

## **ECONOMIC ANALYSIS OF ORIENTAL TOBACCO IN TURKEY**

S. GULER GUMUS

*Ege University, Faculty of Agriculture, Department of Agricultural Economics,  
35100 Bornova-Izmir, Turkey*

### **Abstract**

GULER GUMUS, S., 2008. Economic analysis of oriental tobacco in Turkey. *Bulg. J. Agric. Sci.*, 14: 470-475

Turkey needs tobacco production and price policies with carefully determined objectives and tools that are never changing by political tendencies and all decisions taken and to be taken should be applied under no pressure as the policies point out. The purposes of this paper were performing an economic analysis of oriental tobacco or "Turkish Tobacco" production under the contract farming, and provide a guide for oriental tobacco producers budgeting specific cost categories and estimating a net return the production in Turkey to evaluate tobacco production and price policy. Cost, yield and price data were analyzed to determine the profitability. Net return obtained from tobacco growing 0.49 \$/kg. The paper finds that tobacco is lowly profitable cash crop for growers. Many commercial growers have diversified sources of income, and most small hold tobacco growers only small amount of tobacco, and grow other crops (olive and cereals), specifically to lessen their dependence on tobacco.

*Key words:* tobacco, oriental tobacco, Turkish tobacco, cost analysis

### **Introduction**

Oriental tobacco is one of the major traditional crops in Turkey. It is produced in more than 15 countries, but just five countries – Turkey, Greece, Macedonia, Bulgaria and Thailand – account for almost 62.21% of oriental tobacco production in 2006. Oriental tobacco is a plant compatible for growing on soil conditions, not suitable or profitable for growing other types of agricultural products. It is often grown in poorer soils and in areas with higher aridity. Turkey has favorable soil and climatic conditions and tradition for growing mostly small-leaf oriental or aromatic types of tobacco and very small quantities of big-leaf types of tobacco. The harvested leaves are mostly sun-cured and the characteristic golden-yellow leaf is

widely famous for its quality characteristics. Oriental tobaccos are known by their high aroma from the small leaves, being low in both sugar and nicotine. Many of the world largest cigarette makers use this tobacco to enrich the aroma and quality of their cigarettes.

Almost 213101 farming households in Turkey grow tobacco, and almost 2206 households grow burley and Virginia tobacco (TAPDK 2008). For these households, 85 per cent of their cash income was derived from the crop in 2007. The total output of oriental tobacco (raw leaves) in 2006 crops was realized 98 137 tones.

Turkey is a major trader of oriental tobacco on world markets, exporting about 125 484 tone (2005-2007) and Turkish economy is gaining an income of export such as approximately \$ 475 million per year

from tobacco.

In recent years, estimated production costs per acre for tobacco rose while tobacco prices remained fairly steady. The purposes of this paper were performing an economic analysis of oriental tobacco production under the contract farming, and provide a guide for oriental tobacco producers budgeting specific cost categories and estimating a net return the production in Turkey.

## Material and Methods

### Materials

In Turkey, about 60% of tobacco production is realized in Aegean Region. In this Region, with 81.2% of share, Manisa, Denizli and Izmir are in the first rank in Tobacco production. Cost, yield and price data were analyzed to determine the profitability a typical operation. 84 growers using the random sapling method from Manisa (Akhisar, Kirkagac, Saruhanli counties), Denizli (Tavas, Kale, Acipayam counties) and Izmir (Kinik, Kiraz, Menderes counties) in Turkey.

### Methods

In this study, the cost items of tobacco production was classified into variable and fixed cost. The variable costs associated with tobacco growing were all inputs that directly related to the production of tobacco and covered labor, fuel-oil, fertilizer, pesticide, seed, plastic wrapping, transport, ect. costs. Variable costs were calculated by using current inputs prices and labor costs.

Fixed costs included interest on total variable costs, administrative costs, and land rent. Estimating annual costs of machinery, equipment and other assets is a challenge in costs of production studies. Services such as land preparation were priced to the enterprise a "bundled" service both the machinery and labor components of the service. Administrative costs can be estimated to be 2-7% of total gross production value or 3-7% of total variable costs (Engindeniz, 2006). In this study, administrative costs were estimated 3% of total variable costs. This method was applied in

most of the previous studies (Engindeniz, 2002, 2004). Face to face interviews were carried out with 84 growers from the provinces which together produce at least 81.2 % of regional tobacco output. The data collected was statistically analyzed.

## Results

### *Socio-Economics Background of Growers*

The average age of the farmers interviewed is 49 and their average years of education are 5.2 for oriental tobacco. Their experience in oriental tobacco varies between 35-40 years and average is 30 years. Average household size of producers was 20.0 da<sup>1</sup> 34 % are members of agricultural cooperatives. On average 95% of labor use by growers for growing oriental tobacco was family labor.

### *Yield/ Production*

According to location, harvests started on June and continued until September, 2007. Tobacco yield varied between 50 kg and 75 kg/da and average yield was 61.7 kg/da. Total yield obtained from 1785.5 da was estimated to be 110142.5 kg. Tobacco yield per da varies from location to location in Turkey.

### *Costs*

Table 1 summarizes the realized production budget. Average cost of tobacco production was calculated to be 4.71 \$/kg. Total cost of tobacco production in 1785.5 da was estimated to be \$ 518390.93. Labor cost and input cost were %64.95 and %17.90 of total variable cost, respectively. However, fuel-oil, insecticide-fungicide and fertilizer costs were %12.60, %2.72 and %1.18 of total input cost, respectively. Labor and fuel-oil accounted for more than 77.55 % of the total cost.

### *Marketing and Pricing*

The new tobacco law was acted on January 9, 2002 in Turkey. The new law abolishes Government support of tobacco farming and fundamentally changes the production and marketing rules of tobacco in Turkey. The law also re-organizes TEKEL in prepara-

1 da - 1 dekar = 1000 square meters

**Table 1**  
**Costs of Oriental tobacco production Aegean Region, Turkey in 2007**

	Total costs, \$	Costs, %	Costs of killogram, \$
Labor Cost			
Soil Plowing	5572.39	1.07	0.05
Fertilization	1415.36	0.27	0.01
Seedling Preparation	1470.3	0.28	0.01
Transplants	25752.15	4.97	0.23
Seedling	35971.18	6.94	0.33
Irrigation	557.21	0.11	0.01
Grubbing costs	28553.16	5.51	0.26
Sucker Control	13073.51	2.52	0.12
Pesticide application	2147.1	0.41	0.02
Priming	139180	26.85	1.26
Lining up tobacco on a string	57010.73	11	0.52
Curing and stack Costs	14705.9	2.84	0.13
Hauling & Storage	11304.77	2.18	0.1
Total Labor Cost	336713.77	64.95	3.06
Input Cost			
Seed	59.19	0.01	0
Fertilizer	6105.58	1.18	0.06
Insecticide	10571.12	2.04	0.1
Fungicide	3507.41	0.68	0.03
Fuel-oil	65330.77	12.6	0.59
Plastic Wrapping	7234.62	1.4	0.07
Total Input Cost	92808.68	17.9	0.84
Repair Cost	13586.83	2.62	0.12
Other Cost	75281.65	14.52	0.68
Total Cost	518390.93	100	4.71

tion for privatization, and transfers TEKEL's regulatory responsibilities to the newly created "the Tobacco and Alcohol Markets Regulatory Authority", shortly is called TAPDK. The new law encourages contract farming, but also permits tobacco production without contract to be marketed at Auction. The pricing of the contracted tobacco is agreed freely by the farmers and tobacco firms, without any government intervention and contracts are also likely to include a production quantity. Prices are negotiated between farm-

ers and industry representatives each year, with quality the major determining factor.

Results of a survey conducted with tobacco growers show that the price of tobacco varies between \$ 4.8 and \$ 5.3 per head. Also, average price of tobacco was calculated \$5.2 per head.

#### *Gross and Net Revenue*

In this study, total gross revenue obtained from tobacco was determined to be 320.79 \$. Total gross

revenue obtained from a 1785.5 da was estimated to be \$ 572766.97. Total cost of tobacco production was determined to be 518390.93 \$. Therefore, net revenue was calculated to be 54376.04 \$. Net revenue obtained from a 1 kg was estimated to be 0.49 \$/kg.

## Discussion

Income stabilization depends on implementing measures aimed at reducing marketing costs and bringing efficient markets closer to farmers through increased competition and/or better control of government.

In this study, average yield for tobacco was determined to be 61.69 kg/da. Tobacco yield per decar varies from region to region in Turkey. For example in similar studies done in Marmara region, Black sea region and Eastern and South-eastern Anatolia region in Turkey, average yield was determined to be 92.47 kg/da, 113.64 kg/da and 88.60 kg/da respectively (Isikli,2001), 87.66 kg/da (Ekren,2005), 60.2 kg/da (Guler, 1999). However, in studies done in Akhisar, Manisa, Turkey. Investigation on the Factors Affecting the Yield and Quality of the Aegean Region Tobaccos was calculated to be 85.89 kg/da (Ekren, 2007). In similar study done in The Republic of Macedonia, yield was 151.71 kg/da (Tuna, 2006).

Average cost of tobacco production was calculated to be 4.71 \$/kg. Total cost of tobacco production in 1785.5 da was estimated to be \$ 518390.93. Labor cost and input cost were %64.95 and %17.90 of total cost, respectively. The largest cost in production costs is for labor.

However, fuel-oil, insecticide-fungicide and fertilizer costs were 12.60%, 2.72% and 1.18% of total input cost, respectively.

In similar studies in The Republic of Macedonia where produce oriental tobacco, Average cost of tobacco production was calculated to be 2.41 \$/kg. Labor cost and input cost were 65.35% and 12.65% of total cost, respectively (Tuna, 2006). In this study, net revenue obtained from tobacco was calculated to be 0.49 \$/kg.

In Turkey, 2006 crop oriental tobacco production was realized at 93 million kg down about 38 million kg, or 29%, from the 2005 level of 131 million kg. Due to abnormally hot and dry weather total 2007 crop production is forecast the decrease 5.2%, about 88 million kg, which represent about 81% contracted volume.

Compared to its size Turkey has a significant position on the World market for tobacco. Turkey holds the first place in the world oriental production of tobacco by quantity, and 4th place in the world by total value of export. There is an assurance of constant demand on the world market, since replacement of oriental tobaccos in world brand cigarettes structure is fairly difficult, although it is decreasing.

In the region, according to a survey conducted by farmers' dependence on tobacco can be judged from the following:

- Tobacco growers assert that tobacco is the only crop they know that could provide a living average 21 da;
- Farmers think that all other crops are subsistence crops, tobacco is an attractive crop because of the guaranteed purchase of produce;
- All the farmers say that changing government tobacco policy would cause losses through forgone income;
- Percent of 75 farmers noted that tobacco is an ideal crop because it does not require large plots of land and water;
- The best combination of activities with tobacco are olive and cereal production, but they are not options for globally replacing tobacco;
- Only 23.70 % of the interviewed producers are pleased with contract farming, 76.30 % are not pleased.

There are a few companies both in raw tobacco and cigarette sectors bring along the negative aspects of the oligopoly market conditions. Low level of organization among Turkish producers is regarded as a weakness for healthy functioning of the sector and future developments. Only a few producers are member of active producers' cooperatives and the functions of these cooperatives are not effective. In this

**Table 2**  
**Strength and weaknesses of the tobacco sector in Turkey (SWOT)**

Strengths	Weaknesses
a. High quality and rich aroma oriental tobacco; b. Experience and tradition in producing tobacco; c. Favorable climatic and soil conditions d. Existence of young population e. Production process regulated with contracts between the tobacco producers and the firms; f. Existence of cigarette factories for tobacco processing in Aegean Region g. An export-oriented product, which generate income for the Turkish economy	a. Small farm size b. Lack of alternative skills for pre-orienting, c. Lack of producer organization, lower prices for the producers; d. Abolishing Government support of tobacco farming e. Prolongation of the purchase payment-confidence problem producer/buyer; f. Low enforcement of the Law on Tobacco from producers to buyers and government g. Unmotivated tobacco producers
Opportunities	Threats
a. The abolishing of the tobacco premiums in EU, lead to lowering of the quantity produced, and at the moment open an opportunity to increase the level of production	a. Changes in the consumption structure and preferences; b. Campaign against smoking; c. Total and partial restrictions on advertising and smoking; d. Lowering of the oriental tobacco percentage in the American-blend cigarettes; e. New developing countries adding up to the list of oriental tobacco producers

case, each and every producer is defenseless as far the contract they conclude with companies. Thus, this situation causes producers to easily stay away from the sector (Table 2).

The young population in the Aegean Region, where tobacco is produced for export purposes, is not interested in tobacco production. The major reason is that oriental tobacco production is hard and intensive laboring. Hence, average age is getting higher. As a result of this, put aside increase of production in the future, it will even be hard to find producers to maintain production level of today.

As a conclusion, both producers and firms have referred different kind of problems, regarding contract farming.

Although Tobacco firm's held meetings for the training of producers, it is hard to say that these are active and effective extension systems. The Producers in-

terviewed mostly need information on pest and disease control. The firms have also told that it is necessary to increase quality of tobacco.

Precautions should be taken and legal arrangements should be done for one sided breaking of the agreements with the firms.

Farmers should be encouraged to be united under an organization to be powerful in input supply, price determination and on the other similar subjects.

#### *Acknowledgements*

Several growers helped in collection data for this study. The help of the growers and other colleagues who provided assistance is appreciated.

#### **References**

**Ekren, S.,** 2007. Investigation on the Factors Affecting the Yield and Quality of the Ege Region To-

- baccos, EGE University, Dept. of Crop Science, Phd Tesis, Izmir, Turkey
- Foreman, F. L.**, 2006. Tobacco Production Costs and Returns in 2004, USDA, United States. Department of Agriculture, USA.
- Gale, F., L. Foreman and T. Capehart**, 2000. Tobacco and the economy: Farms, Jobs, and Communities, Agricultural Economic Report 789, USDA, Economic Research Service, November.
- Engöndeniz, S. and Y. Tuzel**, 2006. Economic Analysis of Organic Greenhouse lettuce production in Turkey, Scienta Agricola, Vol.63.No.3, Brazil.
- Engöndeniz, S.**, 2004. The economic analysis of growing greenhouse cucumber with soilless culture system: the case of Turkey. Journal of Sustainable Agriculture, USA.
- Engöndeniz, S. and Y. Tuzel**, 2002. The Economic Analysis Of Organic Greenhouse Tomato Production: A Case Study For Turkey. Agro Food Industry Hi-Tech, Italy.
- Guler, S.**, 1999, A Study on the Possibilities of Oriental Tobacco Supply Planning for Aegean Region in Turkey, EGE University, Dept. of Agricultural Economics , PhD Tesis, Izmir, Turkey.
- Isikli, E., A. Koc, B. Miran, N. Akyil, C. Abay, S. G. Gumus and C. Gunden**, 2001. *Supply Control of Tobacco and its Economic Impacts*. Agricultural Economic Research Institute, Publication No: 62, Ankara.
- Kadzandira, J. M., H. M. Phiri and B. Zakeyo**, 2004. 'Malawi – Tobacco Sector Performance Audit: The Perceptions and Views of Smallholder Tobacco Farmers on the State of Play in the Tobacco Sector', Lilongwe, the World Bank.
- Nsiku, N. and B. Willings**, 2007. Tobacco Revenue Management: Malawi case study International Institute for Sustainable Development, IISD, Canada.
- Porter E Michel**, 2004. Free Press/ New York; 2004. "Competitive Strategy - Techniques for analyzing Industries and Competitors"; published originally: *New York: Free Pres 1980s*, First Free Press Edition.
- Tiller, K.**, 2001. Tobacco issues: Contracting And Use of Tobacco Settlement Payments, University of Tennessee, paper presented at the 2001 USDA Agricultural Outlook Forum, Washington, 23 Feb. 2001.
- Tuna, E.**, 2006. The tobacco sector in The Republic of Macedonia, Competitiveness analysis, SLU, Department of Economics, Degree Thesis in Business Administration, Sweden. <http://www.tapdk.gov.tr>

*Received August, 1, 2008; accepted for printing September, 2, 2008.*