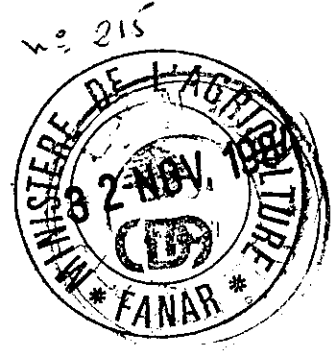


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الجمهورية اللبنانية

مكتب وزير الدولة لشؤون التنمية الإدارية
مركز مشاريع ودراسات القطاع العام

Republic of Lebanon
Office of the Minister of State for Administrative Reform
Center for Public Sector Projects and Studies
(C.P.S.P.S.)



CHERRIES IN LEBANON

1967

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STATISTICAL SURVEY REPORT

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Agricultural Economics Service
Department of Joint Technical Services
Ministry of Agriculture

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CHERRIES IN LEBANON

Introduction

Cherry is primarily an European crop: the continent of Europe accounts for nearly 85 percent of the total world production of cherries. North America produces about 10 percent of the World total while the rest is contributed by Turkey, Syria, Lebanon, Japan, Australia, Argentina and Chile. The total World production of cherries is of the order of 1.5 million tons out of which about 400,000 tons are sour cherries. Cherries are grown all over Europe but Federal Republic of Germany is the biggest producer contributing about 19 percent of all European production. Italy is a close second producing about 17 percent of the total production of Europe.

In Lebanon the production of cherries on a commercial scale is of relatively recent origin. Until the second World War there were only few scattered trees of cherries in Lebanon. The expansion in cherry area started after the war but in the beginning the crop was generally grown mixed with other fruits. Rapid expansion of area under cherries took place in the decade of the fifties and the production increased from an annual average of 2,400 tons in 1954/56 to a peak of 7,000 tons in 1961. In the recent years again there has been further expansion in area under this crop and the trend has been more towards pure cherry plantations rather than mixing with other fruit crops. Much of the newly planted area has not yet come into production but the production in 1967 had already reached the record level of 10,000 tons.

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A complete survey of the cherry crop was carried out in 1967 in order to establish the correct level of the area and production of this crop and to show the extent of new area planted under cherries in recent years so that the likely level of the production of cherries in the coming years could be anticipated.

Cherry production in Lebanon is concentrated in the two provinces of Mount Lebanon and Bekaa. In Mount Lebanon the crop is highly localised in about a dozen villages mainly in the cazas of Kesrouan and Metn. Nearly half of the total area of cherries is found in caza Zahle of Bekaa province but the crop is grown all over Bekaa in more than 100 villages.

Survey Design and Methodology

Many factors contributed to the decision to carry out a complete survey of the cherry crop in preference to a sample survey which would have cost less in time and money. First of all the high concentration of the crop in few areas meant that the sample design would have to take such areas in full in the sample thus leaving a minor portion of the crop for coverage by sample. Secondly, there are a large number of varieties of cherries grown in the country and sufficient basic information was not on hand to enable the sample being designed in such a way as to ensure adequate coverage of all varieties. The third factor was the existence of extensive new plantings of cherries for which also sufficient information was not available to introduce proper stratification in the sample. In view of these reasons it was decided to carry out a complete survey of the crop.

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The field enumeration was done by statistical enumerators who were personally familiar with the area in which they were deputed to work. In the major cherry growing areas the enumerators went from orchard to orchard ascertaining the necessary information on the spot and recording it in the given forms. In less important areas the cherry growers were listed with the help of the mukhtar and the requisite information was ascertained from each grower by direct interview. The number of scattered cherry trees was ascertained for each village in consultation with the mukhtar and a representative group of farmers. The survey covered 10 villages in Mount Lebanon and 109 villages in the Bekaa province. For North and South Lebanon, where the crop is negligible, the information was obtained in the course of the survey for 1967 current agricultural statistics.

Area under Cherries

The total area under cherries in 1967 was 18,421 dunums. Almost half of this area was in the caza of Zahle alone. The second important caza was Kesrouan which accounted for 17% of the total area under cherries. Mount Lebanon as a whole accounted for 30.6 percent of the cherry area while Bekaa had 68.7 percent. North and South Lebanon had only negligible area under cherries. The caza wise breakdown of the area under cherries is given in table 1 which also shows the area of pure cherry orchards and those of mixed cherry orchards. The last column in the table shows the cherry area in each caza or province expressed as percent of the total cherry area in Lebanon.

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Table 1. Area under Cherries
classified by Mohafazas and Cazas

Mohafaza/Caza	Pure cherries (Dunums)	Cherries Mix- ed with other crops (Dunums)	Total Lebanon	
			Dunums	% of Total
North Lebanon	23	50	73	0.4
Mount Lebanon:				
Metn	173	1,304	1,477	8.0
Baabda	198	784	982	5.3
Kesrouan	175	2,952	3,127	17.0
Chouf	13	45	58	0.3
<i>Total Mount Lebanon</i>	<i>559</i>	<i>5,085</i>	<i>5,644</i>	<i>30.6</i>
South Lebanon	25	31	56	0.3
Bekaa:				
Rashaya	178	253	431	2.4
Bekaa west	394	1,192	1,586	8.6
Zahle	8,022	1,138	9,160	49.7
Baalbeck	1,058	253	1,311	7.1
Hermel	24	136	160	0.9
<i>Total Bekaa</i>	<i>9,676</i>	<i>2,972</i>	<i>12,648</i>	<i>68.7</i>
<i>Total Lebanon</i>	<i>10,283</i>	<i>8,138</i>	<i>18,421</i>	<i>100.0</i>

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In surveying the area under cherries an important distinction was made between area under pure cherry orchards and orchards of cherries mixed with other fruits. Table 1 shows the Pure and mixed area under cherries in each caza. The proportion of Pure and mixed area under cherries in each province is shown in table 2. The most outstanding feature of cherry orchards shown by table 2 is that in Mount Lebanon only 10 percent of the Cherry area is of Pure Cherry orchards and 90% is mixed; in Bekaa on the other hand 76 percent of the area is of pure cherries and only 24% is mixed. It may also be seen in table 1 that all cazas of Mount Lebanon show nearly the same proportion of Pure and mixed cherry area. In Bekaa, however, the cazas of Rashaya, Bekaa West and Hermel have more mixed than pure area of cherries while in Zahle and Baalbeck the area of pure cherry orchards is more than the area of mixed orchards.

Table 2. Proportion of Pure and Mixed Area under Cherries

Mohafaza	(Percent)		
	Pure Cherries	Cherries mixed with other crops	Total
North Lebanon	32	68	100
Mount Lebanon	10	90	100
South Lebanon	45	55	100
Bekaa	76	24	100
<i>Total Lebanon</i>	56	44	100

Of the total pure cherry area in Lebanon the province of Bekaa alone has 94%. On the other hand Mount Lebanon has 62% of all the mixed cherry area in Lebanon.

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Productive and Unproductive Area

In recent years there have been substantial new plantings of cherries besides the normal process of replacement of old trees (over 15 years) with new trees of better varieties. Consequently in 1967 as much as 46 percent of the area under cherries was found to be below the Productive age of five years. In the Bekaa province nearly half of the area was below the productive age while in Mount Lebanon the proportion of unproductive area was 40%. The situation is summarised in table 3.

Table 3. Productive and Unproductive Area under Cherries

Mohafaza	Productive		Unproductive		Total	
	Dunums	%	Dunums	%	Dunums	%
North Lebanon	43	59	30	41	73	100
Mount Lebanon	3,386	60	2,258	40	5,644	100
South Lebanon	12	21	44	79	56	100
Bekaa	6,488	51	6,160	49	12,648	100
<i>Total Lebanon</i>	<i>9,929</i>	<i>54</i>	<i>8,492</i>	<i>46</i>	<i>18,421</i>	<i>100</i>

A study of the above table would indicate that in the next four years, with the new plantings coming into maturity, the productive area of cherries would increase substantially and the production of cherries can be expected to register a steady rise.

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Number of Cherry Trees

In Lebanon the number of cherry trees per unit area varies widely from ten trees per dunum in some parts of Mount Lebanon to as many as 75 trees per dunum in other parts. The major factor in determining the number of cherry trees per dunum is whether it is a pure cherry orchard or the cherries are mixed with other fruits. In the pure cherry orchards, of which the area in Mount Lebanon is very limited, the number of trees per dunum varies from 60 to 75 in Mount Lebanon and 45 to 60 in Bekaa. In the mixed plantings the number of cherry trees varies from 10 to 30 per dunum in Mount Lebanon and 20 to 40 per dunum in Bekaa. In the mixed plantings it seems that the effort is to have a total of 60 to 70 fruit trees per dunum. The situation with regard to average number of cherry trees per dunum is summarised in table 4.

Table 4. Average Number of Cherry Trees per Dunum

Mohafaza	Trees per dunum
North Lebanon	26
Mount Lebanon	27
South Lebanon	23
Bekaa	45
<i>Total Lebanon</i>	39

In pure cherry orchards the number of trees average 55 per dunum while the average is 19 per dunum in mixed plantings. In the latter case the variation, of course, is very great.

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Bekaa province as a whole has the highest average of 45 trees per dunum. Since two third of the area under cherries is also in the Bekaa province it is obvious that majority of the cherry trees are also in that province. In Mount Lebanon although the number of cherry trees per dunum of pure cherries is usually higher than similar plantation in Bekaa yet the overall average number of trees per dunum is much lower than in Bekaa on account of the fact that there is very little of pure cherry area in Mount Lebanon.

The total number of cherry trees of all ages is estimated to be 0.8 million of which 90 percent are in compact plantations while about 10 percent are scattered trees. It is noticeable in table 5 that while the number of cherry trees in compact area in North and South Lebanon is negligible there are a substantial number of scattered trees in these provinces. The scattered trees constitute about 14% of the total trees in Mount Lebanon while in Bekaa only about 3 percent of the total trees are scattered.

Table 5 shows that the Bekaa province alone accounts for 72.9 percent or nearly three fourths of the total cherry trees. North and South Lebanon contribute 5 percent while Mount Lebanon has 22.1 percent of all the cherry trees.

Note: *The term 'compact' plantation is used in this report to indicate the fields in which cherry trees are grown inside the field either alone or mixed with other fruit trees, as distinct from scattered trees which are found on the borders or in the kitchen gardens.*

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Table 5.

Number of Cherry Trees

Mohafaza	Trees in compact area	Scattered trees	Total Trees	
			Number	%
North Lebanon	1,898	12,235	14,133	1.8
Mount Lebanon	152,388	24,145	176,533	22.1
South Lebanon	1,288	24,506	25,794	3.2
Bekaa	565,848	17,862	583,710	72.9
<i>Total Lebanon</i>	<i>721,422</i>	<i>78,748</i>	<i>800,170</i>	<i>100.0</i>

Productive and Unproductive Trees

The Productive and unproductive area under cherries has been discussed earlier. In actual practice many of the cherry fields are partially productive and partially unproductive in any given year. This is due to the fact that all trees in a field may not be of the same age. Old trees are uprooted and new trees are planted in their place. Some trees are eliminated by disease and new ones have to be planted. Thus the concept of productive and unproductive trees is more precise than productive area as the basis for estimating production of cherries.

It may be seen in table 6 that 62 percent of the cherry trees in Lebanon were productive in 1967 (The productive area was 54%). In Mount Lebanon the proportion of productive trees was more (65 percent) as compared to Bekaa (61 percent). In all there were 306,241 cherry trees under the

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productive age in 1967. This means that when in four years time all these trees start bearing the country would have an additional 5 to 6 thousand tons of cherries (assuming an average yield of about 20 kilograms per tree).

Table 6. Productive and Unproductive Trees, 1967

Mohafaza	Productive		Unproductive		Total	
	Number	%	Number	%	Number	%
North Lebanon	9,610	68	4,523	32	14,133	100
Mount Lebanon	114,746	65	61,787	35	176,533	100
South Lebanon	14,961	58	10,833	42	25,794	100
Bekaa	354,612	61	229,098	39	583,710	100
<i>Total Lebanon</i>	<i>493,929</i>	<i>62</i>	<i>306,241</i>	<i>38</i>	<i>800,170</i>	<i>100</i>

Varietal Composition of the Cherry Crop

In the course of the survey in Mount Lebanon and Bekaa information was also gathered on the varieties of cherries. It was found that there are seven major varieties viz: Taliani, Zahr, Nuwari, Banni, Kalb-Uttair, Pharaoni and Yabani and there are a large number of less important cherry varieties grown in Lebanon. Some of them are strictly localised while others are found scattered all over the cherry growing areas. Since in many fields the varieties are mixed it was not possible to classify the area as under specific varieties. Instead cherry trees have been classified

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by varieties and the position is summarised in table 7.a and 7.b respectively for Mount Lebanon and Bekaa provinces.

It may be seen in table 7.a that the most important variety in Mount Lebanon is Zahr which accounts for more than one fourth of all cherry trees in the province. Other important varieties in the order of importance are Banni, Kalb-Uttair, Zahr and Nuwari.

Table 7. a. Number of Cherry Trees of different
varieties in Mount Lebanon

Variety	Number of Trees	% of Total
1. Nuwari	21,360	12.1
2. Zahr	48,193	27.3
3. Banni	38,308	21.7
4. Kalb-Uttair	11,122	6.3
5. Kalb-Uttair Zahr	34,247	19.4
6. Sukkari	3,884	2.2
7. Taliani	9,180	5.2
8. Pharaoni	353	0.2
9. Kaus Kazah	3,178	1.8
10. Barri	1,236	0.7
11. Others	5,472	3.1
<i>Total</i>	<i>176,533</i>	<i>100.0</i>

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In Bekaa the most important variety is Taliani (Italian) which accounts for 38.6 percent of all trees in that province; the second is Nuwari; in the third place are Nuwari Bkeer, Pharaoni and Yabani. In fact there are a host of other varieties grown in Bekaa including all those grown in Mount Lebanon but the growers themselves are not always aware of the varieties in their orchards. Thus there is a high percentage of trees in Bekaa classified as "others".

Table 7. b. Cherry Trees of different varieties
in Bekaa province

	Variety	Number of Trees	% of Total
1.	Yabani	43,778	7.5
2.	Taliani	225,312	38.6
3.	Pharaoni	50,783	8.7
4.	Nuwari Bkeer	51,950	8.9
5.	Nuwari	84,638	14.5
6.	Others	127,249	21.8
	<i>Total</i>	<i>583,710</i>	<i>100.0</i>

Production of Cherries

In Lebanon the harvesting of cherries starts first in Bekaa in the second week of May and by the end of June the harvesting is complete in that province. The crop in Mount Lebanon matures later and the harvesting

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starts in the end of May and continues till the end of July. Based on the actual yield recorded by the growers the average yield of cherries was estimated on the basis of per dunum of productive area and per bearing scattered tree.

The variation in yield from field to field and from tree to tree is quite wide. While the average yield per tree is 25 kilograms there are many trees yielding up to 150 kilograms. Similarly a yield of 2,000 kilograms per dunum is not uncommon for the pure cherry orchards with about 55 mature trees per dunum. The average yield over all types of fields is, however, low mainly because substantial part of the area is not of pure cherry orchards but mixed with other fruits. Table 8 shows the average yield per dunum of productive area and per productive tree.

Table 8. Average yield of Cherries in 1967

Mohafaza	(Kilograms)	
	Per dunum of productive area	Per scattered Tree
North Lebanon	880	27
Mount Lebanon	810	22
South Lebanon	780	30
Bekaa	920	32
Total Lebanon	882 ^{1/}	25

^{1/} If the productive area is of pure cherries the average yield is about 1,300 kilograms and if it is mixed the average is about 500 kilograms of cherries.

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It may be seen that the yield per dunum as well as per scattered tree is the highest in Bekaa. It is further noticeable that generally the yield per scattered tree is more than the yield per tree in compact area. The average yield in 1967 was considered to be fairly good though not the highest on record. The production of cherries was estimated separately for the compact area and the scattered trees.

Table 9. Production of Cherries in 1967

(Production in metric tons)

Mohafaza	From productive Area		From scattered trees		Total	
	Tons	%	Tons	%	Tons	%
North Lebanon	38	16	198	84	236	100
Mount Lebanon	2,743	90	319	10	3,062	100
South Lebanon	9	2	441	98	450	100
Bekaa	5,970	95	292	5	6,262	100
<i>Total Lebanon</i>	<i>8,760</i>	<i>88</i>	<i>1,250</i>	<i>12</i>	<i>10,010</i>	<i>100</i>

It may be seen in table 9 that 88% of the production of cherries came from the compact area while 12% was contributed by the scattered trees. The total production was 10,000 tons which was a record for Lebanon. In the coming years more of the cherry trees are expected to come into production and the production of cherries may be expected to reach the level of 15,000 tons by 1972. Lebanon started exporting cherries in 1957 when less than 100 tons of cherries were exported. In 1966 the exports reached a level of 300 tons.

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Average Price and Total Value

The prices of cherries vary a great deal according to the time of harvesting and the variety. Early and late varieties fetch better prices. When the harvesting starts in Mount Lebanon the major part of the crop from Bekaa is already marketed. Thus generally the Mount Lebanon cherries fetch better prices than the Bekaa cherries. Table 10 shows the average prices received by the growers as ascertained in the survey and the total value of production as calculated on the basis of these prices.

Table 10. Average Farm Prices and Total Value
of Cherries in 1967

Mohafaza	Average Price per kilogram	Total Value	
		(1000 L.L.)	%
North Lebanon	63	149	2.3
Mount Lebanon	66	2,021	30.8
South Lebanon	83	374	5.7
Bekaa	64	4,008	61.2
<i>Total Lebanon</i>	<i>65.5</i>	<i>6,552</i>	<i>100.0</i>

The total value of 6.5 million Lebanese pounds represents about 4 percent of the value of all fruits produced in Lebanon. In Bekaa the value of cherries accounts for 14.6% of the value of all fruits produced in that province. On a per unit area basis the cherry crop in 1967 yielded L.L. 660 per dunum of productive area or L.L. 355 per dunum of all cherry area.

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