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THE BREADWINNING CAPACITY OF HORTICULTURAL PLANTS IN HUNGARY

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ABSTRACT:
We would like to find the answer to the question how some significant products of Hungary can provide the families with the income that they can live on. I aim at the economical examination of the apricot and the strawberry. To do this I will apply the so called Standard Gross Margin. The agriculture of the states of the European Union is measured with the help of this method. It can also help us in the future to decide whether the different farms belonging to families are economically viable in Hungary. I make suggestions regarding the sizes of the area, which would be required to provide a livelihood for an Hungarian family.

Keywords:
orchard training, work organization, economic evaluation

1. INTRODUCTION

The Hungarian food industry and agriculture is one of the most important areas of the national economy. Most agricultural products get to the consumers after food industry processing. The market possibilities of a nation and the competitiveness of the agriculture products are defined by the standard and the state of development of the food industry (Lakner, 1999). From among the changes of the economy of a nation the series of changes of the agriculture are the most particular. Privatisation reorganised the property structure of the food industry to a great extent. In the following years a group of companies run by families and being competitive in Western Europe as well will probably separate from the many people involved in agriculture and they will represent the majority of the Hungarian agricultural production (Józsa-Deli, 2003). Because of its geographical situation Hungary is extremely suitable for producing a lot of products of high quality. The fame of these cultivated areas is important for our export-oriented economy of nation. The image of the cultivated area is diverse and besides the particular products the characteristic features of the area, the atmosphere of the place, the characteristic features of the people living there, the past and the history of the area also play a significant role. In case of the unique Hungarian products processed here the consumers have to be familiar with the quality and have to recognise it (Hoffmeister Tóth-Totth, 2003).

Agriculture has been and probably will be a significant branch in the south part of the Great Plain in the future as well. Besides the mass products and in many cases instead of them when forming the agricultural structure, this region has to pay more attention to the branches that were important in the past. Hungarian experts who are famous in foreign countries as well deal with these branches and they provide excellent products. The rules referring to these products are more liberal in the market places of the European Union and their development is not controlled by strict quota systems.

2. METHODS

2.1. The Standard Gross Margin (SGM)

The concept of Standard Gross Margin (SGM) is used to determine the economic size of farms, which is expressed in terms of European Size Units (ESU). This concept is also used in the Farm Structure Survey organised by Eurostat. Definition :
For each region all crop and livestock items are accorded an SGM. The Liaison Agencies calculate the SGMs themselves on the basis of empirical data collected from farms. To avoid bias caused by fluctuations, e.g. in production (due to bad weather) or in input/output prices, three year averages are taken . SGMs are expressed in Commission publications in European Currency (EUR/ECU). SGMs are updated every two years and are calculated on a regional basis for more than 90 separate crop and livestock items. This large number of items not only reflects the diversities of agriculture within the European Union but also indicates the level of detail that is required to ensure that the results of FADN and other surveys are both comprehensive and reliable.

Our calculations were carried out with the help of a method worked out and applied in the European Union. In the European Union the agricultural enterprises have been regularly assessed (since 1966) and comparative data have been given to the decision-making organisations of the Union. Because of the number and the variations of the enterprises more than one form of measuring was applied such as the territory of the factory, the number of the employees, the number of the animals bred and the price of the products sold. As it was experienced the achievement of the agriculture in a state could not have been defined by these forms of measuring and by the combination of them. Similar to this they were not sufficient to determine the economic size of an enterprise and to compare the different factories from economic aspect (Kovács, 2001).

The unified classification system (the economy typology) was accepted in 1978 that pays attention to two aspects, the type of farming (the structure of production) and the size of the economy. In order to define the economic size the Standard Gross Margin (SGM) was worked out (Kovács et.al.,1999). The natural data referring to the structure of the factory cannot say anything about the achievement of the agriculture of a country and they are not good for economic comparing. The size of the factory is defined the best of all by the potential profitable capacity which equals with the total standard gross margin (SGM) of the particular factory -which is the same as the added value (Agriculture in the European Union 2001, European Commission).

2.2. The calculation of the Standard Gross Margin

According to the regulations of the European Union, in cultivation of plants the costs of the seeds, the propagation, the artificial fertilizers, the insecticides, the heating, the irrigation, the processing, the classification, the packing, the insurance and other variable costs that are connected with the particular production activity have to be taken into consideration among the direct variable expenses. The indirect variable costs are also defined. The variable expenses in connection with the machines belonging to the factory (such as fuel, lubricants, repairing costs) are listed here. These two groups together mean the variable costs of the economy. It does not include the costs of amortization and the rent of the agricultural land. This method takes into consideration every wages and their complementary costs as constant expenses without paying attention to whether they were paid to the owner of the farm or to a family member or to an employee. The amortization costs of the tangible assets, the rent of the agricultural land and the general costs are referred to as constant expenses. The SGM1 and SGM2 index numbers can be calculated on the basis of the relations mentioned above.

SGM1 = sales – direct variable cost (direct material costs)

SGM2 = sales – direct variable cost – indirect variable cost (the direct material costs and the direct costs of machine work are deducted from the sales).

The SGM2 index number is in fact the gross income.

2.3. The necessity of live labour

The basis of the economy producing unique Hungarian products is to deal with growing plants that assure the costs of living for a long time; can be easily produced in the south of the Great Hungarian Plain, can be easily sold in the market and can be produced by own live labour. The necessity of live labour has to be determined especially in the harvesting and the selling period. It can be calculated on the basis of detailed producing technology. In this essay we determine the area that a family can cultivate on its own – without employing workers seasonally. If we take a family with four members we calculate with three manpower units. In our earlier research the working days and working hours in cultivation of plants were defined. These data are essential to calculate the necessity of live labour especially when we plan the working peak. In the harvest phase we calculate with 7-10 working hours per manpower units a day. The family can perform 200-250 hours every ten days.

3. RESULTS AND DISCUSSION

3.1. European Size Units

The economic size of farms is expressed in terms of European Size Units (ESU). The value of one ESU is defined as a fixed number of EUR/ECU of Farm Gross Margin. Over time the number of EUR/ECU per ESU has changed to reflect inflation.

As stated above, those farms which exceed a certain economic size in ESU are defined as commercial, and thus fall into the field of observation. However, because of the different farm structures in the European Union, it is necessary to specify separate thresholds for each Member State.

3.2. The economic assessment of strawberry

From among the direct variable expenses the costs of artificial and organic fertilizers, pesticides, plants, irrigation and other variable costs were calculated in our project. The direct variable cost of the strawberry grown on family farms with the help of irrigation is 13.680 Euro per hectare. In our technology 800 Euro per hectare variable cost was calculated taking into consideration the running and the repairing costs of the machines of own property. The total variable cost in a year (14.100 Euro) was compared to the probable income. The yield can reach 16,5 tons per hectare in Great Hungarian Plain if irrigation is applied. The 1,4 Euro/kg average price could assure the farm a 23.100 Euro income. We must not forget about the fact that such an intensive planting culture requires 7.400 Euro costs per hectare at the beginning taking only an average data. This cost cannot be taken into consideration among the expenses (according to the terminology of the European Nations). Similarly to this the salary cannot be deducted although the application of live labour is the highest in case of growing plants in the fields.

SGM1 = 23.100 Euro income - 13.680 Euro direct variable cost =
9.420 Euro/year/hectare

SGM2 = 23.100 Euro income -13.680 Euro direct variable cost - 420 Euro indirect variable cost = 9.000 Euro / year / hectare.

Taking into consideration the number of the working hours, one family can manage 0.21 -hectare area without employing working seasonally. The area that can be cultivated by the family on average assures only 2.340 Euro SGM.

3.3. The economic assessment of the apricot

The basis of the production is the apricot plantation, which has a good effect on the farming. After planting there are four or five years without harvest but the field must be cultivated although there is no income and no other plants can be grown meanwhile to utilize the area. The factor cost of one hectare is 12.800 Euro. The length of the period when there is harvest is 20 years. The accountable depreciation is 6% per year.

The variable cost of the enterprise is encumbered with almost 500 Euro per hectare. This includes the costs of the materials, the artificial and organic fertilizers, the

pesticides, the packing and the processing. The indirect variable cost of the farm – according to our survey - is 420 which gives a result of a total 920 Euro variable cost. In the Great Hungarian Plain – taking into consideration the areas not abounding in nutrients – we can calculate with 6.5 tonne average yield per hectare. The distribution must be calculated with care with a 0,32 Euro/kg - average price. The income is 2.800 Euro per hectare. The biggest peak of work appears during the harvest. Taking into consideration the number of working hours 2.7 hectare of asparagus plantation ripening at the same time can be accomplished without employing workers for this season.

SGM1 = 2.800 Euro income – 500 Euro direct variable cost =
2.300 Euro / year / hectare

SGM2 = 2.800 Euro income – 500 Euro direct variable cost – 170 Euro indirect variable cost = 1880 Euro / hectare/ year.

The SGM2 for a 2.7 hectare is 3.132 Euro.

4. CONCLUSIONS

4.1. Procedure for determining farm size in ESU

There are five steps in the determining of farm size in ESU:

- Identify the enterprises present on the farm determine the scale of each enterprise (hectares or number of animals)
- Multiply the scale of each enterprise by the appropriate SGM to give the enterprise standard gross margin
- Sum up the different enterprise standard gross margins for the farm. This gives the farm standard gross margin (i.e. the total of the enterprise standard gross margins for the farm)
- Define the economic size of the farm by dividing the farm total gross margin by the value of the ESU

4.2. The bread winning capacity of the strawberry in Hungary

In order to get the income expected the cucumber should be grown with the help of post system on a 1.33 hectare big area. On such a big area 5-6 workers have to be employed. The strawberry makes it possible for the family to make ends meet. On the basis of the significant export, the market for the cucumber can be said to be steady. The income depends on the Hungarian sale ring and the processing.

4.3. The breadwinning capacity of the apricot in Hungary

In order to get the income expected the apricot should be grown on a 10.3 hectare big area. On such a big area other workers have to be employed during the harvest period for 8-9 workers. The kinds of the apricot make it possible for the family to make ends meet. On the basis of the significant export, the market for the apricot can be said to be steady. The income depends on the Hungarian sale ring. Because of the frost in late spring it is not recommended to base the whole income of the farm on the apricot. Other recommended products can be the ones the harvesting time of which is not the beginning of June or the middle of Jul.

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