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Comparative Studies Between Conventional and Organic Production

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This paper consists of three products being compared in terms of the production costs, cost items and profitability. All the data was derived through various research reports conducted by the different researchers. These products are as follows;

- organic green house tomato
- raisin(sultanas)
- damask rose

Farmers may choose organic methods for several reasons;

1. Organic produce generally brings in a price premium of 10-30% extra price in the market.
2. Second, organic produce incurs reduced input costs, improved farm safety, reduced environmental impact, and a better functioning agroecosystem.

Farmers compare the items listed below when choosing the production methods. They generally are concerned about their income but probably don't care about the other factors (sustainable agriculture, healthy food, etc). The items relevant in the farmer's choice are:

1. Prices
2. Costs and cost items
3. Yields
4. Net return to the farmers

Organic Tomato in Green House

Brief information of organic tomato production in Turkey

Table 1. Organic Tomato Production in Turkey

	1997	1998	1999
Farmers	36	35	273
Area(hectares)	66,5	152,3	342,3
Production(tons)	5 371	5 325	7 095
Export(tons)	792	796	1458

Source: Ministry of Turkish Agriculture.

Some differences of Organic tomato production in green house due to production methods

Solarization

This is the term of the soil by using the solarium. This is the only way to fight against the nematodes. So, their cost is the polyethylene used to cover the entire producing land before seedling.

Pollination

Organic tomato production in the green house requires bombus bees as a tool of pollination. There is another way to do it, but this is most effective solution.

All the prices of inputs and product belong to the year of 2000-2001 production season.

	Conventional	**Organic**
1. Prices	190 000 Tl/Kg	420 000 Tl/Kg
2. Costs	122 763 Tl/Kg	213 282 Tl/Kg
3. Yield	20 000 Kg	7 000 Kg

Some important factors used for calculating the total cost of production are listed below;

Variable Cost: Costs that vary directly, though not always proportionally, with the volume of output. The principal direct costs are labor, raw materials and power. Variable costs are identifiable as directly arising from and relating to the various cost units or cost centres being used as a means of analyzing costs.

Fixed Cost: Costs of production that do not vary significantly with the volume of output and can only be changed in the long run. Examples of indirect costs include interest charges on loans, costs of maintaining equipment, rent and rates, and administration costs. In accounting, indirect costs are not easily identifiable against any of the various cost centres or cost units being used in the analysis of costs.

Interest on total Value of Variable cost: This is the alternative cost of production incurred by using the own capital of farmers instead of credit from the bank. This calculates the percentage of half of the short term credit on the bank. At that time, the interest rate of the short term credit was about 40-50%. So, the rate of this item is derived from the following calculation: ½ x interest rate of short term credit.

Administrative Cost: Administrative cost is the ratio of a certain value of total variable cost. This certain value is 3% in the rule of calculation in any agricultural products.

Annual Initial Investment Cost: This is the depreciation of the establishment cost of the orchards. This is the decrease in value of an asset through wear and tear, obsolescence, or any other factor that decreases its usefulness. For the calculation of this item, the economic life of investment cost is taken into account. At the end of this period the whole asset should have been charged to the profit and loss account. In the green house, the economic life period is 20 years.

Costs and Cost Items

(Percentage on the total costs)

	Conventional	**Organic**
Variable costs		
1. Ploughing	0,7	..0,5
2. Seedling	8,0	.12,7
3. Fertilizer	4,7	. 7,5
4. Fungusit & insecticide	16,1	. 1,9
5. Energy	5,1	. 0,8
6.Labor wages	30,1	.13,1
7.Transport	7,7	.8,0
8.Certification	-	14,5
9.Bombus bees.	-	6,0
Total Var. Cost	72,4	65,0
Fixed costs		
8.Interest on tot. Val.of var.cost	16,3	14,6
9.Administrative cost	2,2	2,0
10.Annual Initial inv.cost	7,1	15,1
11.Land rent	2,0	3,3
Total Fixed Cost	27,6	35,0
Total Gross Return	3 800 000 000 TL	2 940 000 000
1.Total Net Return	1 344 739 000 TL	1 447 022 000
2.Net Return Per Kg. of Tomato	67 236 TL	206 717 TL
3.The Ratio Of Return to Cost	54 %	96 %

RAISIN (SULTANAS)

All the prices of inputs and product belong to the year of 1995 production season.

1 $ = 43 929 TL

	Conventional	**Organic**
1. Prices	31 500 TL/kg	40 000TL/kg
2. Costs	40 132 TL/kg	42 329 TL/kg
3. Yield	448 Kg	460 kg

Costs and Cost Items
(Percentage on the total costs)

	Conventional	Organic
Variable costs		
1. Fertilizer	11,8	18,3
2. Fung. & Ins.	10,8	10,4
3. Other materials	8,0	7,2
4. Labor wage	23,2	20,9
5. Energy	11,8	10,3
6. Etc.	6,4	5,8
Total Var. Cost	72,0	72,9
Fixed costs		
8.Interest on tot. Val.of var.cost	16,2	16,4
9. Administrative cost	2,1	2,1
10. Annual Initial inv.cost.	9,7	8,6
Total Fixed Cost	28,0	27,2
Total Gross Return	14 112 000 TL	18 400 000 TL
1.Total Net Return	1 132 961 TL	3 928 676 TL
2.Net Return Per Kg. of Sultanas	2 529 TL	8 540 TL
3.The Ratio Of Return to Cost	%6,3	%20,1

DAMASK ROSE

This product is produced for the perfume industry. This is the production of distilled production from the rose leaves. This is mainly concentrated in the middle anatolia. Here in Turkey, there is a special sales cooperative which concentrates on this product.

Table 2. Damask Rose production in the World

Countries	Damask Rose(kg)	%
Turkey	2000	47,1
Bulgaria	1500	35,3
Morocco	500	11,8
Iran	250	5,8
Total	4250	100

Resource: The Union of Rose Agricultural Sale Cooperatives, 2000.

All the prices of inputs and product belong to the 2001 production season.

	Conventional	Organic
1. Prices	380 000 TL/kg	700 000TL/kg
2. Costs	TL/kg	TL/kg
3. Yield	265,3 Kg	180,8 kg

	Conventional	Organic
Variable costs		
1.Farm yard manure	10,5	31,3
2.Compozed	17,4	-
3.Fung.& Insc	11,8	6,2
4.Labor wages	31,7	34,4
5.Energy	5,3	4,7
Total Var. Cost	76,7	76,6
Fixed costs		
6.Int. on tot. Var.costs	21,0	21,1
7.Administrative costs	2,3	2,3
Total Fixed Cost	23,3	23,4
Total Gross Return	100 814 000TL	126 560 000TL
1.Total Net Return	37 043 000TL	86 894 000TL
2.Net Return Per Kg. of Roses	139 626TL	480 608 TL
3.The Ratio Of Return to Cost	% 58	%219

Problems on the farmers' side

1. Farmers don't want to obey the rules of organic agriculture. They don't know the amount of what materials to use or not to use. This is definitely related with the farmers back-ground of the farmers.
2. Another drawback is the lack of the organic farm extension made by government and the companies. One must determine how the price level for an organic product is better than for a conventional one. This is the most important issue for the extension.
3. Finally another problem is the lack in farmer organization and efficiency in the market (Cooperatives, farmer union, and chamber, etc).

This is also important for contract farming. Farmers don't have any bargaining power against the companies. Most companies belong to multinational firms. Farmers don't compete with this type of organization. This is the problem for all farmers in the world. But, some of them solve their problem by using farmer organizations or some other methods or nothing.

Cooperatives must be a tool for creating an agreement position. Cooperatives can affect both the marketing and supply side through bargaining or acquisition of a processing plant and production of inputs.

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