Research Note

BREAK-EVEN VOLUME OF EGG PRODUCTION

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Poultry is one of the important components of animal husbandry in the rural economy. It provides additional income and job opportunities to a large number of rural population. India ranks fifth in egg production in the world. Yet the per capita availability of eggs in the country is just 24. It would require almost three million additional commercial layers to increase the per capita availability by one egg. Despite this apparently unlimited scope, the Indian poultry industry faces handicaps.

After commercialization of poultry farming, there has been a considerable increase in productivity and production of eggs in the country. However the average annual rate of increase in prices of poultry feed is much higher than that of eggs which limit the farmers ability to take full advantage of the increased productivity. The farmers who venture into this industry should have a prior knowledge regarding production and profitability of eggs. Knowledge of the level of production to be reached to recover the entire investments will help the farmers in setting their investment priorities. Hence this study was under taken with the main objective of estimating the break-even volume in egg production in Chitoor district of Andhra Pradesh.

Data and Methodology

Based on the population of poultry birds and the contiguity of the mandals, Chitoor, Yadamarn and Gudipala mandals were selected for the study. The selected mandals covered 21.85 per cent of total population of poultry birds in the district. There were a total of 201 layer farms in the selected mandals. The poultry farms were classified into small farms (with less than 2000 layers) and large farms (with more than 2000 layers) for the purpose of analysis. The farms were almost equally divided between the two size groups (102 small and 99 large farms). A random sample of 15 poultry farms from each size group was selected, thus making a total sample size of 30 poultry farms. The data on farms size., capital investment, the

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quantity of inputs used and prices paid, number of eggs produced in a production cycle and other attendent costs and benefits to the poultry farms were collected for the years 1987 (January) to 1988 (June) by interviewing personally with a pretested questionaire.

Analysis of break-even volume was carried out to ascertain the minimum level of production of eggs required to recover the total fixed capital employed in poultry farming. The break-even volume of egg production may be explained as fallows.

$$V = \frac{fc}{p - vc}$$

where V = break-even volume in number of eggs

fc = Fixed costs employed in the enterprise[1]

p = Price of egg

vc = Total variable costs involved in producing one egg

Variable cost involved in producing one agg was calculated by using the following relation :

$$\frac{\text{Variable cost involved}}{\text{in producing one egg}} = \frac{\text{Variable capital}[2] - \text{receipts other than eggs}[3]}{\text{Total number of eggs produced during the cycle}}$$

Results and Discussions

Break-even analysis determines the minimum levels of egg production required to recover the total fixed costs incurred in poultry farming. From this, indirectly the time required to recover the investment made can also be derived. The break-even volume of output varies with the changes in the prices of eggs and/or price of inputs.

The average price of an egg realised was 52.44 paise by the farmers during the marketing year 1987-88 The total variable costs incurred in producing an egg were 44 paise and 45 paise respectively on small and large farms. Table 1 shows that the

1. Fixed costs/capital comprise costs towards value of land, shed for chicks and growers, shed for layers, room for eggs and feed, room for labourers, well, pumpset, pumphouse, fencing, deposit for electric meter, power supply connections, water connections and poultry equipment.
2. Variable cost/capital includes expenditure incurred on chicks, bedding material, chick mash, grower mash, layer mash, electricity charges, labour and veterinary and medical charges.
3. Receipts other than eggs consist of receipts from sale of culled birds, sale of manure and value of gunny bags sold and retained,

Table 1. Break-even analysis in poultry farms

Sl. No.	Particulars	Small farms	Large farms	Average farms
1.	Number of eggs produced during the period (per life cycle of 18 months)	2,94,234	13,52,517	8,23,335
2.	Number of eggs required to reach break even	9,36,422	19,96,465	15,49,115
3.	Years required to reach break even	4.77	2.20	2.81

break even volume of egg production is reached at the given levels of price of egg and cost of production of egg by producing 9, 36, 422 eggs on small and 19, 96, 456 eggs on large farms.   The break-even volumes could be achieved in 4.77 years on small and in 2.20 years on large farms.   These contradictions were observed because of two factors viz., the fixed capital investment and production of eggs per batch of layers.   The small farms, though they had lower levels of fixed capital investment, also had low levels of egg production. Hence, the time taken to recover fixed capital was also high. The large farms on the other hand had higher levels of eggs produced per batch of birds and hence, though they had higher fixed capital investments, they were able to recover the fixed capital within a short period of time.

Conclusion

The large farms had to produce twice the number of eggs than the small farms to break-even to recover the fixed costs.   However the time required to reach this point of output on large farms was less then half the time required on small farms.