



Determining the costs and revenues for dairy cattle

Regional Training Course on Agricultural Cost of Production
Statistics

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1- Definitions

Production costs associated with dairy farming :

- All expenditures incurred in raising cattle for milk production: feed, insemination, veterinary cost, etc.
- All expenditure incurred specifically for the "milk" workshop: milking, repair and maintenance of machinery and tools, etc.
- The fixed cost of capital used by the dairy operation

Revenues associated with dairy farming :

- The sale of fresh milk
- The sale of cheese, cream, butter or other products **processed on the farm?**
- The costs associated with the purchase of cattle for the dairy should be accounted for as investments.

2- Questions and assumptions

- **Dairy is almost always coupled with the production of meat** (joint products) and possibly that of crops (e.g. forages).
- It is therefore essential to **spread the costs of operating in different activities** (milk - meat - other): What allocation?
- **The cost and revenue accounting methods depend on the nature of the activities:**
 - Joint activities: with main activity the production of milk and secondary activity which sale of calves, heifers, etc.
 - 2 distinct activity : one fore milk and one for meat

3- Situation 1: Dairy as main activity (1/2)

- **Main production:** milk and dairy products (processed on the farm)
- **Side Productions:** calves, heifers, culled cows

2 cost computing options:

Option 1: Animal sales are considered as revenue for the dairy enterprise

- Revenue can be separated into secondary products
- Can result in overestimation of the cost / liter of milk

3- Situation 2: Dairy as main activity (2/2)

Option 2: The costs of milk production are isolated

- Revenue from the sale of animals are deducted from the total cost of the dairy activity
- This deduction is only possible at the level of the total cost and not at the level of its components
- It is assumed that the income generated by the joint product is equal to its cost of production
- It is not needed necessary to use allocation keys in neither case.

4- Situation 2: mixed enterprise dairy/meat (1/4)

The farm has two (or more) distinct activities:

- The dairy activity, with its by-products
- The breeding of animals for meat production
- Crop related enterprise (forage)

In this case we need to account for costs and revenues **separately for each activity:**

- **For the separable costs** (labor related to milking, fertilizer for crops, machinery / specific tools, etc.), accounting is done directly for each activity
- **Non-separable costs** (feed used for dairy and beef cattle, energy, etc.) must be allocated to each activity using appropriate allocation keys

4- Situation 2 : mixed enterprise dairy/meat (2/4)

Possible allocation keys for joint costs between the milk and meat enterprises:

Feed costs

- **Feed cost** : for all livestock multiplied by the share of dairy herd in the total herd (number of heads).
- **Pasture**: cost for all livestock multiplied by the share of the dairy herd grazing in all animals of the farm.

Other variable costs: the number of heads can also be used as an allocation key, especially for labor, water consumption, veterinary fees, etc.

The use of these inputs is a function of the size of the herd.

- **fixed and undivided expenses** (maintenance of buildings and machinery, energy, labor, overhead, taxes, finances, etc.): Cost for all livestock multiplied by the share of dairy enterprise in value added of the farm (milk + meat).
- **If the farm also grows plant products**, a first allocation may be needed: cost for the entire farm multiplied by the respective share of crops and livestock (milk and meat) in the total value added of the farm.

4- Situation 2: mixed enterprise dairy/meat (3/4)

For integrated systems: meat - milk - forage crops:

Crop enterprise

- **Revenues are :**
 - Proceeds from the sale of crops
 - Amount used by the livestock enterprises, valued at market price
- **Cost are:**
 - Related to crop (fertilizers, labor, etc.)

Meat enterprise

- **Revenues are :** Generated by the sale of animals for slaughter
- **Costs are:**
 - Specific expenses related to livestock
 - Cost is the amount of forage from farms used for meat cattle, valued at market price

4- Situation 2: mixed enterprise dairy/meat (4/4)

Dairy enterprise

- **Revenues**
 - Generated from the sale of fresh milk
 - Generated from the sale of processed dairy products (on the farm)
 - Generated from the sale of calves, heifers and culled cows

- **Costs**
 - Expenses related to Dairy enterprise
 - Forage quantity supplied by the farm and used for the dairy herd, valued at market price

7 – References

- **AAEA Task Force on Commodity Costs and Returns (2000).** *Commodity Costs and Returns Estimation Handbook*. United States Department of Agriculture: Ames, Iowa, USA.

- **Global Strategy to Improve Agricultural and Rural Statistics (2014),** Literature review on cost of production methodologies, Technical Report Series GO-04-2014. FAO: Rome.

- **Global Strategy to Improve Agricultural and Rural Statistics (2016),** Handbook on Agricultural Cost of Production Statistics, Handbook and Guidelines, pp. 80-84. FAO: Rome.