

Farm Machinery and Processes Management in Sustainable Agriculture, 7th International Scientific Symposium

Mechanization costs in Walloon livestock farms

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Abstract

Accountings data from 255 livestock farms have been analyzed in order to determinate their mechanization cost. A weighted average value of each part of this cost has been calculated after a classification of the inquired farms. This classification is based on the technical orientation, the size and finally the localization of the farm. The weighing factor depends on the relative importance of each group at the regional level and was determined through the national statistical data.

Major differences appear between farms specialized in milk or beef meat production. With more than 750 €/ha, dairy farms need more mechanization than 'beef meat' farms which only spend 440 €/ha in average in 2013. The use of external mechanization, mainly through contractor's works, is quite important and represents between 30 and 34% of the total mechanization expenses.

We notice that dairy farms with higher gross margin require also higher mechanization costs. In situation of low milk price, the limit where higher mechanization costs are not compensated by higher gross margin is almost achieved. For 'meat beef' farms higher mechanization costs are not compensated by higher gross margin. The management of these two kinds of production must be clearly different.

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Peer-review under responsibility of the Centre wallon de Recherches agronomiques (CRA-W)

Keywords: mechanization; costs ; accountancy ; livestock.

1. Introduction

In order to increase their competitiveness, farmers have to keep their operative costs under control. Among these, mechanization costs are relatively important and represent around 29% of the production cost in dairy farms (Reuillon et al, 2008). In the Walloon region we often hear that our farms suffer from 'over' mechanization. Nevertheless, it is

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difficult to find objective mean values and to clearly identify parameters influencing the individual values. For these reasons, accountings data of almost 255 livestock farms from our network have been analyzed for the years 2008 to 2013. Our accountancy farm network is the base of the regional contribution to the Farm Accountancy Data Network (FADN) of the EU (Direction de l'Analyse économique agricole, 2015).

2. Material and Method

The data related to mechanization extracted from our accountings arise under various components.

A list of the machines is drawn up with the agricultural machinery, the milking equipment, the tools, the storage tanks, and some major repairs on this equipment. This list indicates the purchase (or sale) price and date, the information on the state at the acquisition (new or second hand), the type of machine (tractor, plough, etc.). For each machine a rate of depreciation is fixed and used to determine the annual depreciation, calculated on the replacement value. Interests on the capital are also determined as well as a replacement value. Other more general data are also registered. It includes insurances, fuel and repair or maintenance costs. The latter are simply broken down between the tractors, the milking equipment and the other machines.

The machine rental and the expenses for machines cooperatives are indicated as a global amount. The costs of contractor's works are allocated at the concerned crops or livestock.

This analysis is made in two steps:

- the research of correlation between costs and characteristics of the farms directly from the observed data,
- the determination of the weighted average mechanization costs following some farm characteristics.

Three levels of classification have been taken into account to obtain homogeneous groups of exploitations in which a detailed analysis can be conducted: the technical orientation, the size and the agricultural area in which it stands. Indeed, according to the technical orientation and to the size of the farm, the investments in equipment will be more or less important. In the same way, according the location, differences of working methods exist. Concerning the type of farm, we only focus on three technical specializations:

- the dairy farms whose main product arises out of milk production,
- the "beef meat" farms whose main product arises out of beef meat production,
- the "cattle" farms producing milk and meat, in which a double herd is very often bred.

In order to have a more homogeneous sample, farms having agricultural contractor's activities, agro-tourism, pig breeding or poultry have been eliminated from our observations.

The farm's dimension is expressed through its standard output (SO). This value represents the expected products from the farm, depending on its various productions and their relative importance. For a given specialization, this value is thus primarily connected to farm size (area or livestock). Four size classes are considered according to table 1. Small holdings having a standard output smaller than 25 000 € are not taken into account.

Finally, the third level of classification of our exploitations is the agricultural area. We distinguish three major 'areas' in Wallonia:

- the 'crop' area including the agricultural regions 'limoneuse and sablo-limoneuse' where the highest percentage of field crops (cereals, beets, potatoes,...) is found,
- the 'grass' area including the agricultural areas : 'herbagère Liégeoise, Fagne, Famenne, Ardennes, Haute Ardenne and Jurassique'. The breeding with milk and/or meat production is prevailing there,
- the 'Condroz' which is a mixed area.

Table 1. Limits of the size classes of the farms.

Size group	Standard Output min (€)	Standard Output max (€)
1	25 000	100 000
2	100 000	250 000
3	250 000	500 000
4	500 000	/

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