

Economic figures of apple production at national level of Hungary

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Summary: Apple is the most important fruit in Hungary, despite of that, it is a paradox that during the last years, apple growing was the most unsuccessful enterprise among the prosperous ones in the country. The real cause of regression was unequivocally the low price, which could be obtained and the inadequate structure of apple varieties. A heavy problem is still the overweight of the quality doomed to supplying the processing industry instead to the fresh consumption. In order to improve the conditions, we aimed the economic analysis of the five year long period, 2005–2009, to trace the changes involving values and costs of production, income and all conditions combined with this activity. The data presented in the paper are means of a heterogeneous population of values, which cannot be utilised for immediate use in management, but they may reveal the challenges and tendencies of that branch in economics.

Key words: apple, calculation in the branch of economics, values, costs, incomes

Introduction

Apple is the most important fruit in Hungary, unequivocally, meaning 60% of all fruits grown in the country (Apáti, 2010). All apple plantations occupy 35 000 hectares of the 96 000 ha land assigned to fruit production (KSH, 2008). Fruit consumption is 70–80 kg/person/year, 25% of it, i.e. 15–20 kg is the fraction of apples. That rate of apple consumption shows a tendency of diminishing on the long run, though still dominant. Fresh consumption of apples is beneficial for health supplying Calcium, Potassium, Magnesium, fructose, Vitamins: A, B and C in the diet.

The main concern of apple growing is its biased structure of varieties, therefore the amplification of the series with varieties adapted to up to date requirements is indispensable. The modernization of the structure of technologies and innovations are also actual. Up to date varieties and new technologies are the conditions of producing uniform quality of stocks fund for a prosperous trade. Too high rate of obsolete apple plantations has been improved successfully by founding of new orchards. The irrational policy of state subsidies during the last 10 years did not promote the liquidation of uneconomic old plantations. The only issue from the dismal situation is the enhancement of competitiveness of enterprises.

The two main forms of utilising the apple fruit are industrial processing and fresh consumption. In Hungary, the rate of the latter amounts about 20–30%, this means the dominance of the former. The stimulation of fresh consumption requires the adaptation of technologies and infrastructure of ware handling and packing according to up to date patterns.

We aimed to analyse the economic aspects of the five year long period, 2005–2009, costs and values of production as well as the background contributing to the economic conditions of enterprises.

Materials and methods

Data utilised in our work are derived from the database of the Research Institute of Agricultural Economics (AKI) as processed data of test-farms over several years. The data regarding the period, 2005–2009, were surveyed retrospectively, as costs and values of production, earnings and taxes on the base of tables filled out with the documented facts. Original data were completed with derivatives; results of processing, finally, main features of management could be calculated and expressed by the parameters obtained. The results are means earned from a rather heterogeneous population of enterprises, which are not suitable to be applied to concrete cases to make adequate decisions. All the same, they may reveal the general challenges and tendencies, which decide and answer questions to be solved on the level of everyday life. So we may find precious information for planning.

Results

The data presented in *Table 1* are results of an approach of the topic, not on the micro level but on the macro level (means of the apple growing branch). Mean yields of apples

were 22-25 tons per hectare on the country level. It is subject to some fluctuation, but is considered to be stable. The year 2007 produced extremely low yields, 10 t/ha because of frost damage. The bad weather decimated, nay, annihilated the apple yields on a countrywide level. The real reason of fluctuation stems on the heterogeneity regarding the intensity and age of plantations. Also the mean sales' results are fluctuating between 30 000–39 000 Ft/t. After the catastrophe of 2007, the mean of prices was 73 000 Ft/t. In 2008, the prices fell to the half of it, which shows the eventuality of the case.

In the enterprises studied, the state subsidy amounted between 64 000–102 000 Ft/ha during the period 2005-2009, which increased clearly. Regarding the values of income, the change is important, they diminished.

Table 1. The values of apple production in commercial enterprises of relevance on the market

Items	Unit	2005	2006	2007	2008	2009
Value produced	Ft/ha	884165	842583	726182	810350	682384
Mean yield	t/ha	22.51	21.48	9.98	25.89	22.83
Mean price of apples	Ft/t	39 272	39 231	72 784	31 300	29 885
Subsidies (national and EU)	Ft/ha	63 824	85 498	76 336	102 029	104 209
Value received	Ft/ha	947 989	928 081	802 518	912 379	803 684

Source: AKI and original calculation

The direct costs of apple production are presented in *Figure 1*. Costs of materials were 173 000 Ft/ha in 2005, and increased in 2009 to 231 000 Ft/ha. Within this item, the use of specific organic fertilisers was already negligible being a consequence of the reduced planting tendencies. Costs of the nursery are also minimal because of the subsidised development. The major (90%) item of material costs is spent for phytosanitary substances, which amounted 210 000 Ft/ha in 2009. The increment was 30% after 2005. For fertilisers 15 000–30 000 Ft/ha was spent.

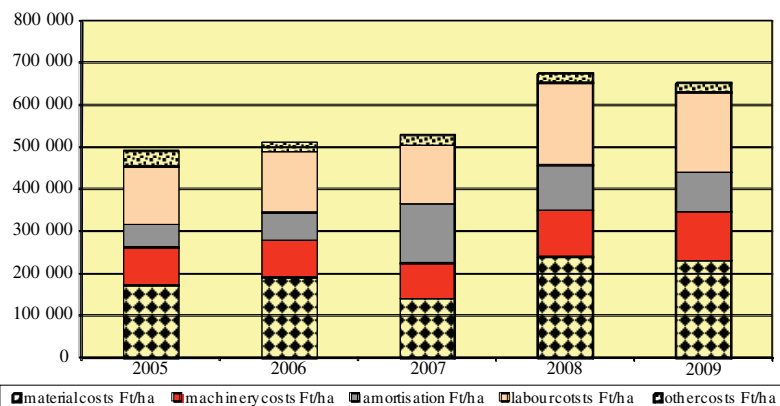


Figure 1. Direct costs of apple production in commercial farms

Direct costs of machine services were 90 000 Ft/ha in 2005, and increased by 33% to 116 000 Ft/ha. Costs of machines owned and used by the growers took between 2005–2009 between 52 000–85 000 Ft/ha. Mechanic services hired from enterprises took costs during that period was essentially constant: 21 000–23 000 Ft/ha. Activities required costs for maintenance was unimportant, only in 2007 attained once 12 000 Ft/ha. Regarding the costs for services, the tendency was showing a movement toward buying machines.

The costs for specific amortisation changed during this period typically, as then a wave of high activity of mechanisation was experienced in Hungarian agriculture on behalf the joining to the European Union. In 2005, as specific costs, growers ought to calculate 55 000 Ft/ha as a mean, and regarding the new plantations much more costs were spent, 50-70% more in 2007-2008. During those years, 110 000 - 140 000 Ft/ha specific costs are considered for amortisation.

Labour costs increased in relation to the basis of 2005 by about 50 000 Ft/ha until 2008. This means more than 30% increment. Components of this item are the wages and their accessories. The wages were 150 000 Ft/ha in 2009 already and the accessories increased from 32 000 Ft/ha to 38 000 Ft/ha during that period. The yearly increment of wages was 14% as a mean and 10% of the accessories.

Other costs were 38 000 Ft/ha/year in 2005, subsequently diminished until 2009 to 22 000 Ft/ha. Direct costs increased during 2005–2009 to 150 000 Ft/ha, which is really very significant.

The general costs varied specifically between 40 000 and 48 000 Ft/ha, and the yearly variation was unimportant.

As proved in *Figure 2*, the gross margin apple production changed conspicuously during the 2005-2009 period. Three components are presented separately: the produced value, the price of the ware increased by the subsidies and the income after sale. The direct costs have been subtracted in order to facilitate easier comparison. All the three calculations represent the sums of gross margin, however, the results are different.

The calculation based on the value produced changed along the same trends maintained its positive value during the period 2005–2009. After subtracting the general costs, the results kept its positive value, however, the sales were unable to realise the values (*Figure 3*).

The return from sales varied yearly, but at the same time direct costs increased gradually and therefore together with the general costs the net income turned to become negative during the two last years, 2008 and 2009.

Subsidies given to apple growers may turn the results to rise above the zero point. They appear already in 2005 and diminished the deficit, subsequently increased the income, while inverted the deficit to a modest income in 2008.

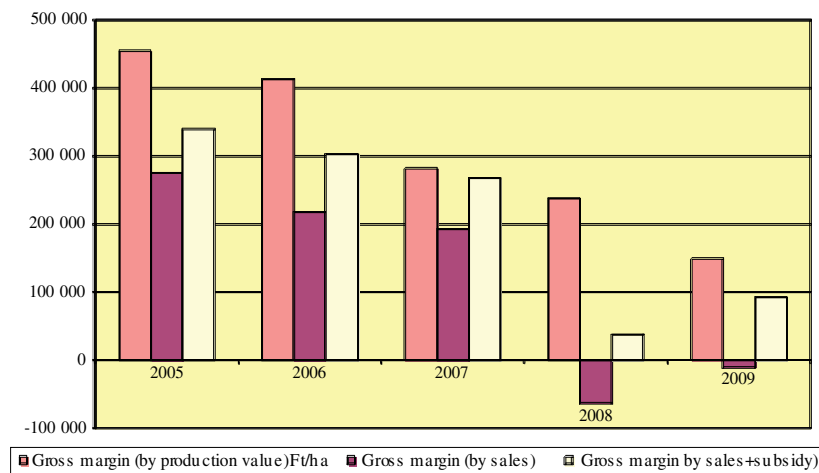


Figure 2. The gross margin of apple production from different aspects

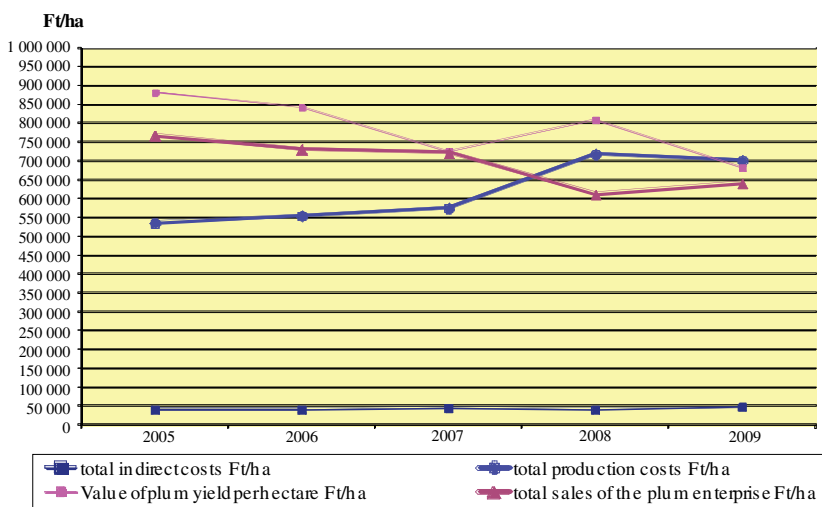


Figure 3. Changes in return from sales, value produced and costs of apple production in commercial enterprises relevant on the market during 2005–2009

Conclusions

Mean of yields of apple production were countrywide around 22–25 tons per hectares with some oscillation but it is considered almost invariable. 2007 was an exceptional season, but the price of sales of the following two years, 2008 and 2009 were lower by 25% if compared with that of the years 2005 and 2006. One of the valid solutions to save the apple growing capacity would be the change to turn the potential to grow fruit for fresh consumption instead for the

processing industry. Apáti (2009) stated that the profitability of Hungarian apple growing should not lag behind that of the German apple growing, but the rate of modern plantations is still low in Hungary. The yields fluctuated during the period studied, but the costs of production increased continuously. Material costs increased between 2005 and 2009 as well as labour and machine costs. Only the further expenses diminished slightly. The continuous fluctuation of return from sales and increasing direct costs, the moderate incomes of earlier years turned to deficits in 2008 and 2009. Considering those facts of the present situation, Gonda and Apáti (2009) call our attention to the abolition of plantations, which will ensue in the near future. A challenge, which we shall cope with on the long run. Experts and participants of that branch are most affected and ought to face with the dismal events counteracting their interests.

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References

- AKI (2003–2009):** Annual Reports of the Database of tested enterprises Research Institute of Rural Economics (AKI) Budapest 2003–2009.
- Apáti, F. (2009):** The comparative economic analysis of Hungarian and German apple production of good standard. *International Journal of Horticultural Science* 15, (4): 79–85.
- Apáti, F. (2010):** Az almaágazat helyzete és kilátásai az üzemgazdasági adatok tükrében. *Agrofórum extra*-33: 44–46.
- Gonda, I. & Apáti, F. (2009):** The future of the apple growing branch in Hungary. *International Journal of Horticultural Science* 15, (4): 91–98.
- KSH (2008):** GYSZÖ-2007, Központi Statisztikai Hivatal, 2007, Budapest