

IMPORTANT FEATURES OF TOBACCO PRODUCTION IN THE REPUBLIC OF MACEDONIA

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ABSTRACT

According to the statistical data, the authors determined that Macedonian tobacco was grown on area of 18,500 ha between 2001-2010, which is 3 % of the arable land or 75% of the industrial crops.

The average yield of dry tobacco in the investigated period ranged between 1.000 and 1,500 kg/ha. This is an opportunity for about 17 to 30 thousand tons of Macedonian tobacco to be found on the market of oriental tobacco. Almost 92 % of them is exported, while the rest is used in the country. However, Macedonia is also importer of tobacco, mainly broadleaf tobacco.

The analysis of export, import and purchase prices showed that the price of tobacco export and tobacco products has the greatest stability. The price was increasing with the same intensity from year to year, following the growth of the U.S. dollar. In contrast, the greatest fluctuation was noticed in purchasing price of tobacco .

Key words: tobacco, production, export, import, price

ПОВАЖНИ ОБЕЛЕЖЈА НА ТУТУНОПРОИЗВОДСТВОТО ВО РЕПУБЛИКА МАКЕДОНИЈА¹⁾

Врз основа на статистички податоци за периодот 2001-2010 година, авторите утврдиле дека тутунот во Република Македонија се одгледува на површина од 18,500 ха, што е 3% од обработлива површина или 75% од индустриските култури.

Просечните приноси на сув тутун, по години од истражуваниот период, се движат помеѓу 1,000 и 1,500 kg/ha. Тоа овозможува на пазарот на ориенталски тутуни да се стават на располагање помеѓу 17 и 30 илјади тони македонски тутун. Од тоа, речиси 92% се извезува, а остатокот се користи во земјата. Но, Македонија и увезува тутун, главно крупнолисни тутуни.

Анализата на цените (откупни, извозни и увозни) покажала дека најголема стабилност има кај цената при извозот на тутун и преработки од тутун. Имено, таа расте од година во година со ист интензитет, при што, речиси, го следи порастот на курсот на американскиот долар. Наспроти тоа, пак, најголема флукуација имаат цените при откупот на тутунот.

Клучни зборови: тутун, производство, извоз, увоз, цена.

INTRODUCTION

The oriental tobacco was brought to Macedonia (Vardar region) by the Turkish settlers in 1574. The first warehouse for tobacco buyout and export preparation was built in 1771 in Kavala by a French company (Lape Lj., 1974). The area and production of tobacco historically have large variations. For instance; within the past hundreds of years, the smallest area was recorded in 1995 (only 10,891 ha), while the greatest drop in production took place in 1939 (only 1,840 tons). In contrast, the largest amount of area was recorded in 1966 (34,342 ha), and the greatest production in 1986 when it was produced 35,020 tons of dry tobacco (Filiposki K., Snezana Stojanoska, 2000). In recent times, tobacco covers approximately 3.5% of the arable land and around 75% of the industrial crops. About 5.6% of the total number of families grows tobacco in the country (Pesevski M., et al., 2010). The extent of involved area and tobacco production is in correlation (with rare exceptions) with the number of households engaged in primary production of oriental tobacco. For example; according to the data by the Ministry of Agriculture, Forestry and Water Economy, during

2000, 33,906 households were cultivating oriental tobacco. Each household had averagely 0.67 ha and produced 654kg dry tobacco. After ten years (2008), the number of households dropped at 29,771 or it was decreased by 12.2%. The area per household also went down at 0.57ha, which is 15% less. At the same time, the production fell down at 574kg dry tobacco or decreased by 12.2%. The Government of the Republic of Macedonia has been subsidizing the production since 2001 in order to encourage the production, increase market competitiveness and the budget of family holdings. For the same purpose, in 2006, value added tax was reduced from 19 to 5% for certain inputs in agricultural production (Pesevski M., and so on., 2008). However, the production of tobacco in Macedonia is focused on two statistical regions. Particularly, the region of Pelagonia covers approximately 50%, while the Southeast 37% of the total area under tobacco in Macedonia (Pesevski M., et al., 2010). These studies showed that the best economic effects (highest gross margin) had the producers of Polog and the Southeast region, and the worst in the

Southeast, Southwest and Vardar region. Due to the natural conditions and tradition of tobacco production, Macedonia plays an important role (not only in exporting sitnolisen, but also importing broadleaf tobacco) on World's market of oriental tobacco. The Republic of Macedonia exports aromatic tobacco to around thirty countries over the world. 79.6% of the tobacco is exported to EU countries (Greece 39.2%, Belgium 18.3%, Bulgaria 10.6%, etc.). In the total exports of oriental tobacco dominates the type Prilep (62.5%), followed by Yaka (25.5%) and Basmak (10.4%) (Pesevski M., et al., 2010).

The results of many investigations in the world and in our country confirm that tobacco plant has other forms of use other than smoking. For example, it can be used in food industry because of its content (over 10%) of citric acid (Srbinoska A. Marija, 2005). The pectines, carotinoides, enzyme pectinase, solanesol (Coenzyme Q10) etc. are separated from tobacco (Tso T. C., 1977). It is interesting to be mentioned that beside lignin, tobacco contains relatively high quantity of cellulose. According to Veselinov (1964), the highest cellulose content is found in tobacco stems (35-40% of dry matter). Uzunoski (1985) reported that the main rib of the leaf of some Bulgarian tobacco varieties contains 10-15% of cellulose. Tobacco stems and middle leaf ribs can be used for production of paper and cardboard packaging (Agrupis S. C., et al., 1977; Hepworth D. G., et al., 1998). Dry tobacco stems are ligneous and middle leaf ribs are big and have a pulp structure. The cell walls of tobacco stem xylem contain 40-45% lignin, which is in accordance with the quantity of lignin in the trees, with one difference - the density of tobacco stem is lower (Hepworth D. G., et al., 1998). Today, tobacco stems and ribs are used as media for mushroom production. Tobacco residues (small parts, tobacco dust, ribs etc.) are used in production of reconstituted tobacco (Nuneski I., 2000), and because of the relatively high content of K and N they can be used as substitute for mineral fertilizers (Tso T.C., 1977). Tobacco seed contains high percentage of oil (30-40%), which can be used in nutrition, in production of biodiesel fuel (Filiposki K., et al., 2008), as well as in manufacture of dyes and varnishes because of its content

of linoleum oils (Srbinoska A. M., 2005). The seed cake obtained after extraction of oil from tobacco seed can be used as additional animal feed because of its high protein content (Filipovski K., et al., 2008). Because of high content of lignin (40-45%) and cellulose (28-40%), tobacco

stems can be used for production of energetic briquettes where with tobacco obtains new use value (Peševski M., et al., 2010).

The main goal of our research is to give a full description of some important features in tobacco production in the Republic of Macedonia.

MATERIAL AND METHODS

The statistical yearbooks of the State Statistical Office of the Republic of Macedonia from 2002 to 2011 were used as a basic material for our research. From this source, we used the data for areas, average yields, total production, and purchasing prices of tobacco. For export and

import analysis as well as for export and import prices of tobacco, there were used data provided by the statistical review for international trade.

The research is mainly based on secondary data, using a method of indices, comparative method, inductive-deductive methods and other methods applied in agro-economy.

RESULTS AND DISCUSSION

- **Areas under tobacco**

In the Republic of Macedonia, the areas under tobacco cover between 17,064 ha (2008) and 20,538 ha (2002), which is averagely 18,502 ha. Analysis of data for “planted and harvested” area (Table 1) shows that there was no great difference, i.e. the tobacco production was quite successful. Analysis of the areas within ten-year period of research (2001-2010) indicated that there was instability. The reasons for this situation were of different character: market, technological, social, demographic, political and suchlike reasons. Our opinion is that the last above-mentioned reason had the greatest impact on. When the Government of the Republic of Macedonia subsidized the tobacco production through the Ministry of Agriculture, Forestry and Water Management with 15.00 MKD/kg in 2001 (Table 1), the Macedonian tobacco producers

increased the amount of area by 1.1%. However, when they realized that the government ceased to support it in 2002, in 2003, the tobacco producers reduced the amount of area by 2,437 ha, or by 11.9%. The reduction of area continued even in 2004. The same year, the Government through the Program for Stimulating Agriculture announced that the tobacco production would be subsidized 15.00 MKD/kg in 2005, and consequently, the farmers increased the amount of area by 4, 4%.

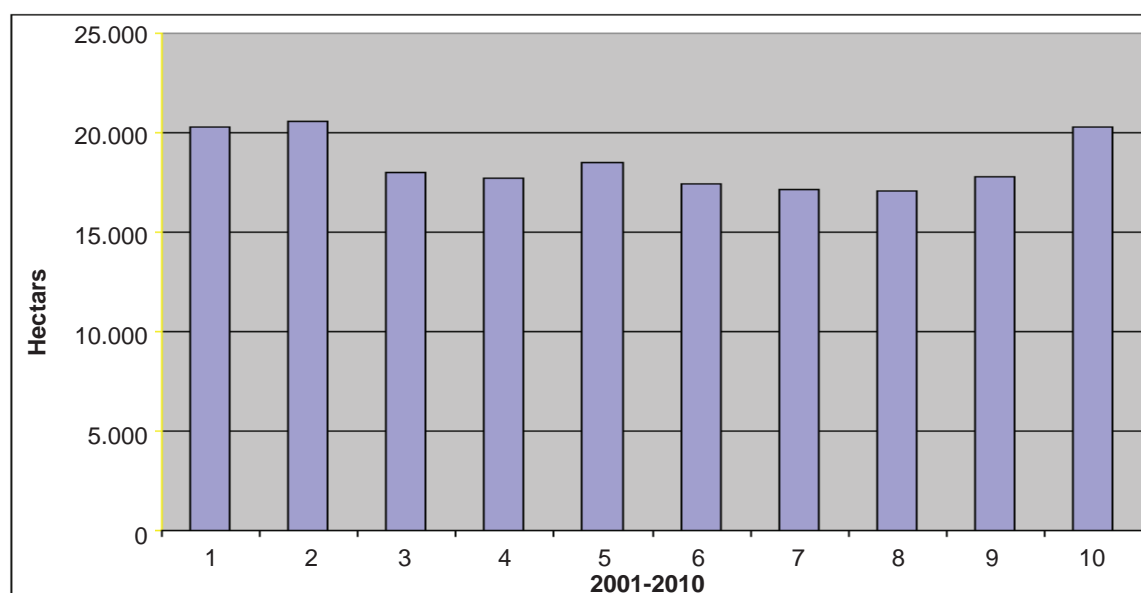
Furthermore, although the subsidization continued, the areas were on decrease until 2008. It appeared as a consequence of reduced purchasing prices for tobacco. In the next two years, the increase of area continued due to the increase of financial support from 45.00 to 60.00 MKD/kg or above 33.3%.

Table 1 – Dynamics of the area under tobacco and subsidies

Year	Hectares		Subsidies (MKD/kg)
	Planted area	Harvested area	
2001	20,310	20,274	15.00
2002	20,538	20,538	/
2003	18,101	18,008	/
2004	17,717	17,716	/
2005	18,490	18,488	15.00
2006	17,507	17,438	15.00
2007	17,183	17,132	30.00
2008	17,064	17,064	45.00
2009	17,809	17,800	60.00
2010	20,300	20,300	60.00
Average	18,502	18,476	/

Source: Statistical Yearbook of the R. Macedonia, 2002 – 2011, and date MAFWE

The general impression is that the decrease is continuous and changes are minimal.



Picture 1 – Harvested area of tobacco

- **Production of tobacco**

It is known that the total tobacco production is a function of the amount of area and gained average yields. In the study period, the total production of tobacco ranged from 17,081,064 kg (2008) to 20,287,600 kg (2010) or, with difference of 13, 2 thousand tons of dry tobacco (Table 2). In 2008, it was measured the lowest average yield per unit area of 1,001kg/ ha due to the poor

climatic conditions. In contrast to this, highest average yields were achieved at the time when the tobacco production was subsidized. It is worth mentioning that the subsidization was given per 1kg of production, regardless of its quality. In this case, producers increased the degree of intensification in order to achieve higher yields.

Table 2 – Dynamics of total production and yields

Year	Total production (t)	Yield (kg/ha)
2001	23,226	1,157
2002	22,920	1,116
2003	23,987	1,332
2004	21,631	1,221
2005	23,695	1,498
2006	25,041	1,436
2007	22,049	1,287
2008	17,081	1,001
2009	24,122	1,355
2010	30,288	1,492
Average	23,404	1,290

Source: Statistical Yearbook of the R. Macedonia, 2002 - 2011

Comparison of data shows that the total production is not in parallel with the gained yields (Figure 2). In general, the total production

depends mostly on the “harvested” area, whose average yields are important as well. In most cases, these parameters are closely connected.

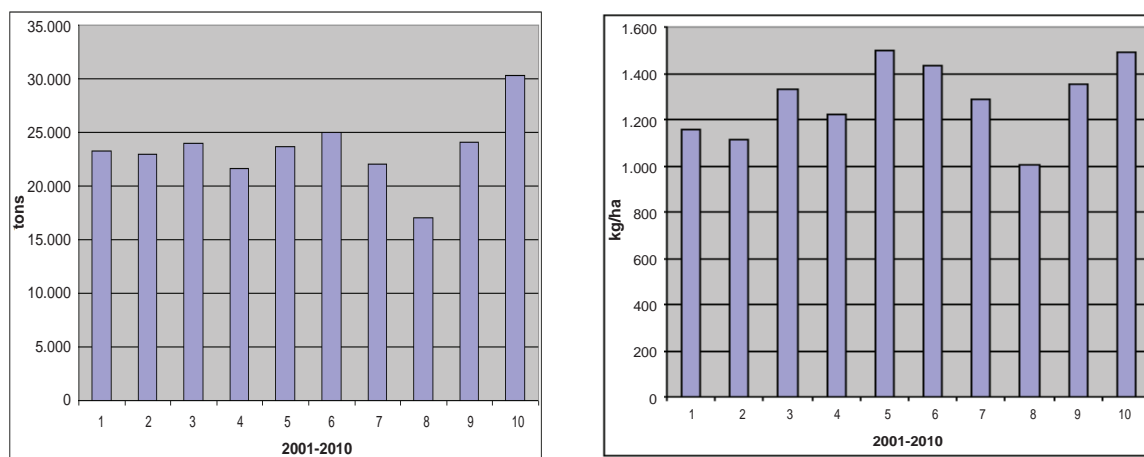


Figure 2 – Dynamics of tobacco production and its yields

- **Value of production**

The total value of tobacco depends on the purchasing prices which are dictated by internal and mostly external (international) market conditions. The quality of tobacco and the business culture of the purchasing companies in Mace-

donia have a great impact. However, Macedonian tobacco producers have an average annual production of tobacco with value of around 52 million EUR (Table 3).

Table 3 – Value of produced tobacco

Year	Indicators			
	Tobacco production (t)	Purchase price (MKD/kg)	Total value (000)	
			MKD	EUR
2001	23,226	115.22	2,676,056	44,023
2002	22,920	123.18	2,823,336	46,314
2003	23,987	81.31	1,950,355	31,935
2004	21,631	123.60	2,673,621	43,620
2005	23,695	138.67	3,285,789	53,610
2006	25,041	125.36	3,139,136	51,312
2007	22,049	115.52	2,547,087	41,637
2008	17,081	150.78	2,575,481	42,107
2009	24,122	186.94	4,509,367	73,598
2010	30,288	179.43	5,434,504	88,351
Average	23,404	134.00	3,161,473	51,651

Source: Statistical Yearbook of the R. Macedonia, 2002 - 2011

The graph shows that there was a high fluctuation in the value of tobacco from year to year during the research period.

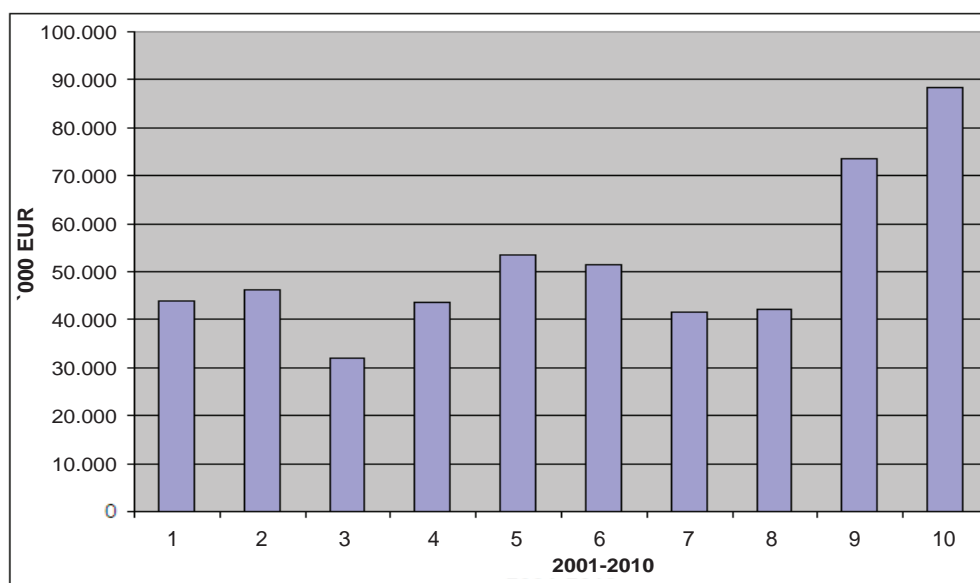


Figure 3 – Dynamics of produced tobacco value

- **Tobacco export**

Macedonia is a traditional exporter of tobacco and tobacco products. In the period of our research (2001-2010), the quantity of exported tobacco ranged between 15.4 and 32 thousand tons (Table 4). It consisted of Macedonian tobacco, some imported tobacco and tobacco products which were part of the Macedonian products (mainly cigarettes) and exported thereafter. The comparative analyses of the previous presented tables show that the quantity of exports does not

overlap with the amount of produced tobacco in the Macedonian fields.

The asymmetry of the data is due to loss of section (up to 15%) of the organic matter and weight in the process of fermentation and processing of tobacco. Since tobacco is not exported in the same year of production, companies leave an amount of it for “better times”, and keep another amount for commodity stocks.

Table 4 – Quantity of exported tobacco

Year										
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Quantity (t)										
15,399	17,260	22,455	16,353	22,764	32,031	26,241	23,372	18,748	20,688	21,531

Source: Statistical Review: Foreign Trade-2001-2010

During the research period (2001-2010), the export of tobacco and tobacco products reached its peak in 2006 when 32 thousand tons of tobacco was exported (Figure 4). In the struc-

ture of the total export, not stemmed tobacco was the most dominant (about 87%) (Filiposki, B., 2010)

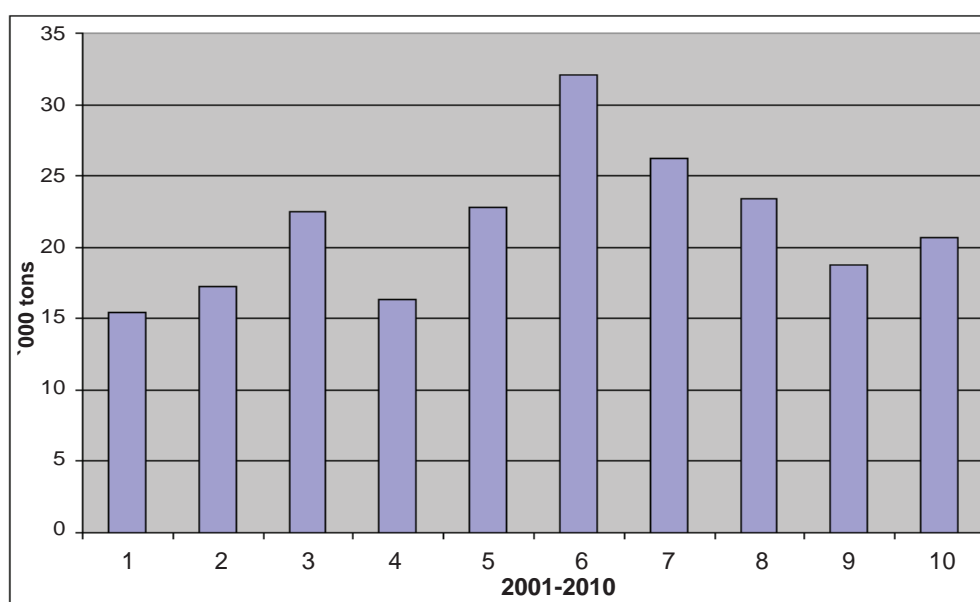


Figure 4 – Dynamics of the amount of exported tobacco

• Tobacco imports

Although The Republic of Macedonia has a relatively large amount of tobacco in warehouses, the country also imports tobacco and tobacco products. This tobacco is imported by two cigarette factories. In the structure of imports, Virginia and semi-oriental tobacco are the most dominant. In Macedonia, such raw material has not been produced for a long time due to various reasons.

In the structure of imports, the most

dominant are wholly or partly stemmed tobacco (almost 60%) (Filiposki, B., 2010). It is followed by tobacco waste (above 20%), imports of cigarettes containing tobacco and so on. However, the amount and structure of imports is dictated by the needs of cigarette factories. In the 10 year researched period, the average annual amount was 3,825 tons of tobacco and tobacco products (Table 5), which was nearly 18% of the total exports.

Table 5 – Quantity of imported tobacco

Year										
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average
Quantity (t)										
2,660	2,785	2,774	4,457	4,490	3,673	3,556	4,860	3,652	5,341	3,825

Source: Statistical Review: Foreign Trade-2001-2010

The data analysis shows that the quantity of exports had relatively large variations from year to year during the research period (Figure 5).

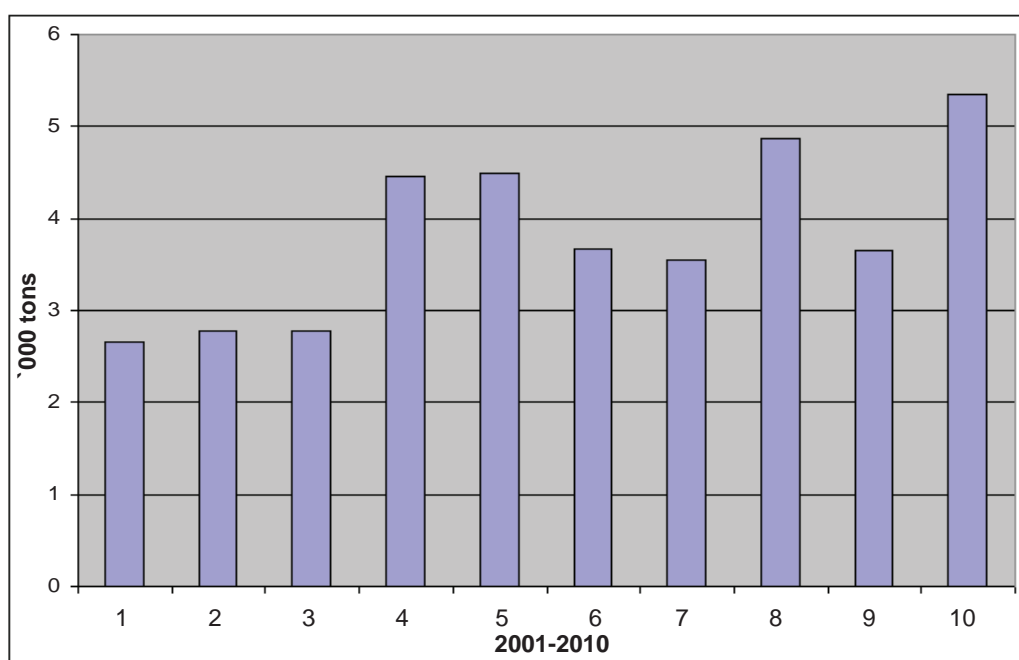


Figure 5 – Dynamics of the quantity of imported tobacco

- **Tobacco prices**

It is known that the value of tobacco depends on the purchase price to a great extent. On the other hand, the purchase price depends on the quality of tobacco and asked quantities of raw tobacco in the domestic market. During the research period, the average purchase price was 129.45 MKD/kg. At the time of raw tobacco buying out, the bottom price was (81, 32 MKD/kg) in 2003, while the highest price was (189, 94 MKD/kg) in 2009 (Table 6). According to the pre-

sented data, a dramatic fall in purchase prices was recorded in 2003, which was decreased by 34 % compared to the previous year. This was mainly due to poor quality of tobacco in the previous year of production (2002). The poor quality was a result of rainfall exceeding during the period of tobacco drying. Consequently, it led tobacco to be classified in lower classes (IIIa, IIIB and IV) which have lower purchase prices.

Table. 6 – Dynamics of tobacco prices

Indicators	Year										Average
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
	Price (MKD/kg)										
Purchase	115.22	123.18	81.32	123.60	138.62	125.36	115.52	150.78	186.94	134.00	129.45
Exports	205.78	231.16	181.70	181.99	201.40	182.84	189.50	265.72	258.46	277.90	217.65
Import	194.02	191.26	194.51	144.62	155.54	145.77	165.07	153.52	217.63	214.17	177.61

Sources: Statistical Yearbook of the R. Macedonia, 2002 - 2011, and Statistical Review: Foreign Trade, 2001-2010

The analysis of the purchase prices shows that they are almost in parallel with export prices. Such parallelism is due to the fact that not only

the companies buy tobacco, but they also export it. The price of imported tobacco ranges between the prices of buying out and exports.

CONCLUSIONS

We can draw several conclusions based on the analysis of some key elements which characterized the tobacco production in Macedonia.

- Areas under tobacco are steadily decreasing, and thus, appropriate measures should be undertaken for stability to be brought.
- In R. Macedonia, there are real possibilities for sustainability in the total tobacco produc-

tion from 23,000 to 26,000 tons.

- The better quality of tobacco will contribute to higher export price of tobacco and greater competitiveness on the world market.
- The analysis of tobacco export quantity determines a cyclical character which is due to the cyclical demand for tobacco in the world market.

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