-23,373 from improved animal husbandry practices.

Animal related enterprises not only help in earning money but also fulfill the nutritional intake of an individual recommended by RDA. According to

*FAOSTAT (2020)* India stood at the 1st place in dairying across the world. Important subsector of agriculture is livestock sector which plays an important role in the development of economy. Dairy enterprise acts as a boon which not only provides income but also boosts dietary habits of the family and provides employment to a large number of rural poor. The need of today is a sustainable and financially viable dairy farming, which will generate income and self-employment through entrepreneurship.

India is the second largest producer of vegetables in the world reported by National Horticulture Board (2015-16). In the last two decades there is a drastic change in the structure and operation of poultry sector. From only backyard activity, poultry sector has been converted into commercialized agro based industry. It is one of the fastest growing segments of the agricultural sector in India with around 8 per cent/annum growth rate. According to *Livestock Production Statistics of India (2019)*, India holds 6<sup>th</sup> position in poultry meat production. This industry is most promising and providing employment to the number of people. Apart from these, poultry meat also provides high quality of protein, minerals and vitamins for body building. Large numbers of people are engaged in poultry enterprise due to quick growth, high feed conversion efficiency, faster return from the investment and high demand of meat.

In modern time rose flowers attain the greater commercial value and their demand increases in the national or international market significantly. Now it has been used for making numerous processed by-products like rose water, itra, sharbat, gulkand, face pack, rose oil, etc. For the manufacturing of these processed products, rose is a basic raw material. In the Rajasthan state, unique species of rose flower is cultivated by the people residing in Rajsamand district. The name of the species is "Chetri gulaab" which mainly blooms in the month of March-April (Chaitra-Hindu month) is best known for its crimson and pink roses. This variety blooms only once in a year that makes it quite expensive than the regular roses.

The present study was conducted at the Rajasthan state which has highest goat population in India as reported by *Livestock Census of Rajasthan (2019)*. Goat farming is very ancient but with the past few years it is becoming very popular among the entrepreneurs. Goats serve the dual purpose of meat and milk production which has high demand in the market. Due to high

demand in the market, entrepreneurs attract towards this profitable enterprise and earn the good economic returns. Goatry enterprise becomes commercially viable and sustainable enterprise which provides employment, nutritional security and prosperity to millions of the people in the country. The research paper was formulated with the following objectives:

- i. To find out the income earned by the rural youth from different agrienterprises.
- ii. To find out the significance in the mean income of the selected agrienterprises.

## METHODOLOGY

The study was conducted randomly in selected districts of Rajasthan state. From the different agrienterprises prevailing in the districts, three agrienterprises were selected which consists maximum number of rural youths namely dairy, vegetable cultivation, rose processing, rose cultivation, poultry and goatry enterprise. The sample of 216 rural youth was selected for the investigation to find out the income earned from selected agrienterprises. Interview schedule was used for data collection and F test were used for the analysis of data.

*Analysis of Variance (F Test)*: F Test was used to see the significant difference within beneficiaries of different agrienterprises by using the formula:

$$F = \frac{A}{B} + \frac{\text{Mean sum of square 'betweengroups'}}{\text{Mean sum of square 'within groups'}}$$

*Critical Difference (CD)*: When F-Value was significant it was further tested with CD to see the difference between the selected groups.

$$SEd = \sqrt{MSE \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}$$

CD= SEd (between groups) × t

SEd= standard error of difference between two treatments

n1= sample size of I treatment

n2= sample size of 2 treatment

## RESULTS AND DISCUSSION

An average herd size consisted of 8 buffaloes having average milk yield of 72.73 lit per day with an average lactation period of 267.92 day (Table 1). The respondents reported that expenditure incurred in dairy enterprise includes cost of feed and fodder, vaccination, artificial insemination, care and maintenance of pregnant mother and new born and proper arrangement of dwelling for the animals with an

average expenditure of Rs. 4,79,809.5/- with average income of Rs. 8,95,650.2/- annually. It can be clearly seen from the table that average net profit earned by the respondents from dairy enterprise was Rs. 4,15,840.7/- annually.

It can be seen from Table 2 that the average number of chicks was 4675 annually. The purchasing cost/chick was Rs. 22/- with the total buying cost of Rs. 1,02,850/-. The net annual expenditure incurred in the poultry enterprise i.e. cost of feed and medicines, insurance of chicks, arrangement of sheds and equipment's including the buying cost was Rs. 2,66,819.61/-. The mortality incidence in poultry enterprise is quite high and the findings of the study revealed that the average mortality of chicks was 222 chicks annually. The reasons for the mortality as reported by the respondents were metabolic disorder which is high in between 2 to 5 weeks of age, inflammation in the heart wall, bird flu, avian influenza and climate change. Regarding the selling of the chickens, the respondents reported that they sold the chickens at Rs. 140/chicken with the annual average income of Rs. 6,23,420/-. Therefore, the annual average net profit earned by the respondents from the poultry enterprise was Rs. 3,56,665/-.

Data in the Table 3 depict that the respondents had an average herd size of 10 doe with an average milk yield of 21.55 lit per day. The average lactation period of goats was 229 days with an average milk production of 4876.65 (lit) annually. During discussion respondents reported that they sold the milk at 25 Rs/lit in the market. The average annual expenditure incurred in goatry enterprise including cost of feed and fodder, artificial insemination, vaccination, care and maintenance of pregnant mother and newly born baby and arrangement of sheds was Rs. 32,702.75/- with the annual income of Rs. 1,21,916.25/-. It can be clearly seen from the table that by selling the milk of goat respondents earned total net profit of Rs. 89,213.5/- annually.

Data in the Table 4 reveal that the average number of kids owned by the respondents was 8. The kids were sold at the age of 3 to 4 months when they achieve 25 to 30 kg of weight. The selling price/kid was Rs. 4000/-. Respondents reported the total expenditure in the enterprise was Rs. 8,000/- annually with the net income of Rs. 32,000/- annually. It can be clearly seen from the table that the average net profit earned by the respondents by selling the kids was Rs. 24,000/-. At last, it can be concluded that through goatry enterprise,

**Table 1. Income generation from dairy enterprise (N=42)**

Average herd size (buffalo)	8
Average milk yield/day (lt)	72.73
Average lactation period (days)	267.92
Annual average milk production (lt)	19,309.52
Average selling price (Rs/lt)	46.07
Annual average income (Rs.)	8,95,650.2
Annual average expenditure (Rs.)	4,79,809.5
Annual average net profit (Rs.)	4,15,840.7/-

**Table 2. Income generation from poultry enterprise (N=26)**

Average no. of chicks/annum	4,675
Buying cost/chick Rs.	22
Annual buying cost (Rs.)	1,02,850
Annual average mortality (no. of chicks)	222
No. of chicken sold/annum	4,453
Selling cost/chicken (Rs.)	140
Annual average income (Rs.)	6,23,420
Annual average expenditure (Rs.)	2,66,819.61
Annual average net profit (Rs.)	3,56,665/-

**Table 3. Income generation from goatry enterprise by selling the milk of doe (N=20)**

Average herd size	10
Average milk yield/day (lit)	21.55
Annual average lactation (days)	226.65
Annual average milk production (lit)	4876.65
Average selling price (Rs/lt)	25
Annual average income (Rs)	1,21,916.25
Annual average expenditure (Rs)	32,702.75
Annual average net profit (Rs)	89,213.5/-

**Table 4. Income generation from goatry enterprise by selling of the kids (N=20)**

No. of kids (annually)	8
Selling cost/ kid (Rs)	4,000
Annual average income (Rs)	32,000
Annual average expenditure (Rs)	8,000
Annual average net profit (Rs)	24,000/-
Total profit from goatry enterprise	1,13,213.5/-

the total net profit earned by 20 respondents collectively by selling milk and kids was Rs 1,13,213.5/- annually. Based on the findings it can be concluded that dairy enterprise stood at I rank having the highest net profit of Rs. 4,15,840.70/-, followed by poultry of Rs. 3,56,665.00/- and goatry of Rs. 1,13,213.50/- annually. Findings are in the line with the *Dave (2019)* that respondents earned good amount of income from the

agro-based enterprises. Respondents earned annual income from goatry was Rs. 3,11,233/- and by poultry production Rs. 7,52,200/-.

*Vegetable cultivation* : The vegetable cultivation as an enterprise was taken up by 38 respondents (Table 5). The major vegetables grown were tomato, potato, chili and cabbage. However, respondents were growing vegetables in combinations as tomato+chili+cabbage+potato by 11 respondents; followed tomato+chili by 7 respondents; cabbage+potato by 5; tomato+cabbage+chili by 3; cabbage+potato+chili by 3; cabbage+potato+tomato by 2; tomato+cabbage+potato by 2; tomato by 2; tomato+potato by 1 and only potato by 1 respondent.

Data in the Table 5 show that the respondents had

Average land (acres)	2.53
Annual average production (kg)	27,052.63
Annual average income (Rs.)	2,60,710.52
Annual average expenditure (Rs.)	71,382.89
Annual average net profit (Rs.)	1,89,327.63/-

an average land holding of 2.53 acres. The average production of the vegetables was 27,052.63 kg annually. The annual expenditure incurred on vegetable cultivation like cost of seed, seed treatment, land preparation, ploughing cost, transplantation cost, cost of fertilizers and manures, labour cost, machinery cost, transportation cost and miscellaneous charges was Rs. 71,382.89/- with annual income of Rs. 2,60,710.52/-. Hence, from the table it can be concluded that average

**Table 6. Income generation from rose cultivation enterprise (N=40)**

Average land holding (acres)	1.606
Annual average production (kg)	2045.625
Selling cost of flower/kg (Rs)	90
Annual average income (Rs)	1,84,106.25
Annual average expenditure (Rs)	1,17,600
Annual average net profit (Rs)	66,506.25/-

net profit earned by the vegetable growers was Rs. 1,89,327.63/- annually.

*Rose cultivation* : It can be seen in Table 6 that 40 rural youth opted rose cultivation as an enterprise with an average land holding of 1.606 acres. The average production of rose was 2,045.625 kg annually which was sold by the respondents in the form of cut loose roses at Rs. 90/kg. The annual expenditure incurred in rose cultivation i.e. land preparation, cost of rose plantlets, irrigation, fertilizers, mulching, pruning of roses and cost of labour was Rs. 1,17,600/- with annual income of Rs. 1,84,106.25/-. It can be concluded from the table that the average net profit earned by the respondents from rose cultivation enterprise was Rs. 66,506.25/-.

*Rose processing* : Data in Table 7 reveal that respondents prepared bottles of itra in two sizes i.e. 10 gm and 5 gm. The annual average production of itra was 110 bottles of 10 gm with the selling price of Rs. 300/bottle and 120 bottles of 5 gm at the rate of Rs. 150/bottle.

The average expenditure incurred in its preparation was Rs. 20,905/- annually with the net

**Table 7. Income generation from rose processing enterprise (N=50)**

Products	Average quantity produced (Bottles)	Average selling price of the products (Rs/bottle)	Average income (Rs)	Total income (Rs)	Annual average expenditure (Rs)	Annual average profit (Rs)
Itra	110 (10 gm)	300	33,300	51,000	20,905	30,095
	120 (5 gm)	150	18,000			
Sharbat	404 (750 ml)	190	76,760	76,760	34,370	42,390
	254 (1 lit)	300	76,200			
Rose water	274 (750 ml)	250	68,500	2,46,900	93,716	1,53,184
	366 (500 ml)	180	65,880			
	454 (200 ml)	80	36,320			
Gulkand	199 (1 kg)	320	63,680	1,04,960	45,691	59,269
	258 (500 gm)	160	41,280			
Total				4,79,620	1,94,682	2,84,938/-

**Table 8. ANOVA for mean income from different enterprises**

Source of variation	DF	SS	MSS	F
Between the enterprises (treatment)	5	16067106011984.10	3213421202396.82	39.58*
Within the enterprises (Error)	210	17047671011681.70	81179385769.91	
Total	215	33114777023665.80		

\*Significant at 5% level of significance

profit of Rs. 30,095/- on annual basis. Regarding rose sharbat, the annual average production of 404 bottles was 750 ml with a selling price of Rs 190/bottle. The annual expenditure incurred in sharbat making was Rs. 34,370/- with net profit of Rs. 42,390/- annually. Rose water prepared in bottles of four sizes i.e. 1 lit, 750 ml, 500 ml and 200 ml. The respondents reported that the time required for making 20 lit of rose water is around 8 hours and the method for processing the rose water is known as "Aasawan method". The average annual production of rose water was 254 bottles of 1 lit with the selling price of Rs 300/bottle, followed by 274 bottles of 750 ml having selling cost of Rs 250/bottle, 366 bottles of 500 ml sold at Rs. 180/bottle and 454 bottles of 200 ml which were sold at Rs. 80/bottle. The average expenditure required in the enterprise was Rs. 93,716/- annually with the net profit of Rs. 1,53,184/- annually.

In case of Gulkand which is commonly used as a mouth freshener prepared in 1 kg bottle with the selling price of Rs. 320/- and 500 gm bottle at Rs.

160/-. The average annual production of gulkand was 199 bottles of 1 kg and 258 bottles of 500 gm. The expenditure incurred in gulkand making enterprise was Rs. 45,691/- with a net profit of Rs. 59,269/- annually. From the table it can be concluded that 50 respondents who were engaged in rose processing enterprise earned the net profit of Rs. 2,84,938/- annually from all the four products i.e. itra, sharbat, rose water and gulkand. Further an in-depth analysis of the data was done to see the significance of difference in the mean income of the agrienterprises by computing F value. It can be clearly seen from Table 8 that there exists a significant difference between the mean incomes of the different enterprises as the F calculated was greater than the F tabulated at 5% level of significance.

From the findings of Table 9, it can be seen that the F value was found significant at 5% level of significance. Therefore, an effort was made to find out the critical difference (CD) values. Data in Table 9 reflect the comparison of mean income of different enterprises. When the mean income of

**Table 9. Significance of difference in the mean income of selected agrienterprises**

Combinations of the enterprises	SE <sub>d</sub>	CD (P=0.05)	Mean difference
Dairy and Vegetable Cultivation	63789.82	105891.11	634939.7*
Dairy and Rose Cultivation	62947.01	104492.05	711544.0*
Dairy and Rose Processing	59635.81	98995.45	610279.5*
Dairy and Poultry	71099.41	118025.02	272165.6*
Dairy and Goatry	77406.79	128495.27	741734.0*
Vegetable Cultivation and Rose Cultivation	64542.88	107141.19	76604.27 <sup>NS</sup>
Vegetable Cultivation and Rose Processing	61317.92	101787.74	24660.1 <sup>NS</sup>
Vegetable Cultivation and Poultry	72516.09	120376.71	362774.0*
Vegetable Cultivation and Goatry	78710.03	130658.65	106794.3 <sup>NS</sup>
Rose Cultivation and Rose Processing	60440.65	100331.48	101264.0*
Rose Cultivation and Poultry	71775.82	119147.86	439378.0*
Rose Cultivation and Goatry	78028.54	129527.38	30190.0 <sup>NS</sup>
Rose Processing and Poultry	68890.28	114357.87	338114.0*
Rose Processing and Goatry	75382.73	125135.34	131454.4*
Poultry and Goatry	84742.27	140672.17	469568.4*

SE<sub>d</sub> = Standard error of difference between two treatment means; CD= Critical difference;

\*= Significant 5% level of significance, NS= Non-significant

the dairy enterprise was compared with the other enterprises it was found that the mean income from the dairy enterprise differed significantly from all the enterprises. The mean income from dairy enterprise was higher as compared to the other enterprises.

Further the mean income of vegetable cultivation enterprise when compared with the other enterprises, it differed significantly from poultry enterprises. The mean income of vegetable cultivation was less than the mean income of poultry enterprises. On contrary to this, there was non-significant difference between income from vegetable cultivation and rose cultivation; vegetable cultivation and rose processing; vegetable cultivation and goatry as the mean difference value was lesser than the CD value.

With regard to the comparison of mean income of rose cultivation with other enterprises i.e. rose processing and poultry and goatry, data in the table clearly indicate that there was a significant difference in the mean income of rose cultivation with rose processing and poultry enterprises. The income from rose cultivation was less over the other two enterprises. However, there was non-significant difference between income from rose cultivation and goatry as the mean difference of both the enterprise was lesser than the CD value. It means the income from both the enterprises is at par.

Critical analysis of the table indicates that there exists a significant difference in the mean income of rose processing, poultry and goatry enterprises. The mean income from rose processing enterprise was less as compared to the poultry enterprise whereas the mean income from rose processing was more than the goatry enterprise. A comparison of mean income

from poultry and goatry enterprises reveals that the mean income of poultry and goatry enterprises differed significantly with mean income from poultry enterprise higher as compared to the goatry. Similar findings were reported by *Dave (2019)* who found that income from vegetable production and poultry; poultry and goatry were found to be significant as their mean difference was greater than the CD value.

## CONCLUSION

It can be inferred that dairy was the highly profitable enterprise as compared to the other enterprises. The reason of highest mean income earned from the dairy was due to high demand of milk in the market and respondents were competent enough to do dairy as an enterprise with a great success. As far as poultry enterprise was concerned there was quick growth of the chicks, faster return from the investment and high demand of poultry meat in the market. These characteristics make the poultry enterprise a viable one and rural youth may adopt this enterprise at larger scale. In goatry enterprise the rate of return is high with minimum cost of input. Therefore, one can easily adopt this enterprise even at a minimum investment and earn a great amount of profit. Vegetable cultivation is also profitable because the demand of vegetables never face any decline. So, one may opt this as an income source. In case of rose cultivation and rose processing enterprise, the demand of rose flowers and its processed products is increasing day-by-day. Entrepreneurs may earn a great profit from these viable enterprises.

## CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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