
UNIT 3 FARM ECONOMICS

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3.0 OBJECTIVES

After studying this unit, you will be able to:

- summarize the basic terms in poultry farm economics;
- calculate the cost of production of egg and meat;
- identify the factors influencing the cost of production of eggs and meat; and
- compare various cost reduction methods in poultry production.

3.1 INTRODUCTION

Poultry farms and hatcheries are operated to make profits. In order to run the farm on profits, the farmer has to follow sound management practices and find out ways to improve the farm economy further. For this purpose, the farmer must know the basics of farm economics, technical and production standards, factors affecting the cost of production, methods to reduce the cost of production and various steps to improve the performance of the birds.

3.2 COMMONLY USED TERMS IN ECONOMICS

While dealing with economics of poultry, one uses several basic and technical terms and their simple definitions are very much required for understanding the terms in right direction.

3.2.1 Basic Terms

Some of the basic terms are detailed below:

Advance: Loan given to a person or company by a bank or financial institute.

Amalgamation: Merger of two or more companies into a large company.

Appreciation: Increase in the market value of the property, goods, stocks or any other assets.

Appropriation: The way money is allotted for various uses.

Assets: Property owned by an individual or company. It also includes goodwill, patents, stock market, real estate, equipments, tangible and intangible assets.

Audit: Examination of the companies accounts by an external accountant or auditor.

Backward integration: Expansion of business by merger or take over of companies supplying various inputs.

Balance sheet: A statement of the financial position of a company at a given time.

Bank charges: Charges levied by a bank on its customer for services provided by the bank.

Bankrupt: The state of a person or company who is unable to pay debts and has been judged as insolvent by the court. It is also called as **insolvency**.

Bank statement: A statement issued by the bank to a customer giving details of the withdrawals, deposits and the final balance of account.

Benefit Cost Ratio (B.C.R.) : It is the ratio between the total gross receipts and total expenditure incurred by the farm. If B.C.R = 1, it indicates no loss or profit (break even point), B.C.R value > 1 indicates profit and B.C.R value < 1 indicates loss to the farm. Further, B.C.R. value of at least 1.20 is desirable.

$$\text{B.C.R.} = \frac{\text{Gross receipts}}{\text{Total cost of inputs}}$$

Break Even Point: It is the stage at which the sum of prices of all inputs (expenditure) and outputs (receipts) will be the same. The break even point depends on the rate of production, prevailing prices of various inputs and outputs, quantities of the materials used and produced. Receipts over the break even point are profits; while deficits of receipts below the break even point are losses. In other words, it is a no-profit -no-loss state when B.C.R value = 1.

Book value: The value of a particular asset, after annual depreciation or appreciation, if any.

Budget: A sum of money allotted for some work or materials to be purchased.

Capital: A sum of money invested in a business or to run a farm or hatchery.

Cash flow: The way in which money moves in and out of the company over a period of time.

Collateral security: A property security for a loan provided by the borrower to the bank, which can be liquidated in the event of the borrower fail to repay the loan.

Company: A legal business organization formed by two or more individuals.

Compound interest: The interest earned during a period is added to the principal for calculating the interest for the next period.

Credit: Goods and services which are used or held in possession before they are paid for.

Debt: A sum of amount owed due by a person (debtor) to another person (creditor).

Depreciation: A gradual decline in the value of the assets or properties as the property is getting older.

Entrepreneur: A person who sets up a business or company, with own and borrowed capital.

Feasibility report: A report stating the technical and financial worthiness of a project for implementation.

Fixed cost: This cost remains constant, irrespective of the volume of production. This includes interest, depreciation etc.

Forward integration: A sort of integration where the integrator utilizes his own outputs for more profits. Starting a poultry processing plant, egg powder plant and direct marketing to get better prices for his farm outputs are examples of forward integration.

Franchise: A license granted by one company (franchiser) to another (franchisee), to do part of their job like marketing, after paying some royalty.

Goodwill: The good reputation or popularity of a company, which attract more customers for the company's commodities. It is an intangible asset for the company, which has a price when the company is sold to another.

Gross income or total receipts: It is the total income or receipts before making any deductions.

Horizontal integration: The expansion of a business by take over or merger with another business of similar nature. Merger of two or more farms or expansion in capacity of the same farm are examples of horizontal integration.

Hypothecation: Pledging a security without delivering it.

Input: All raw materials, resources, power, labour, services used by a firm to produce final products.

Integration: An association or amalgamation of firms engaged in similar type of production, production of inputs needed to the company or further utilization of their outputs. (See also Backward / Forward / Horizontal / Vertical integration).

Internal rate of return: The discount rate which makes the net present value of an investment project equal to zero. This is widely used method of investment appraisal as it takes into account the timing of cash flow.

Liability: An item on a balance sheet showing how much the company owes to others.

Loan account: Any account funded by a loan, including overdraft facility.

Margin money: It is the share of the promoter in starting a business. It is usually 25% of the total cost of the project; excluding the land cost.

Moratorium: The initial holiday period, during the execution of the project, for repayment of the bank loan. It also includes the rescheduling or postponement of loan repayment, due to delay in execution of the project and other technical reasons.

Mortgage: A loan granted to a person or a firm in return for pledging a property that is transferred as security to the bank.

Net asset value: The value of the total assets of a company after deducting all debts.

Output: The products produced or sold by a company.

Over-draft: A negative balance in a bank account. Under certain circumstances, the banks will allow over-draft facilities up to a certain limit to its customers.

Principal: The original sum of money invested or borrowed from a bank.

Profit and loss account: A statement of the income and expenditure of a firm over the preceding period of time.

Project report: A detailed plan for a scheme or business prepared by a firm or its nominee and submitted to the bank for financial assistance.

Promoter or entrepreneur: A person or firm, who sets up a company, farm or factory.

Rate of return: The expected profit on a project as percentage of the project cost.

Redeemable security: Any security that is repayable for cash at a specified date.

Subsidy: A payment by the government to any firm or agriculturist, with the aim of encouraging more production or reducing prices as compensation.

Variable cost: The cost which increases or decreases based on the volume of production; such as chick cost, feed cost etc.

Venture capital: It is also called as risk capital; which is the amount that is invested in a venture with a significant risk that it could be lost.

Vertical integration: The amalgamation of business at different stages of production process of a commodity. It may be either **backward or forward integration**. A farm trying to produce its own inputs like chicks, feed are examples of backward integration; while the farm trying to have its own processing unit and marketing network are examples of forward integration. Its aims are to have control over input suppliers, reduce cost of production and get fair price for their products.

Working capital: It is the recurring expenditure needed to run the unit initially, until it generates its own income for rotation.

3.2.2 Technical Terms

Some of the very frequently used technical terms are given below:

(i) Feed efficiency (FE) per kg egg mass

It is the ratio between the feed consumed and the egg mass in kg. This takes into consideration the feed intake, egg weight and egg production. A value of 2.0 or less is advantageous to the farm.

$$\text{FE/kg egg mass} = \frac{\text{Kg. of feed consumed}}{\text{Kg. of egg produced}}$$

(ii) Feed Efficiency (FE) per dozen eggs

It is the feed consumed per dozen eggs. It is the most commonly used index in **layers**. The value should be 1.5 or less in a well maintained farm.

$$\text{FE/dozen eggs} = \frac{\text{Kg. of feed consumed}}{\text{Dozen of eggs produced}}$$

(iii) Feed efficiency, feed conversion efficiency or Feed conversion ratio (FCR)

This is the most important and commonly used efficiency measure in **broiler** farming. It is calculated by using the formula given below:

$$\text{FCR} = \frac{\text{Total feed consumed in kg}}{\text{Total final live body weight in kg}}$$

A value of less than 1.80 at 6 weeks of age is preferable. Lower the value better will be the efficiency.

(iv) Hen Day Egg Production (HDEP)

It is the percentage of eggs produced by the survivor population. It can be expressed both in number and percentage. A round the year farm or flock average of over 85% or 320 eggs per year or above are desirable.

HDEP for a particular day is calculated using the formula:

$$\text{HDEP(Day)} = \frac{\text{Total no. of eggs produced}}{\text{Total no. of live hens on that day}} \times 100$$

HDEP over a period is calculated using the formula:

HDEP(Over a Period)=

$$\frac{\text{Total number of eggs produced during a period}}{\text{Total No. of hen days during that period (sum of opening balance of live hens on each day)}} \times 100$$

(v) Hen Housed Egg Production (HHEP)

It is the egg production, based on the initial number of hens housed in the flock. It can be expressed both in number and percentage. H.H.E.P. Values of 300 up to 72 weeks of age or 82% or higher are desirable. If there is no mortality, H.D.E.P. and the H.H.E.P. are same. As the mortality increases, H.H.E.P. decreases.

HHEP for a particular day is calculated using the formula:

$$\text{HHEP(Day)} = \frac{\text{No. of eggs produced on a given day}}{\text{Total number of hens housed at the beginning}} \times 100$$

HHEP over a period is calculated using the formula:

$$\text{HHEP(Period)} = \frac{\text{Average number of eggs produced per day}}{\text{No. of hens housed initially}} \times 100$$

(vi) Net Feed Efficiency Index (NFEI)

This is based on egg production, egg weight, feed intake and body weight gain. N.F.E.I. Value of 47 and above is desirable.

$$\text{NFEI} = \frac{\text{EM} + \text{BW}}{\text{FC}} \times 100$$

Where,

EM = Mean Egg mass in grams. i.e. mean egg weight in grams \times Average number of egg/layer during a specific period.

BW = Mean body weight gain or loss in g per layer during a particular period.

FC = Average feed consumption per layer in g during a particular period.

(vii) Performance Efficiency Index (PEI)

This is based on the data on egg weight, body weight, egg production and feed consumption.

$$\text{PEI} = \frac{30 (\text{EW})^2 \text{P}}{\text{BW} \times \text{F}}$$

EW = Average egg weight in g.

BW = Average body weight in g.

P = Per cent hen-day egg production.

F = Average feed consumed per day in g.

(viii) Egg mass / Hen housed

It is the kilograms of egg produced per hen housed. This will take into account the rate of egg production, mortality, as well as the egg weight. A value of above 19 kg per hen housed up to 72 weeks of age is desirable.

(ix) North's Egg Mass (NEM)

This is another method of measuring the production efficiency of layers. This takes into account both the rate of egg production and egg weight. A value more than 50 is advantageous to the farmer.

$$\text{NEM} = \frac{\% \text{HDEP} \times \text{Average egg weight in g}}{100}$$

(x) Egg:Feed Price Ratio (EFPR)

It is used to find out the ratio between the receipts from egg and expenditure on feed. An E.F.P.R. ratio of 1.4 and above is desirable.

$$\text{EFPR} = \frac{\text{Total value of egg produced}}{\text{Total value of feed consumed}}$$

(xi) Break Even Point

It is the stage, at which the sum of prices of all inputs and outputs will be the same. The break even point depends on the following factors.

- Rate of egg production.
- Prevailing egg price.
- Prevailing feed price.

- Culled hen price.
- Daily feed intake.
- Broiler price.
- Predictable future trends in eggs or broilers, feed and culled hen prices.

It should be observed that no poultry farmer is willing to maintain all hens after 80 weeks of age. They have to be culled because, 85% of cost of such hens maintenance goes towards feed. Therefore, a farmer should be in a position to decide when he or she should cull his birds. For this, he or she should calculate the break even point which is highly influenced by the production rate and prevailing egg and feed prices. The break even point is calculated by:

$$\text{Income: Expenditure} = \frac{\text{EN} \times \text{EP}}{\text{FI} \times \text{FC}} \times 1.176$$

Where,

- EN = Total number of eggs produced per day by the existing flock.
- EP = Sale price per egg in Rupees.
- FI = Daily feed intake by the flock in kg.
- FC = Cost per kg of feed in Rupees.

If Income to Expenditure ratio = 1, it indicates a **break even point**. Farmer can retain his flock as long as the value of Income to Expenditure ratio is > 1; since there is day-to-day marginal fluctuation in both production and egg price, a weekly average value should be taken into account rather than a single day value. If the value touches one or below one, it is time to cull the birds. But sometimes, the farmer may maintain the birds even if the value is < 1 when the rate of culled hen goes down and there is strong expectation of an upward trend in the near future. Sometimes, the farmer may have an Income to Expenditure ratio of > 1, but he is not in a position to retain the birds as there is no extra floor space available for the new replacement pullets and sometimes the culled price may be very favourable. In such cases, it is more economical to cull the flock. Normally, the break even point should be 1.3 times the feed expenditure, i.e., if the feed expenditure is Rs.100 per day, then the receipt should be Rs.130 per day.

(xii) Broiler Performance Efficiency Factor (BPEF)

It is mostly used for comparing the flocks and batches. Higher the value better will be the efficiency. A value of 110 and above is desirable.

$$\text{BPEF} = \frac{\text{Live weight in kg}}{\text{Feed efficiency}} \times 100$$

(xiii) Benefit: Cost Ratio (BCR)

It is the ratio between the total gross receipts and total expenditure incurred by the farm. A value of one BCR. indicate no loss or profit, more than one indicate profit and less than one indicate loss to the farm. BCR. values of 1.25 and above are desirable.

$$\text{BCR} = \frac{\text{Gross receipts}}{\text{Total cost of inputs}}$$

(xiv) Broiler: Feed price ratio (BFPR.)

Higher body weight gain, lower mortality, better feed efficiency, lower feed cost and a higher selling price of broiler results in a favourable BFPR value, with more profits to the farmer. A value of more than two is desirable.

$$\text{BFPR} = \frac{\text{Total value of meat or live chicken produced}}{\text{Total value of feed consumed}}$$

(xv) Broiler Performance Efficiency Index (BPEI)

This will take into account total saleable live weight and feed efficiency as well as livability. A BPEI value of 110 or higher is desirable and advantageous to the poultry farmer.

$$\text{BPEI} = \frac{\text{Total saleable live weight (kg)}}{\text{No. of chicks purchased} \times \text{Feed efficiency}} \times 100$$

(xvi) Broiler Performance Efficiency Score (BPES)

It is calculated based on all economic traits like body weight, feed efficiency and livability up to six weeks of age; giving appropriate score for each of these three traits; based on their relative economic importance.

BPE Score Card

Trait	Optimum	Range	Maximum Score
Average live weight at six weeks of age (kg)	> 2.0	1.6 – 2.3	50
Feed conversion efficiency	< 1.70	1.6 – 1.8	30
% Livability	> 96.0	92 to 98	20

The broiler flocks, which attain the optimal targets or better will get the maximum score, whereas, those flocks reaching the poorest targets or still lower score will obtain zero points. As such the BPES ranges from 0-100. A broiler farmer should try to achieve a minimum BPES of 80.

(xvii) Broiler Farm Economy Index (BFEI)

BFEI will reveal the overall efficiency of a broiler farm; taking into account all the important economic factors mentioned above; including the growing period. It is also called as **European broiler economy score** or simply as **broiler score or points**.

$$\text{BFEI} = \frac{\text{Average final live weight (kg)} \times \text{per cent livability} \times 100}{\text{Feed efficiency (F.C.R.)} \times \text{growing period (days)}}$$

A 'BFEI' value of 250 and above indicates better management of the farm and optimal performances of the birds. Since the broiler performance improves constantly, due to improved breeding, nutritional, management and disease preventive techniques, these performance levels (targets) have to be revised periodically.

At present, many broiler integrators are using this BFEI, to judge the performance of each batch or flock supplied to different contract farmers. Contract farms giving poor BFEI score consistently are eliminated and the integrator choose new farms.

Note: Although many indices are defined above, the most popularly used among them are:

1. Feed Efficiency (FE) per dozen eggs
2. Hen-day Egg Production (HDEP): for one day and over a given period
3. Feed Conversion Ratio (FCR) in Broilers
4. Broiler Farm Economy Index (BFEI)
5. Break even point
6. Benefit Cost Ratio (BCR)

Check Your Progress 1

Note: a) Use the space given below for your answers.

b) Check your answers with those given at the end of the unit.

1) What is integration?

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2) What is broiler farm economy index?

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3) What are the most commonly used indices in broiler and layer farms?

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3.3 PRODUCTION COST

Production cost of egg and meat can be calculated if the records are maintained properly. It helps in identifying the cause of higher production so that cost reduction measures can be taken up. There are various factors affecting the cost of production of eggs and meat which are discussed below:

3.3.1 Factors Affecting Cost of Production

Various factors affect the cost of production of eggs, broilers and chicks. Many of these factors are within the reach of the farmer. Hence by controlling these factors, the farmer can reduce the cost of production of products and get more profits. Some of the factors affecting the cost of production in poultry farms are as follows:

- (i) **Capital investment:** Lesser the capital investment, lesser will be the interest and depreciation on capital; which reduces the cost of production. Avoid unwanted sophistication in buildings and equipment; which will increase the capital cost. At the same time do not go for very cheap construction like thatched

roof house and high depreciation equipment like earthen-ware feeders and drinkers. Utilize all the buildings and equipment to its full capacity. Never build buildings and buy equipment for future use.

- (ii) **Inputs purchase:** Buy all farm inputs like equipments, feed ingredients, medicines, chicks, at the lowest possible cost at right time directly from the producer, any involvement of middleman.
- (iii) **Feed:** Feed is the largest single item of expenditure in poultry production. It accounts up to 80% of the total cost of production of eggs and broilers. Hence, own feed has to be produced to reduce feed cost considerably. Good quality feed ingredients have to be purchased from farmers or mills in bulk, to reduce feed cost. Farmer should not compensate the feed quality because, quality reduction will not only affect production performance of the bird; but also causes mortality.
- (iv) **Optimize production:** Optimum production standards such as high rate of egg production, better feed efficiency, faster growth rate, lower mortality rate and lesser wastage will reduce the cost of production in poultry farms significantly. In order to achieve these standards, the farmer has to optimize the management techniques, improve bio-security and provide high quality feed and water to the birds.
 - The layer farmer must aim at achieving < 0.5 % mortality per month, > 95% peak egg production, > 90% egg production up to 50 weeks of age, > 85% farm average egg production, < 130 g feed per egg, with acceptable egg size (> 55 g) as early as possible.
 - Similarly, a broiler farmer must aim at achieving a body weight of > 2 kg in < 40 days of age, with FCR of < 1.8 and mortality of < 5%, to reduce the cost of production and maximize the profits. By following better management, improved bio-security, rearing hybrid strains and feeding helps in achieving these targets.
- (v) **Fixed cost:** Fixed cost like interest, depreciation, permanent man power etc. will remain the same whether the production is 0 or 100%. Hence, resources like building, equipments etc. must be fully utilized, to reduce the fixed cost per unit production.
- (vi) **Volume of operation:** As the farm capacity increases, the production cost will come down proportionately.
- (vii) **Integration:** Integration also reduces the cost of production because, the volume of production is huge. Moreover, the integrators will have their own chicks, own feed, own medicines, own marketing etc; which will reduce the cost of production significantly.

3.3.2 Cost of Production of Eggs

You are now aware of the factors that influence cost of production of table egg. Under the present prices of various raw materials like feed, labour, chick, electricity, medicines, bank interest etc., the egg production price varies between Rs. 1.90 to 2.20 per egg as shown below:

Item	Calculation	Amount (Rs.)	Proportion of Total Cost (%)
Feed cost	130 g of feed per egg × cost per kg of feed (Rs.13)	1.69	78.6
Pullet cost	(Rs. 18 per chick + feed 6 kg × Rs.13 + Misc. Rs. 12 – Rs. 18*) ÷ 320**	0.28	13.0
Miscellaneous cost (per egg)	Interest Rs. 0.12 + labour Rs. 0.02 + medicines Rs. 0.02 + power Rs. 0.01 + others Rs. 0.01	0.18	8.4
TOTAL COST OF PRODUCTION PER EGG		2.15	100.0
* Cost of a culled hen ** Average number of eggs produced per hen			

Note: With suitable changes in the costs involved, cost of production of an egg can be calculated by the above method.

Alternatively, cost of production of 100 eggs can be calculated as follows:

Item	Calculation	Amount (Rs.)
A) Bird cost	[Cost of ready to lay pullet (108) – salvage value* (18)] × 100 ÷ 320**	28.12
B) Feed cost	13 kg per 100 eggs × cost /kg of feed (Rs. 13)	169.00
C) Miscellaneous cost	10% of A + B	19.71
TOTAL COST OF PRODUCTION OF 100 EGGS		216.83
* Cost of a culled hen ** Average number of eggs produced per hen		

At the present prices of various farm inputs like feed raw materials, nearly 79% of cost of production of egg goes towards feed, 13% towards bird cost and the remaining 8% goes towards other miscellaneous costs. Hence, in order to run the farm profitably, the farmer has to pay great attention to reduce the feed cost, without affecting the quality.

3.3.3 Cost of Production of Broiler

Similar to egg production, feed cost is the single largest item of expenditure in broiler production also. Moreover, the broiler feed cost is higher than layer feed, due to higher energy, protein and other nutrients required to be available for broilers. The broiler cost can be calculated on per bird basis, per kg basis as well as per kg dressed chicken basis, using different formulae.

Assumptions:

- With 5% standard mortality, we need 105 chicks at the start, to sell 100 broilers. So, a **factor of 1.05 chicks per broiler** is used.
- The present market cost of a day-old broiler chick is Rs. 15.
- The average market weight of live broiler is 2 kg.
- Feed efficiency is 1.8; therefore,
- Total feed required per broiler = 2 kg × 1.8 = 3.6 kg to produce one 2 kg live broiler.
- The present cost of a kg broiler feed (own feed) is Rs. 16.
- Miscellaneous costs will be about 10 % of the feed + chick cost; i.e., 0.1 × (3.6 kg × 16 + 15) = Rs. 7.26

- The dressing % will be about 75%
- Cost of dressing a broiler will be Rs.2.
- The sale price of live broiler is Rs. 60 per kg.
- The sale price of dressed chicken is 100 per kg.

With these assumptions, the formulae for calculating cost of production will be as follows:

Items	Calculation	Amount (Rs.)
Formula for calculating the cost of production per live broiler		
A. Chick cost	$1.05 \times \text{cost of one day-old chick (Rs.15)}$	15.75
B. Feed cost	$\text{Live weight 2 kg} \times \text{feed efficiency 1.8} \times \text{cost per kg of feed Rs.16}$	57.60
C. Miscellaneous expenditure	10% of A+B	7.35
Cost of production of a live broiler		80.70
Formula for calculating the cost of production of a kg live broiler		
A. Chick cost	$0.53^* \times \text{cost of one day-old chick (Rs. 15)}$	7.95
B. Feed cost	$\text{Feed efficiency (1.8)} \times \text{cost per kg of feed (Rs. 16)}$	28.80
C. Miscellaneous expenditure	10% of A + B	3.65
Cost of production of a kg live broiler		40.40
Formula for calculating cost of production of 1 kg ready-to-cook (dressed) chicken		
A. Chick cost	$0.70^{**} \times \text{cost of day old chick (Rs. 15)}$	10.50
B. Feed cost	$1.4^{***} \times \text{feed efficiency (1.8)} \times \text{cost per kg of feed (Rs. 16)}$	40.32
C. Miscellaneous cost, including dressing cost	15% of A + B	7.62
Cost of production of 1 kg dressed chicken		58.44
*, ** and *** are calculated depending on factor 1.05, dressing % and dressed weight		

Since the margin between live chicken production cost and selling price Rs (60 – 40.40 = 19.60) is lesser than the margin between dressed chicken production and marketing prices Rs. (100 – 58.44 = 41.56), a farmer or integrator will earn more profits by selling dressed chicken rather than live chicken. However, dressed chicken sales need a well developed marketing network; which involves additional cost and commission.

3.3.4 Cost Reduction Methods

Cost reduction at all stages is an essential step in maximizing the farm economy. The general principles include:

- Avoid all types of wasteful, non-productive expenditure.
- Do not block the capital or cash flow.
- Aim at lower cost of production rather than achieving better performance standards.
- Pay more attention for reducing the cost of production of feed, without affecting its quality.

- Purchase raw materials directly from the producer as far as possible and avoid intermediaries.
- Bulk purchase and purchase during harvest season is preferable; but do not lock the capital.
- Go for vertical and horizontal integration to reduce the production cost.
- Follow all least-cost technologies suggested earlier.
- Utilize all resources fully and optimally, without keeping them idle.

Check Your Progress 2

Note: a) Use the space given below for your answers.

b) Check your answers with those given at the end of the unit.

1) Enumerate cost reduction methods.

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2) List out the factors affecting the cost of production of eggs, broilers and chicks.

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Activity 1

Visit a nearby poultry farm and gather information required for calculation of cost of production of eggs or broiler. Based on the information collected, calculate the production cost or egg or broiler.

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3.4 LET US SUM UP

The poultry farmer and integrator must be aware of cost of production of eggs and broilers so that one can plan to reduce it. Lower the cost of production higher will be the profits. Feed is the single largest item of expenditure in poultry production, accounting for up to 80% of the cost. Hence, more attention must be paid in minimizing its cost, without affecting its quality. A farmer should not lock the capital in any unwanted non-productive works. Utilize all resources to their fullest extent. As the volume of production increases, the production cost will come down. Any type of integration in poultry production will reduce the cost of production of eggs and chicken.

3.5 GLOSSARY

Benefit Cost Ratio (B.C.R.) : It is the ratio between the total gross receipts and total expenditure incurred by the firm.

Depreciation	: A gradual decline in the value of the assets or properties as the property is getting older.
Feasibility Report	: A report stating the technical and financial worthiness of a project for implementation.
Merger	: Union of two or more independent corporations under a single ownership.
Subsidy	: A payment by the government to any firm or agriculturist, with the aim of encouraging more production or reducing prices as compensation.

3.6 SUGGESTED FURTHER READING

Sreenivasiah, P.V. 2007. *Scientific Poultry Production – A Unique Encyclopaedia*. International Book Distributing Company, Lucknow, India.

3.7 REFERENCES

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3.8 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

- 1) Integration is an association or amalgamation of firms engaged in similar type of production, production of inputs needed to the company or further utilization of their outputs. There are several types of integrations like **Backward integration** (poultry farm starting its own hatchery or feed mill) **Horizontal integration** (expanding the farm or buying other farms) **Forward integration** (broiler farmer starting a poultry processing plant) and **Vertical integration** (going for both backward and forward integration). Integration will reduce the cost of production, because the company is producing its own inputs and further processing its own outputs.
- 2) Broiler Farm Economy Index (BFEI) will reveal the overall efficiency of a broiler farm; taking into account all the important economic factors; including the growing period. It is also called as **European broiler economy score** or simply as **broiler score or points**.

$$\text{BFEI} = \frac{\text{Average final live weight (kg)} \times \text{per cent livability} \times 100}{\text{Feed efficiency (F.C.R.)} \times \text{growing period (days)}}$$

A 'BFEI' value of 250 and above indicates better management of the farm and optimal performances of the birds. Since the broiler performance improves constantly, due to improved breeding, nutritional, management and disease preventive techniques, these performance levels (targets) have to be revised periodically.

At present many broiler integrators are using this BFEI, to judge the performance of each batch /flock supplied to different contract farmers. Contract farms giving poor BFEI score consistently are eliminated and the integrator choose new farms.

- 3) Although many indices are used in broiler and layer farms, the most popularly used among them are:
1. Feed Efficiency (FE) per dozen eggs
 2. Hen-day Egg Production (HDEP): for one day and over a given period
 3. Feed Conversion Ratio (FCR) in Broilers
 4. Broiler Farm Economy Index (BFEI)
 5. Break even point
 6. Benefit Cost Ratio (BCR)

Check Your Progress 2

- 1) Cost reduction at all stages is an essential step in maximizing the farm economy. The general principles include:
- Avoid all types of wasteful, non- productive expenditure.
 - Do not block the capital or cash flow.
 - Aim at lower cost of production rather than achieving better performance standards.
 - Pay more attention for reducing the cost of production of feed, without affecting its quality.
 - Purchase raw materials directly from the producer as far as possible and avoid intermediaries.
 - Bulk purchase and purchase during harvest season is preferable; but do not lock the capital.
 - Go for vertical and horizontal integration to reduce the production cost.
 - Follow all least-cost technologies suggested earlier.
 - Utilize all resources fully and optimally, without keeping them idle.
- 2) The factors affecting the cost of production in poultry farms are Capital investment, Inputs purchase, Feed, Optimize production, Fixed cost, Volume of operation and Integration.