



***The World's Largest Open Access Agricultural & Applied Economics Digital Library***

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from AgEcon Search may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

*Copy 01*  
MISCELLANEOUS PUBLICATIONS

No. 1.

GOVERNMENT AGRICULTURAL ECONOMIC  
LIBRARY

MAY - 1 1953

# **NORM INPUT - OUTPUT DATA OF SOME CROP AND LIVESTOCK ENTERPRISES OF CYPRUS**

By

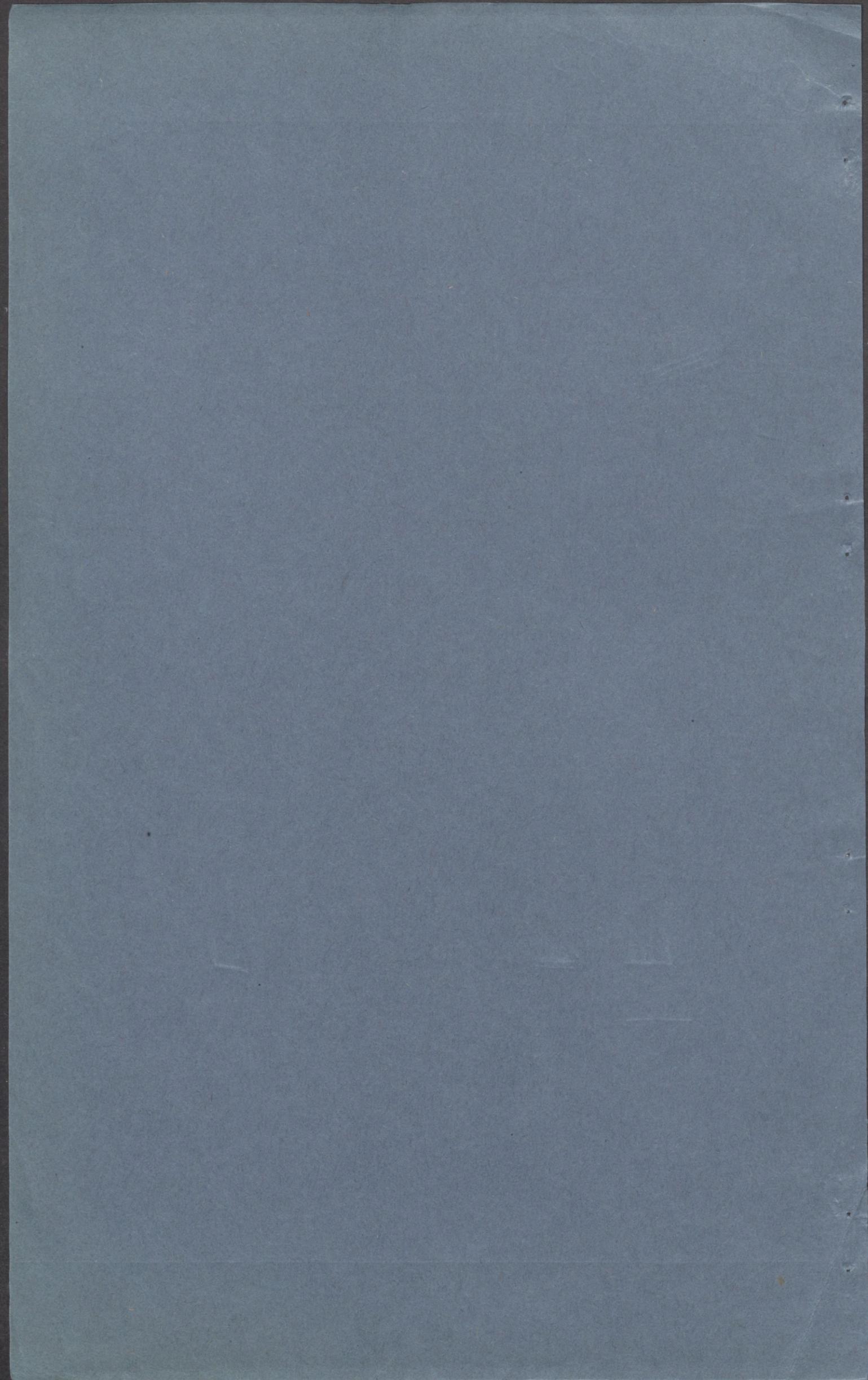
**Dr. Harald Kunert**  
FAO — Expert in  
Agricultural Economics

And

**Petros Yiassimides**  
Dip. Agric. (Cirencester), N.D.A.  
B.Sc., M.Sc. (Kans St. Univ.)

**CYPRUS AGRICULTURAL RESEARCH INSTITUTE**  
(Joint UNSF/FAO — Cyprus Government Project, No. 54)  
**MINISTRY OF AGRICULTURE AND NATURAL RESOURCES**

June, 1966.



MISCELLANEOUS PUBLICATIONS No. I

NORM INPUT - OUTPUT DATA  
OF SOME CROP AND LIVESTOCK ENTERPRISES  
OF CYPRUS

By

Dr. Harald Kunert  
FAO - Expert in  
Agricultural Economics

and

Petros Yiassemides  
Dip. Agric. (Cirencester) N.D.A.  
B. Sc., M.Sc. (Kans. St. Univ.)

CYPRUS AGRICULTURAL RESEARCH INSTITUTE  
(Joint UNSF/FAO - Cyprus Government Project, No. 54)  
MINISTRY OF AGRICULTURE AND NATURAL RESOURCES  
CYPRUS

- Nicosia, June, 1966. -

Contents

		<u>Page</u>
I. Introduction . . . . .	1	
II. Definitions, Explanations and Assumptions . . . . .	3	
III. Measures, Weights, Currency and Abbreviations . . . . .	6	
IV. References . . . . .	7	
V. Norm Input-Output Data:		
Enterprise:-		
1. Wheat (grain) . . . . .	9	
2. Barley (grain) . . . . .	12	
3. Sorghum (grain) . . . . .	15	
4. Spring-Potatoes . . . . .	17	
5. Autumn-Potatoes . . . . .	20	
6. Spring and Autumn Carrots . . . . .	23	
7. Onions (from onion sets) . . . . .	26	
Onions (from seed) . . . . .	29	
8. Tomatoes . . . . .	32	
9. Haricot-beans . . . . .	35	
10. Peas . . . . .	38	
11. Water-Melons . . . . .	41	
12. Melons . . . . .	44	
13. Early Cucumbers . . . . .	47	
14. Egg-plants . . . . .	50	
15. Groundnuts . . . . .	54	
16. Tobacco . . . . .	57	
17. Farras (irrigated, cut) . . . . .	60	
18. Green Maize . . . . .	62	
19. Berseem . . . . .	64	
20. Green Alfalfa . . . . .	67	
21. Vetches . . . . .	70	
22. Farras (Non irrigated, grazed) . . . . .	72	
23. Farras (Non irrigated, cut) . . . . .	74	
24. Subterranean Clover . . . . .	76	
25. Dairy . . . . .	78	
26. Rearing Dairy Replacements . . . . .	81	
27. Beef Fattening . . . . .	84	
28. Sheep . . . . .	87	
29. Pig Fattening . . . . .	91	
30. Rearing Weaners . . . . .	94	
VI. Appendix:-		
Tractor Costs . . . . .	96	
Water Costs and prices. . . . .	97	

## Introduction

Agriculture is and will continue to be for many years the main industry of Cyprus. The development of the agricultural sector is of extreme importance to the overall economic development of the Island. Any changes in the agricultural industry are bound to have repercussions on the other sectors of the economy and the economic development of Cyprus.

In many countries during their first steps towards economic development the agricultural sector lagged behind. As a result the development of the other sectors of the economy was affected and finally the whole process of economic development was slowed down. To achieve rapid economic development the growth has to be balanced. All sectors should develop more or less simultaneously.

In the drawing up and implementing the first Five Year Development Programme in 1961 it has become apparent that more precise and reliable data relating to the agricultural sector would be very valuable. To satisfy this need the Agricultural Research Institute started in 1962 the collection of agricultural input - output data covering tobacco, cereals, sheep and goats, potatoes, citrus, carobs and olives. The main purpose of these studies is to get more information about the prevailing farming systems and conditions. The results obtained reflect the present levels of production under both bad and good management conditions. These studies showed that possibilities exist to increase production by adopting better management practices. It therefore seemed necessary to try to investigate these possibilities in detail in order to find the best means and methods of increasing productivity in agriculture. To be able to carry out this task it is necessary to have reliable input-output data for all agricultural enterprises. Above all information is needed about factor - product, factor - factor and product - product relationships of all agricultural factors of production (inputs) and products (outputs).

This contribution is an attempt to estimate the norm input - output relationships of 30 farm enterprises. The list will be enlarged to include all crop and livestock enterprises present in Cyprus. The data were collected with the help of the professional staff of the Ministry of Agriculture and Natural Resources and many progressive farmers. Information from farmers was obtained through special cost and enterprise studies.

In cases where information was not available from local sources, e.g. animal nutrient requirements, the data were obtained from international publications. A list of the local and foreign publications used is shown in page seven. No attempt at interpretation is made in this paper.

The estimated input - output data can be used for a great number of purposes. Among others they can be used for:

- 1) Farm planning.
- 2) Farm budgeting.
- 3) Drawing up, evaluating and implementing agricultural projects and plans.

### Definitions, Explanations and Assumptions

#### I) Norm Input-Output Data

a) Norm Input Data are the inputs which are necessary, reasonable and recommendable, according to the present technology, to achieve the potential production levels in the different agroeconomic regions of the Island.

b) Norm Output Data are the yield levels that can be achieved under good management conditions. The norm average yields are higher than the statistical average yields which reflect yields achieved both under good and bad management conditions.

#### II) Revenue

Revenue is the total value of production (yield x price) under the assumption that all production, primary and subsidiary, is sold.

#### III) Cost

Cost is the utilisation and consumption value of materials and services used for the production of revenue. Costs are always related to the period necessary to obtain the revenue.

The various costs can be distinguished into two categories:

a) Variable costs are the costs which fluctuate according to the level of production.

b) Fixed costs are the costs which remain constant regardless of the level of production.

In this manual the fixed costs are not included in the calculation.

#### IV) Yields

In order to facilitate calculations under different conditions, yield is shown wherever possible at three different levels.

Yields are expressed in the commonly used weights. The nutritive value of fodder crops is stated in Protein Equivalents and Starch Equivalents.

#### V) Prices

These are the prices paid by and to the farmers during the year 1965. Information about prices was secured from many sources, such as special surveys of the Agricultural Economics Section of the Agricultural Research Institute, the Ministry of Commerce and Industry, marketing cooperatives, business firms etc.

#### VI) Seed

For all crops except potatoes it was assumed that all levels of production - low, average and high - can be achieved by using the same seed rate.

In the case of potatoes - for which recent experiments of the Agricultural Research Institute have shown that yields can be increased by increasing the weight of the seed sown - the seed rate was varied according to the yield.

VII) Fertilizers

The amount of fertilizer used influences the yield. The fertilizer rate for the average yield is based on information provided by the fertilizer specialist. In cases where information was not available the information was collected by surveys carried out by the Agricultural Economics Section of the Agricultural Research Institute.

For the low and high yield levels the fertilizer rate was varied accordingly. Fertilizer experiments now under the way at the Agricultural Research Institute will give more accurate information about the optimum fertilizer rates for the various crops and rotations.

VIII) Plant Protection

The calculation of the plant protection costs was based on the cost of chemicals necessary to prevent or control the commonly occurring plant diseases and pests.

Labour requirements are those required when using portable hand operated sprayers and/or dusters.

IX) Irrigation

The water cost is not included in the variable costs because water costs and/or water prices vary enormously in the different regions of the Island and for different irrigation systems. Total and monthly water requirements for all irrigated crops are shown for three different water efficiency levels namely 25, 50 and 75 per cent.

X) Tractor costs

The tractor costs are assumed to be variable. These are calculated on the basis of a 35h.p. tractor working 1.000 hours per annum for 10 years. If the tractor is used less hours per annum the tractor costs per hour will of course be higher, and vice versa.

XI) Maintenance of Special Machinery

This cost item is mentioned to make it clear that in principle it is part of the variable costs. In the first edition of this manual these costs have been neglected because of the low mechanisation level assumed for the majority of the enterprises.

In cases where higher mechanisation was assumed - cereal crops-contractor work was used.

XII) Labour Costs of Additional Hired Labour

No figure is given for this cost item as it was assumed that all labour requirements can be met by the available permanent farm labour force.

The amount of hired labour depends on the total permanent labour force and the labour requirements during peak periods. The latter depends on the size of the farm and the type and combination of the crop and livestock enterprises of the farm.

XIII) Labour Costs and Requirements

As stated under XII, it is assumed that all manual labour is carried out by the permanent farm labour. Therefore all labour costs are considered to be fixed.

The total labour requirements and their monthly distribution are shown only for the average yield level. In cases where labour requirements vary according to the yield level the labour requirements for the low and high yield levels can be worked out by adding or subtracting certain labour hours. These can be calculated from the information provided in the tables.

Measures and Weights

1 government donum	= 1600 square yards
	= 14,400 square feet
	= 0.33 acre
	= 0.133 hectare
1 acre	= 3.02 government donums
1 hectare	= 7.5 government donums
1 oke	= 2.8 pounds (lb)
	= 1.27 kilogramme (kg)
1 pound (lb)	= 0.35 oke
1 Kilogramme (kg)	= 0.80 oke
1 mile	= 1.6 kilometre (km)
1 Kilometre	= 0.6 mile
1 foot	= 0.304 m
1 metre (m)	= 3.28 feet
1 inch	= 2.5 cm
1 centimetre (cm)	= 0.39 inches
1 imperial gallon	= 0.0045 cubic metre = 4.54 litres
1 cubic metre	= 219.97 imperial gallons
1 cubic metre of water	= 1 ton

Currency

1 Cyprus pound (£)	= 1000 mils
1 U.S. Dollar (\$)	= 0.357 mils

Abbreviations

hr(s)	= hour(s)
P.E.	= Protein Equivalent
S.E.	= Starch Equivalent
T.D.N.	= Total Digestible Nutrients
S.A.	= Sulphate of Ammonia
N.A.	= Nitrate of Ammonia
T.S.P.	= Triple Superphosphate

Compound fertilizers are shown by their chemical composition (example: 6-8-8 and 7-11-0).

References

- 1) Becker, M. Futterbedarf und Futterwert  
Bedarfsnormen, sowie Naehrwert der Futtermittel  
fur Rinder, Schafe und Schweine  
in Mentzel: Landwirtschaftlicher Kalender 1963  
Hamburg und Berlin, 1963.
- 2) Brunner, W. Beregnungs - Taschenbuch  
Mannesmannregner  
Duesseldorf - Cerresheim, 1959
- 3) Chimonides, S. J. Irrigation Methods and the Wastage of Water  
Ministry of Agriculture and Natural Resources  
Department of Agriculture, Nicosia, 1965.  
(In Greek)
- 4) Chimonides, S. J. Water Requirements of Crops  
Ministry of Agriculture - Nicosia  
Mimeoographed paper, 13.4.1965.
- 5) Kreher, G. Leistungszahlen fur Arbeitsvoranschlaege  
Kreuznacher Heft 17, Stuttgart, 1955.
- 6) K.T.L. KTL - Kalkulations - Unterlagen Bd. 2  
Maschinen - und Gebaeudekosten  
Frankfurt a. M. 1964.
- 7) K.T.L. KTL - Taschenbuch fur Arbeitswirtschaft,  
Arbeitszeitbedarf, Maschinen-und Gebaeudekosten  
im Landwirtschaftlichen Betrieb,  
Frankfurt a. M. 1966.
- 8) Ministry of Agriculture,  
Fisheries & Food (U.K.) Rations for Livestock  
Bulletin No. 48, 1960.
- 9) Morrison, F.B. Feeds and Feeding, Morrison  
Publishing Co, Clinton, Iowa, 1959.
- 10) O.E.C.D. Work Requirement Data for Farm Management Purposes.  
O.E.C.D. Documentation in Agric. and Food No. 72  
Paris, 1965.
- 11) Roy, J.H.B. The Calf, its Management, Feeding and Health,  
National Institute for Research in Dairying  
Shinfield, Reading,  
England, 1959.

- 12) Schulze-Lammers, H. Leistungszahlen, Teil II.  
Wein, Obst und Gemuese, Kreuznacher Heft 26,  
Bad Kreuznach, 1958.
- 13) Soteriadou, C. Avgi, Report on Vegetable Experiments,  
Ministry of Agriculture,  
Nicosia, 1966 (unpublished)
- 14) Soteriadou, C. Avgi, Annual Report on Vegetables,  
Ministry of Agriculture,  
Nicosia, 1964.
- 15) Yang, W. Y. Methods of Farm Management Investigations  
FAO Agricultural Development Paper No. 64  
ROME, 1965.
- 16) Zyngas, Ph. John,  
Hadjianastasiou, G.V.  
Shiakides, Th. Practical and Financial Data on  
Plant Protection Measures and Methods  
for the Control of Pests and Diseases of  
Plants and Crops of Cyprus.  
Ministry of Agriculture, Nicosia, 1966.

TABLE 1  
Norm - Calculation of Revenue and Costs

Product:	Wheat (grain)		
Area:	All dryland areas of Cyprus		
Management:	Non-irrigated, mechanised cultivation and harvesting		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	120	140	160
Price mils/oke	48	48	48
Subsidiary Revenue Straw 60/70/80 okes @ 6 mils	0.360	0.420	0.480
A. Total Revenue £/donum	6.120	7.140	8.160
<u>Variable Costs</u>			
Seed 12 okes @ 65 mils	0.780	0.780	0.780
Fertilizer 20/25/30 okes of 7-11-0	0.460	0.575	0.690
Plant Protection Chemicals	0.150	0.150	0.150
Tractor costs 3.5 hrs	0.623	0.623	0.623
Contractor costs for harvesting	1.000	1.000	1.000
Maintenance of special machinery	-	-	-
Labour costs of additional hired labour	-	-	-
B. Variable Costs £/donum	3.013	3.128	3.243
C. Difference (A-B)	3.107	4.012	4.917

TABLE 1a  
Labour Requirements

Product:	Wheat (grain)		
Area:	All dryland areas of Cyprus		
Average yield:	140 okes / donum		
Management:	Non-irrigated, mechanised cultivation and harvesting		
Rotation:	Wheat-Fallow-Wheat		
		Hours per donum	
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 deep ploughing	1	-	1
3 medium ploughings	2.1	-	2.1
<u>Seeding</u>			
Rolling	0.2	-	0.2
Combined drilling (9')	0.4	-	0.2
<u>Cultivating</u>			
Dusting	0.5	-	-
<u>Harvesting</u>			
Tractor driven combine	1.3	-	0.7
Loading by hand	0.10	-	0.03
Transport by trailer	0.02	-	0.02
Total hours / donum	5.62	-	4.25
Labour hours per ± 100 okes yield	± 0.08	-	± 0.04

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7		0.7		0.7					1		
Seeding											0.4	
Rolling											0.2	
Dusting	0.5											
Harvesting						1.3						
Loading+transport						0.12						
Total hours/month												
a) Wheat year <sup>1)</sup>	0.5	-	-	-	-	2.12	-	-	-	-	0.6	
b) Wheat year <sup>1)</sup>	0.5	-	-	-	-	0.7	-	-	-	-	0.6	
c) Fallow year	-	0.7	-	0.7	-	-	-	-	-	1	-	-

1) If harvesting is done by contractor

TABLE 1b  
Prices of the 1966 Wheat Production<sup>1)</sup>

Purchase Price <sup>2)</sup>	Sale Price
First 5 tons: 49 mils/oke	All quantities: 43.75 mils/oke
Second 5 tons: 47.5 mils/oke	
Additional tons: 46 mils/oke	

1) Wheat handled by the Grain Commission.  
2) Wheat produced by any one grower.

TABLE 2  
Norm - Calculation of Revenue and Costs

Product:	Barley (grain)		
Area:	All dryland areas of Cyprus		
Management:	Non-irrigated, mechanised cultivation and harvesting		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	140	180	200
Price mils/oke	32	32	32
Subsidiary Revenue Straw 35/45/50 okes @ 5 mils	175	225	250
A. Total Revenue £/don.	4.655	5.985	6.650
<u>Variable Costs</u>			
Seed 14 okes @ 45 mils/oke	0.630	0.630	0.630
Fertilizer 25/30/35 okes of 7-11-0	0.575	0.690	0.875
Plant Protection Chemicals	0.150	0.150	0.150
Tractor Costs 3.5 hrs	0.623	0.623	0.623
Contractor costs for harvesting	1.000	1.000	1.000
Maintenance of special machinery	-	-	-
Labour costs of additional hired labour	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	2.978	3.093	3.278
C. Difference (A-B)	1.677	2.892	3.372

TABLE 2a  
Labour Requirements

Product:	Barley (grain)		
Area:	All dryland areas of Cyprus		
Average yield:	180 okes/donum		
Management:	Non-irrigated, mechanised cultivation and harvesting		
Rotation:	Barley-Fallow-Barley		
		Hours per donum	
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 deep ploughing	1	-	1
3 medium ploughings	2.1	-	2.1
Rolling	0.2	-	0.2
<u>Seeding</u>			
Combined drilling (9')	0.4	-	0.2
<u>Cultivating</u>			
Dusting	0.5	-	-
<u>Harvesting</u>			
Tractor driven combine	1.3	-	0.7
Loading by hand	0.12	-	0.04
Transport by trailer	0.03	-	0.03
Total hours / donum	5.65	-	4.27
Labour hours per ± 100 okes yield	± 0.08	-	± 0.04

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	Ø	N	D
Land preparation		0.7		0.7		0.7				1		
Seeding											0.4	
Rolling											0.2	
Dusting	0.5											
Harvesting								1.3				
Loading+transport								0.15				
Total hours/month												
a) Wheat year <sup>1)</sup>	0.5	-	-	-	1.45	0.7	-	-	-	0.6	-	
b) Wheat year <sup>1)</sup>	0.5	-	-	-	-	0.7	-	-	-	0.6	-	
c) Fallow year	-	0.7	-	0.7	-	-	-	-	-	1	-	-

1) If harvesting is done by contractor.

TABLE 2b  
Prices of the 1966 Barley Production<sup>1)</sup>

Purchase Price.	Sale Price.
All quantities: 31.5 mils/oke	All quantities: 27 mils/oke
1) Barley handled by the Grain Commission.	

TABLE 3  
Norm - Calculation of Revenue and Costs

Product:	Sorghum (grain)		
Area:	All areas of Cyprus		
Management:	Irrigated or non-irrigated, mechanised cultivation and harvesting.		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	100 <sup>1)</sup>	200	300
Price mils/oke	28	28	28
Subsidiary Revenue	-	-	-
A. Total Revenue £/don.	2.800	5.600	8.400
<u>Variable Costs</u>			
Seed			
12 okes @ 40 mils	0.480	0.480	0.480
Fertilizer			
-/10/12 okes S.A.	-	0.280	0.336
-/4/5 okes T.S.P.	-	0.152	0.190
Plant Protection	-	-	-
Irrigation <sup>2)</sup> 2,283 tons	- <sup>1)</sup>	?	?
Tractor Costs			
4.8 hrs	0.854	0.854	0.854
Contractor costs for harvesting	1.000	1.000	1.000
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	2.334	2.766 <sup>3)</sup>	2.860 <sup>3)</sup>
C. Difference (A-B)	0.466	2.834	5.540
1) non-irrigated			
2) for water prices see Table 32			
3) excluding water cost			

TABLE 3a  
Labour Requirements

Product:	Sorghum (grain)		
Area:	All areas of Cyprus		
Average yield:	200 okes / donum		
Management:	Irrigated or non irrigated mechanised cultivation and harvesting		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 deep ploughing	1	-	1
3 medium ploughings	2.1	-	2.1
<u>Seeding</u>			
Rolling	0.2	-	0.2
Combined drilling (9')	0.4	-	0.2
<u>Cultivating</u>	-	-	-
<u>Irrigating</u>			
3 irrigations	4.5	-	-
<u>Harvesting</u>			
Tractor driven combine	1.3	-	0.7
Loading by hand	0.12	-	0.06
Transport by trailer	0.04	-	0.02
Total hours / donum	9.66	-	4.28
Labour hours per ± 100 okes yield	± 0.08	-	± 0.04

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7		0.7		0.7							1
Rolling			0.2									
Seeding				0.4								
Cultivating					1.5	1.5	1.5					
Irrigating												
Harvesting												1.46
Total hours/month	-	0.7	-	1.3	1.5	2.2	1.5	-	1.46	1	-	-

TABLE 4  
Norm - Calculation of Revenue and Costs

Product:	Spring-Potatoes		
Area:	All irrigated areas of Cyprus		
Management:	Furrow-irrigated, mechanised land preparation, planting and harvesting by hand		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield tons/donum	2.500	3.500	4.400
Price £/ton	22.4	22.4	22.4
Subsidiary Revenue	-	-	-
A. Total Revenue £/don.	56.000	78.400	98.560
<u>Variable Costs</u>			
Seed			
200/300/400 okes @ 47 mils/oke	9.400	14.100	18.800
Fertilizer			
100/120/140 okes S.A.	2.800	3.360	3.920
60/80/100 okes T.S.P.	2.280	3.040	3.800
Plant Protection			
Chemicals	3.000	3.000	3.000
Irrigation			
640 tons	?	?	?
Tractor costs			
3.98/4.13/4.27 hrs	0.708	0.735	0.760
Maintenance of			
special machinery	-	-	-
Labour costs of additional			
hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	18.188	24.235	30.280
C. Difference (A-B)	37.812	54.165	68.280

TABLE 4a  
Labour Requirements

Product:	Spring Potatoes		
Area:	All irrigated areas of Cyprus		
Average yield:	3.5 tons/donum		
Management:	Furrow irrigated, mechanised land preparation, planting and harvesting by hand.		
Rotation:			
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land Preparation</u>			Hours per donum
1 deep ploughing	1	-	1
1 medium ploughing	0.7	-	0.7
<u>Planting</u>			
Opening furrows	0.3	-	0.3
Planting by hand	4	-	-
Ridging	0.3	-	0.3
<u>Cultivating</u>			
2 weedings	8.8	-	-
1 fertilizing	0.3	-	-
1 ridging	0.3	-	0.3
10 sprays	10.0	-	-
<u>Irrigating</u>			
6 irrigations	9	-	-
<u>Harvesting</u>			
Lifting by plough	1	-	1
Collecting by hand	5.25	-	-
Loading on trailer	1.75	-	-
Transport by trailer	0.53	-	0.53
Total hours / donum	43.23	-	4.13
Labour hours per ± 800 okes yield	± 2	-	± 0.15

Distribution of Labour Requirements (hours/donum)

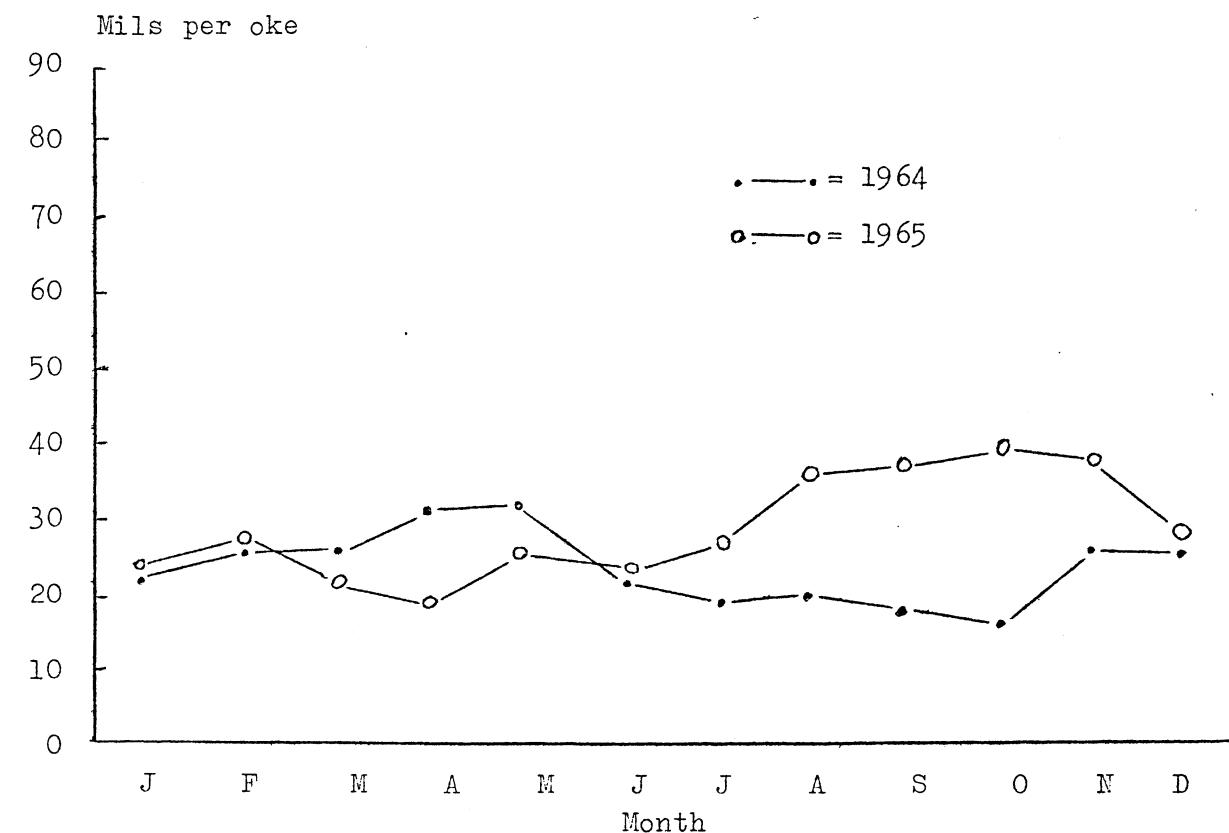
Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	1.7											
Planting		4.6										
Weeding			4.4	4.4								
Fertilizing			0.3									
Ridging				0.3								
Spraying					4.0	4.0	2.0					
Irrigating					1.5	3.0	3.0	1.5				
Harvesting								8.53				
Total hours/month	1.7	6.4	11.7	11.4	12.03	-	-	-	-	-	-	-

TABLE 4b  
Spring Potatoes

Water Requirements and Distribution (tons/donum)

Operation and efficiency	Febr.	March	April	May	Total
Flooding 25% efficiency	31	239	423	591	1284
Furrow 50% efficiency	15	119	211	295	640
Sprinkler 75% efficiency	10	79	141	197	427

TABLE 4c  
Potatoes  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	J	F	M	A	M	J	J	A	S	O	N	D
1964	23	26	26	31	32	22	19	20	18	16	26	25
1965	24	27	22	19	25	23	28	36	37	39	37	28

TABLE 5  
Norm - Calculation of Revenue and Costs

Product:	Autumn Potatoes		
Area:	All irrigated areas of Cyprus		
Management:	Furrow-irrigated, mechanised land preparation planting and harvesting by hand		
<u>Revenue</u>	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield tons/donum	2	3	4
Price £/ton	20	20	20
Subsidiary Revenue	-	-	-
<b>A. Total Revenue £/don.</b>	<b>40.000</b>	<b>60.000</b>	<b>80.000</b>
<u>Variable Costs</u>			
Seed			
200/300/400 okes @ 30 mils/oke	6.000	9.000	12.000
Fertilizer			
80/100/120 okes S.A.	2.240	2.800	3.360
40/60/80 okes T.S.P.	1.520	2.280	3.040
Plant Protection			
Chemicals	3.000	3.000	3.000
Irrigation 912 tons	?	?	?
Tractor costs			
3.90/4.05/4.20 hrs	0.694	0.721	0.748
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
<b>B. Variable Costs £/don.</b>	<b>13.454</b>	<b>17.801</b>	<b>22.148</b>
<b>C. Difference (A-B)</b>	<b>26.546</b>	<b>42.199</b>	<b>57.852</b>

TABLE 5a  
Labour Requirements

Product:	Autumn Potatoes		
Area:	All irrigated areas of Cyprus		
Average yield:	3 tons/donum		
Management:	Furrow irrigated, mechanised land preparation, planting and harvesting by hand		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
1 deep ploughing	1	-	1
1 medium ploughing	0.7	-	0.7
<u>Planting</u>			
Opening furrows	0.3	-	0.3
Planting by hand	4.0	-	-
Ridging	0.3	-	0.3
<u>Cultivating</u>			
2 weedings	8.8	-	-
1 fertilizing	0.3	-	-
1 ridging	0.3	-	0.3
10 sprays	10.0	-	-
<u>Irrigating</u>			
8 irrigations	12.0	-	-
<u>Harvesting</u>			
Lifting by plough	1	-	1
Collecting by hand	4.5	-	-
Loading on the trailer	1.05	-	-
Transport by trailer	0.45	-	0.45
Total hours / donum	44.70	-	4.05
Labour hours per ± 800 okes yield	± 2	-	± 0.15

Distribution of Labour Requirements (hours/donum)

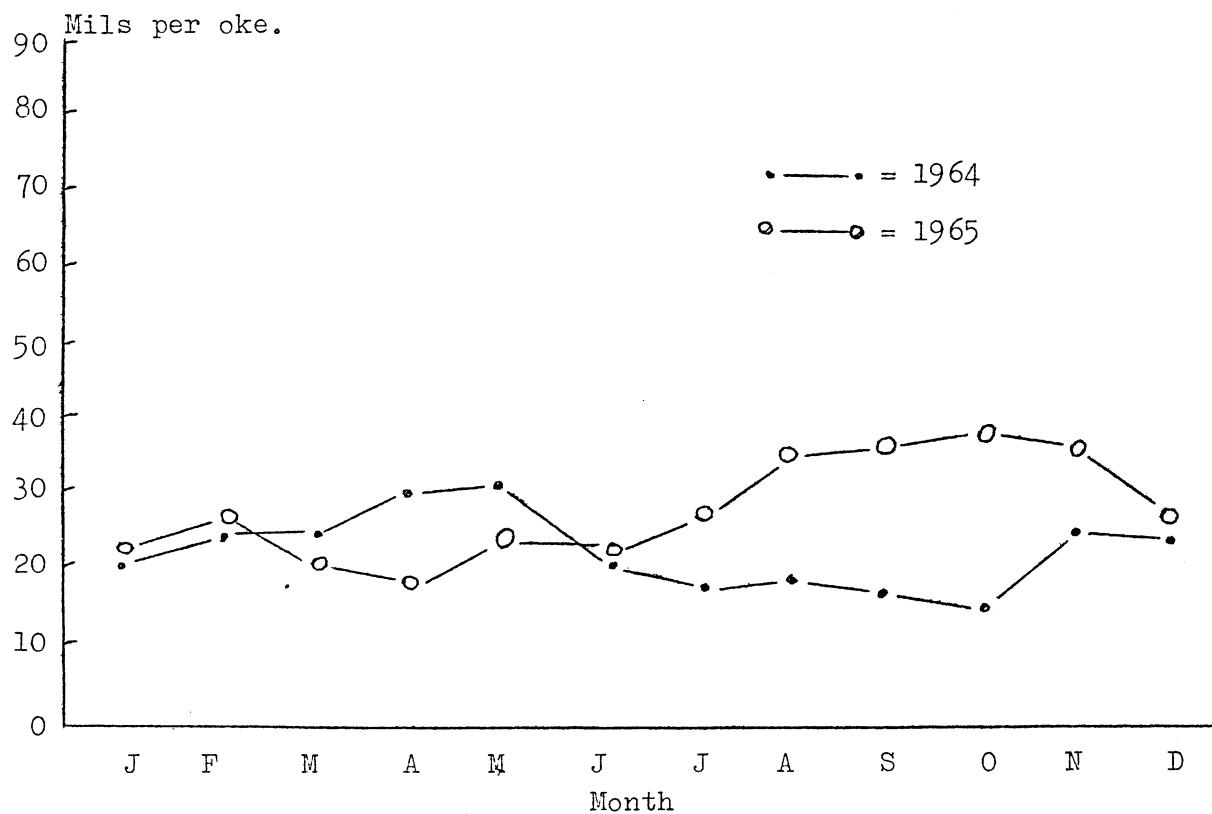
Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation								1.7				
Planting								4.6				
Weeding									4.4	4.4		
Fertilizing									0.3			
Ridging									0.3			
Spraying									4.0	4.0	2.0	
Irrigating									4.5	4.5	3.0	
Harvesting											3.5	3.5
Total hours/month	-	-	-	-	-	-	-	10.8	13.5	11.4	5.5	3.5

TABLE 5b  
Autumn Potatoes

Water Requirements and Distribution (tons/donum)

Operation and efficiency	August	Sept.	Octob.	Nov.	Total
Flooding 25% efficiency	696	593	415	123	1827
Furrow 50% efficiency	348	296	207	61	912
Sprinkler 75% efficiency	232	197	138	41	608

TABLE 5c  
Potatoes  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	1964	23	26	26	31	32	22	19	20	18	16	26	25
1965	24	27	22	19	25	23	28	36	37	39	37	28	

TABLE 6  
Norm - Calculation of Revenue and Costs

Product:	Spring and Autumn Carrots		
Area:	All irrigated areas of Cyprus		
Management:	Flood-irrigated, mechanised cultivation except harvesting		
<u>Revenue</u>			
Yield okes/donum	3.500	4.000	4.500
Price mils/oke	25	25	25
Subsidiary Revenue	-	-	-
A. Total Revenue £/donum	87.500	100.000	112.500
<u>Variable Costs</u>			
Seed			
1 oke	2.500	2.500	2.500
Fertilizer			
30/40/50 okes S.A.	0.840	1.120	1.400
10/15/20 okes T.S.P.	0.380	0.570	0.760
Plant Protection			
Chemicals	4.000	4.000	4.000
Irrigation			
a) Spring carrots 880 tons	?	?	?
b) Autumn carrots 1021 tons	?	?	?
Tractor Costs			
3.73/4.02/4.31 hrs	0.664	0.716	0.767
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	8.384	8.906	9.427
C. Difference (A-B)	79.116	91.094	103.073

TABLE 6a  
Labour Requirements

Product:	Spring and Autumn Carrots		
Area:	All irrigated areas of Cyprus		
Average yield:	4.000 okes/donum		
Management:	Flood irrigated, mechanised cultivation except harvesting		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land Preparation</u>			Hours per donum
1 deep ploughing	1	-	1
1 skim ploughing	0.55	-	0.55
Disc harrowing	0.15	-	0.15
Fertilizing	0.3	-	-
<u>Seeding</u>			
Seed-bed preparation	0.1	0.2	-
Seeding by hand-driller in one row	1.7	-	-
Spraying	1	-	-
<u>Irrigating</u>			
8 irrigations	12	-	-
<u>Harvesting</u>			
Lifting by plough	3	3	-
Collecting and cutting off leaves by hand	76.16	-	-
Loading+transport+unloading	6.8	-	2.32
Total hours/donum	102.76	3.2	4.02
Labour hours per <u>± 1000 okes yield</u>	± 20.7	-	± 0.58

### Distribution of Labour Requirements (hours/donum)

TABLE 6b

Carrots

Water Requirements and Distribution (tons/donum)

Operation and efficiency	Spring Carrots				Autumn Carrots			
	M	A	M	Total	S	O	N	Total
Flooding 25% effic.	209	409	263	881	532	382	107	1021
Furrow 50% effic.	-	204	131	335	266	191	54	511
Sprinkler 75% effic.	70	136	88	294	177	127	36	340

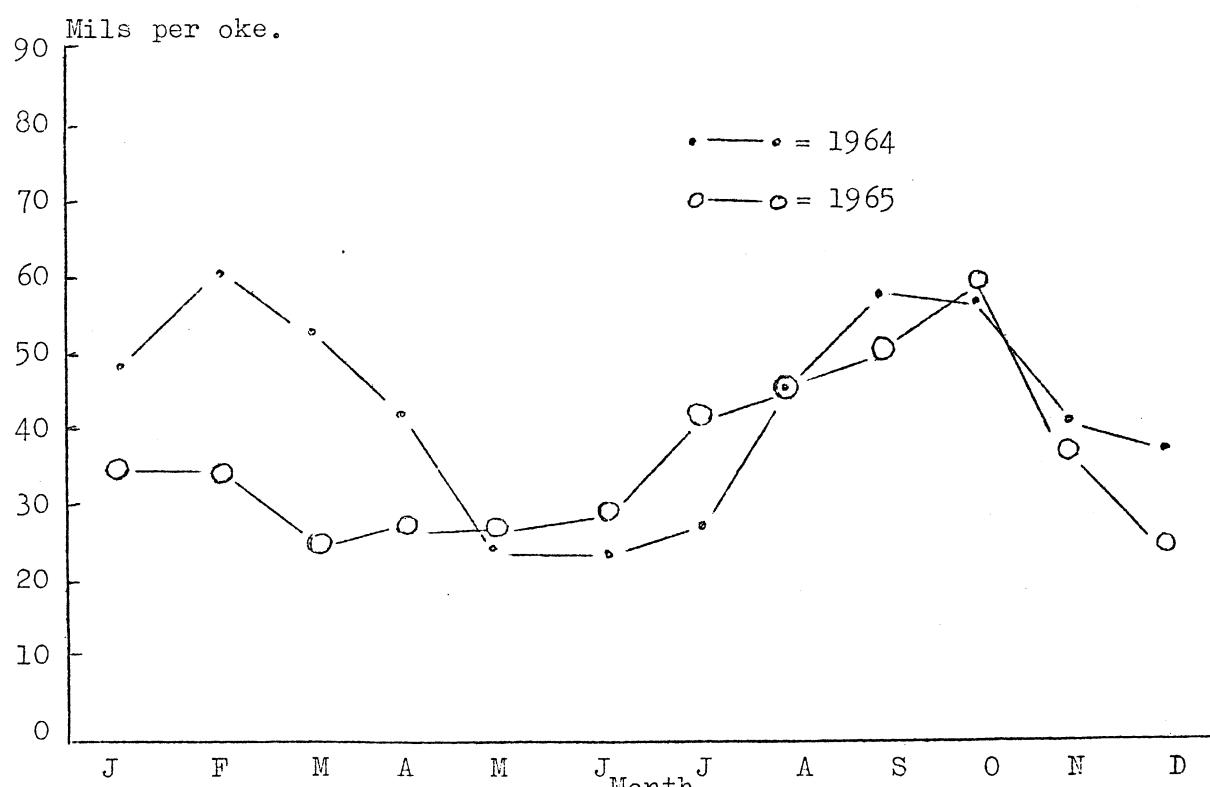
TABLE 6c

Carrots

Monthly Fluctuation of Wholesale Prices

in Nicosia's Market for

the Years 1964 and 1965 (mils/oke)



Year

Year	1964	1965	1964	1965	1964	1965	1964	1965	1964	1965	1964	1965
1964	49	62	54	43	25	25	28	46	58	57	41	38
1965	36	35	26	28	26	29	42	46	52	59	37	25

TABLE 7  
Norm - Calculation of Revenue and Costs

Product:	Onions (from onion sets)		
Area:	All irrigated areas of Cyprus		
Management:	All operations by hand except land preparation and seeding.		
<u>Revenue</u>			
Yield okes/donum	<u>Low</u>	<u>Average</u>	<u>High</u>
3.000	4.000	5.000	
Price mils/oke	45	45	45
 A. Total Revenue £/don.	 135.000	180.000	225.000
<u>Variable Costs</u>			
Onion sets			
90/110/130 okes @ 200 mils/oke	18.000	22.000	26.000
Fertilizer			
40/50/60 okes S.A.	1.120	1.400	1.680
12/16/20 okes T.S.P.	0.456	0.608	0.760
Plant Protection			
Chemicals	1.450	1.450	1.450
Irrigation			
1661 tons	?	?	?
Tractor costs			
1.4 hrs	0.249	0.249	0.249
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
 B. Variable Costs £/don.	 21.275	25.707	30.139
 C. Difference (A-B)	 113.725	154.293	194.861

TABLE 7a  
Labour Requirements

Product:	Onions (from onion sets)			
Area:	All irrigated areas of Cyprus			
Average yield:	4000 okes/donum			
Management:	All operations by hand except land preparation and seeding			
Operation		Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>				
1 medium ploughing	0.7	-	0.7	
1 rotary cultivation	0.5	-	0.5	
1 light harrowing	0.2	-	0.2	
<u>Seeding</u>				
Opening furrows	3	3	-	
Fertilizing	0.3	-	-	
Planting sets by hand	64	-	-	
<u>Irrigating</u>				
8 irrigations	12	-	-	
<u>Cultivating</u>				
1 weeding by hand	20	-	-	
5 sprays	5	-	-	
1 top dressing	0.3	-	-	
1 hoeing	20	-	-	
<u>Harvesting</u>				
Pulling by hand	44	-	-	
Cutting off tops	80	-	-	
Collecting and weighing in bags	16	-	-	
Total hours/donum	266.0	3	1.4	
Labour hours per ± 100 okes yield	± 3.5	-	-	

Distribution of Labour Requirements (hours/donum)

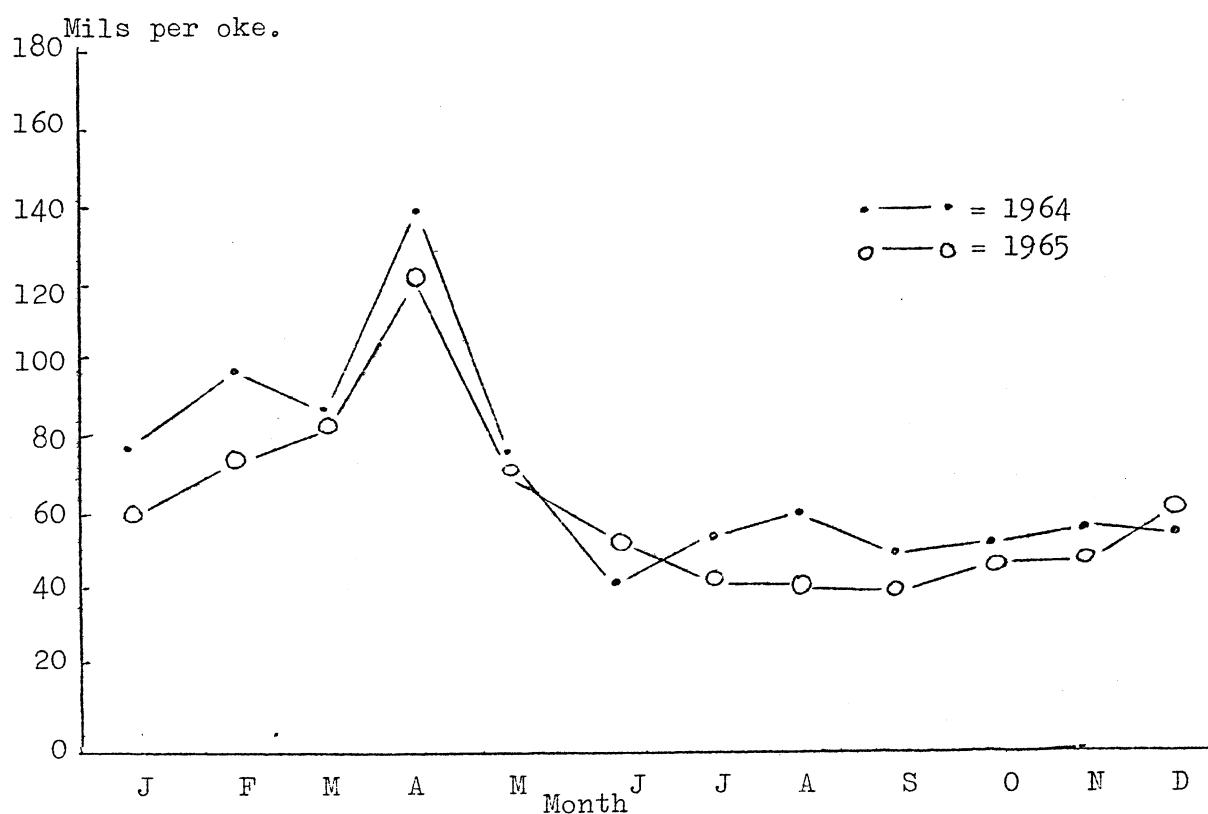
Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7											0.7
Seeding		67										
Fertilizing			0.3									
Weeding				20								
Hoeing					20							
Irrigating				1.5	3	4.5	3					
Sprays					2	2	1					
Top dressing						0.3						
Harvesting							70	70				
Total hours/month	0.7	67.3	1.5	45	6.8	4	70	70	-	0.7	-	-

TABLE 7b  
Onions from onion sets

Water Requirements and Distribution (tons/donum)

Operation and efficiency	March	April	May	June	Total
Flooding 25% efficiency	105	409	509	638	1661
Furrow 50% efficiency	52	204	254	319	822
Sprinkler 75% efficiency	35	136	169	212	552

TABLE 7c  
Onions from onion sets  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	J	F	M	A	M	J	J	A	S	O	N	D
1964	79	99	87	140	76	45	55	64	52	55	59	59
1965	61	75	88	125	74	54	45	44	43	50	51	64

TABLE 7  
Norm - Calculation of Revenue and Costs

Product:	Onions (from seed)		
Area:	All irrigated areas of Cyprus		
Management:	Flood-irrigated, all operations by hand except land preparation and seeding.		
<u>Revenue</u>			
Yield okes/donum	3.000	5.000	7.000
Price mils/oke	45	45	45
A. Total Revenue £/don.	135.000	225.000	315.000
<u>Variable Costs</u>			
Seed			
0.5 okes @ 3000 mils	1.500	1.500	1.500
Fertilizer			
40/50/60 okes S.A.	1.120	1.400	1.680
12/16/20 okes T.S.P.	0.456	0.608	0.760
Plant Protection			
Chemicals	1.450	1.450	1.450
Irrigation			
1661 tons	?	?	?
Tractor Costs			
1.73 hrs	0.308	0.308	0.308
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	4.834	5.266	5.698
C. Difference (A-B)	130.166	219.734	309.302

TABLE 7a  
Labour Requirements

Product:	Onions (from seed)			
Area:	All irrigated areas of Cyprus			
Average yield:	5000 okes/donum			
Management:	All operations by hand except land preparation and seeding			
Operation		Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>				Hours per donum
1 medium ploughing	0.7	-	-	0.7
1 rotary cultivation	0.5	-	-	0.5
1 light-harrowing	0.2	-	-	0.2
<u>Seeding</u>				
Seeding by machine in 6 rows	0.33	-	-	0.33
Fertilizing	0.3	-	-	-
<u>Irrigating</u>				
8 irrigations	12	-	-	-
<u>Cultivating</u>				
5 sprays	5	-	-	-
1 weeding by hand	20	-	-	-
1 top dressing	0.3	-	-	-
1 hoeing	20	-	-	-
<u>Harvesting</u>				
Pulling by hand	55	-	-	-
Cutting off tops	100	-	-	-
Collecting and weighing in bags	20	-	-	-
Total hours/donum	234.33	-	-	1.73
Labour hours per ± 100 okes yield	± 3.5	-	-	-

Distribution of Labour Requirements (hours/donum)

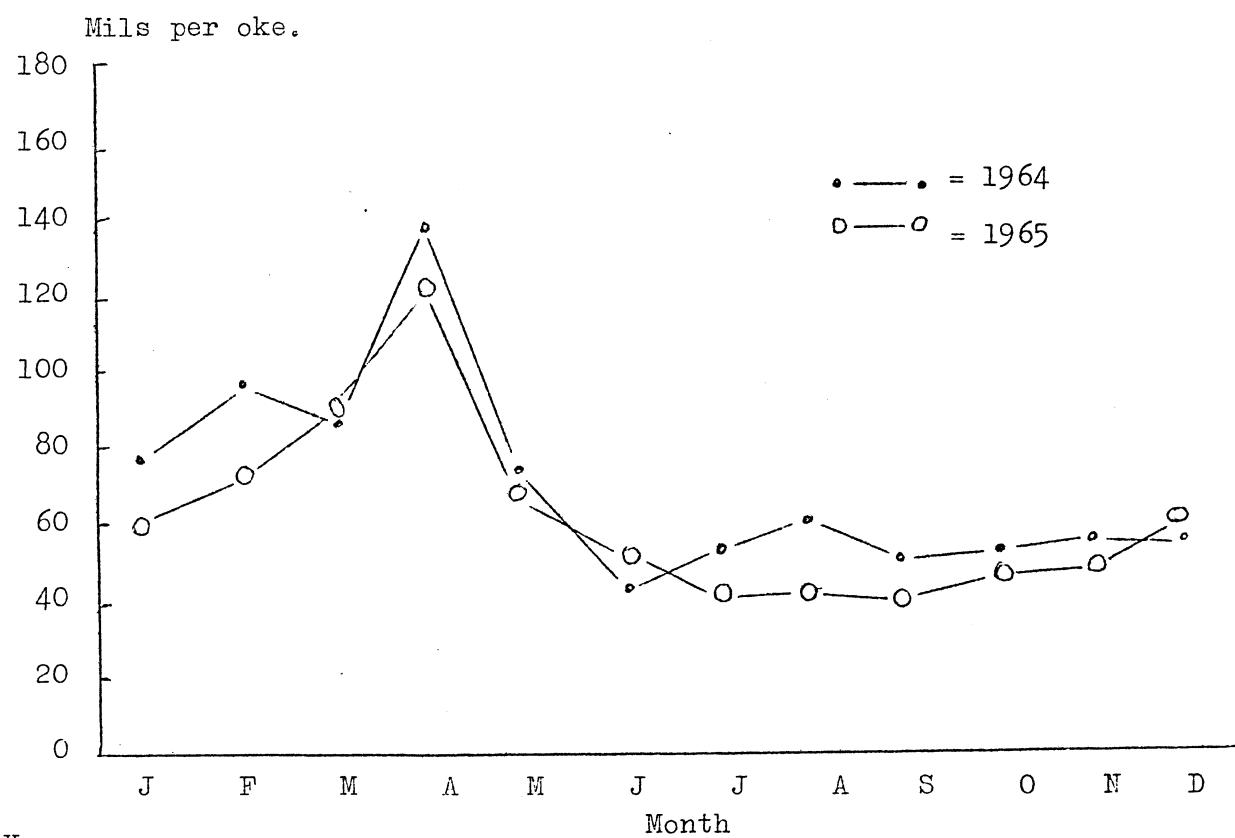
Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7											0.7
Seeding		0.33										
Fertilizing		0.3										
Weeding			20									
Hoeing			20									
Irrigating			1.5	3	4.5	3						
Sprays				2	2	1						
Top dressing					0.3							
Harvesting						90	85					
Total hours/month	0.7	0.63	1.5	45	6.8	4	90	85	-	0.7	-	-

TABLE 7b  
Onions from seed

Water Requirements and Distribution (tons/donum)

Operation and efficiency	March	April	May	June	Total
Flooding 25% efficiency	105	409	509	638	1661
Furrow 50% efficiency	52	204	254	319	829
Sprinkler 75% efficiency	35	136	169	212	552

TABLE 7c  
Onions from seed  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	J	F	M	A	M	J	J	A	S	O	N	D
1964	79	99	87	140	76	45	55	64	52	55	59	59
1965	61	75	88	125	74	54	45	44	43	50	51	64

TABLE 8  
Norm - Calculation of Revenue and Costs

Product:	Tomatoes		
Area:	All suitable areas of Cyprus		
Management:	Furrow irrigated, all operations by hand except land preparation		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	3.200	4.000	4.800
Price mils/oke	50	50	50
A. Total Revenue £/don.	160.000	200.000	240.000
<u>Variable Costs</u>			
Seed			
0.1 oke @ 1000 mils	0.100	0.100	0.100
1)			
Fertilizer			
45/55/65 okes S.A.	1.260	1.540	1.820
12/16/20 okes T.S.P.	0.456	0.608	0.760
Plant Protection			
Chemicals	2.000	2.000	2.000
Irrigation			
1567 tons	?	?	?
Tractor Costs			
18.1/22.1/26.1 hrs	3.222	3.738	4.646
Maintenance of			
special machinery	-	-	-
Labour costs of additional			
hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	7.038	7.986	9.326
C. Difference (A-B)	152.962	192.014	230.674

TABLE 8a  
Labour Requirements

Product:	Tomatoes		
Area:	All suitable areas of Cyprus		
Average yield:	4000 okes/donum		
Management:	Furrow irrigated, all operations by hand except land preparation		
Operation		Hours per donum	
	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
3 medium ploughings	2.1	-	2.1
Opening furrows	1.0	1	-
<u>Transplanting</u>			
Growing transplants	5	-	-
Transplanting 1400 plants	7	-	-
Manuring + fertilizing	2	-	-
<u>Irrigating</u>			
40 irrigations	60	-	-
<u>Cultivating</u>			
3 hoeings	27	-	-
Covering with soil	14	-	-
Sheltering with branches	32	-	-
10 top-dressings	3	-	-
15 sprays	15	-	-
<u>Harvesting</u>			
Picking and sorting by hand	200	-	-
Loading transporting and unloading	32	-	20
Total hours/don.	400.1	1	22.1
Labour hours per ± 100 okes yield	± 5.8	-	± 0.5

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation									2.1	1		
Transplanting									5	9		
Irrigating	3	6	7.5	9	10.5	10.5			6	7.5		
Hoeing	9								9	9		
Covering up									14			
Sheltering									32			
Top dressing	0.3	0.3	0.6	0.6	0.6	0.6	0.3			0.3		
Spraying	2	1	2	1	2	2	2		1	1	1	
Picking, sorting	3	7	15	30	45	50	40	10				
Loading, etc.	0.5	1.1	2.4	4.8	7.2	8	6.4	1.6				
Total hours/month	14.5	12.4	25.7	43.9	63.8	71.1	59.2	11.6	7.1	17	318	42

TABLE 8b

Tomatoes

Water Requirements and Distribution (tons/donum)

Operation and efficiency	O	E	F	M	A	M	J	J	Total
Flooding 25% effic.	-	-	-	-	-	-	-	-	-
Furrow 50% effic.	60	211	30	61	211	295	342	357	1567
Sprinkler 75% effic.	80	141	40	82	141	197	228	238	1147

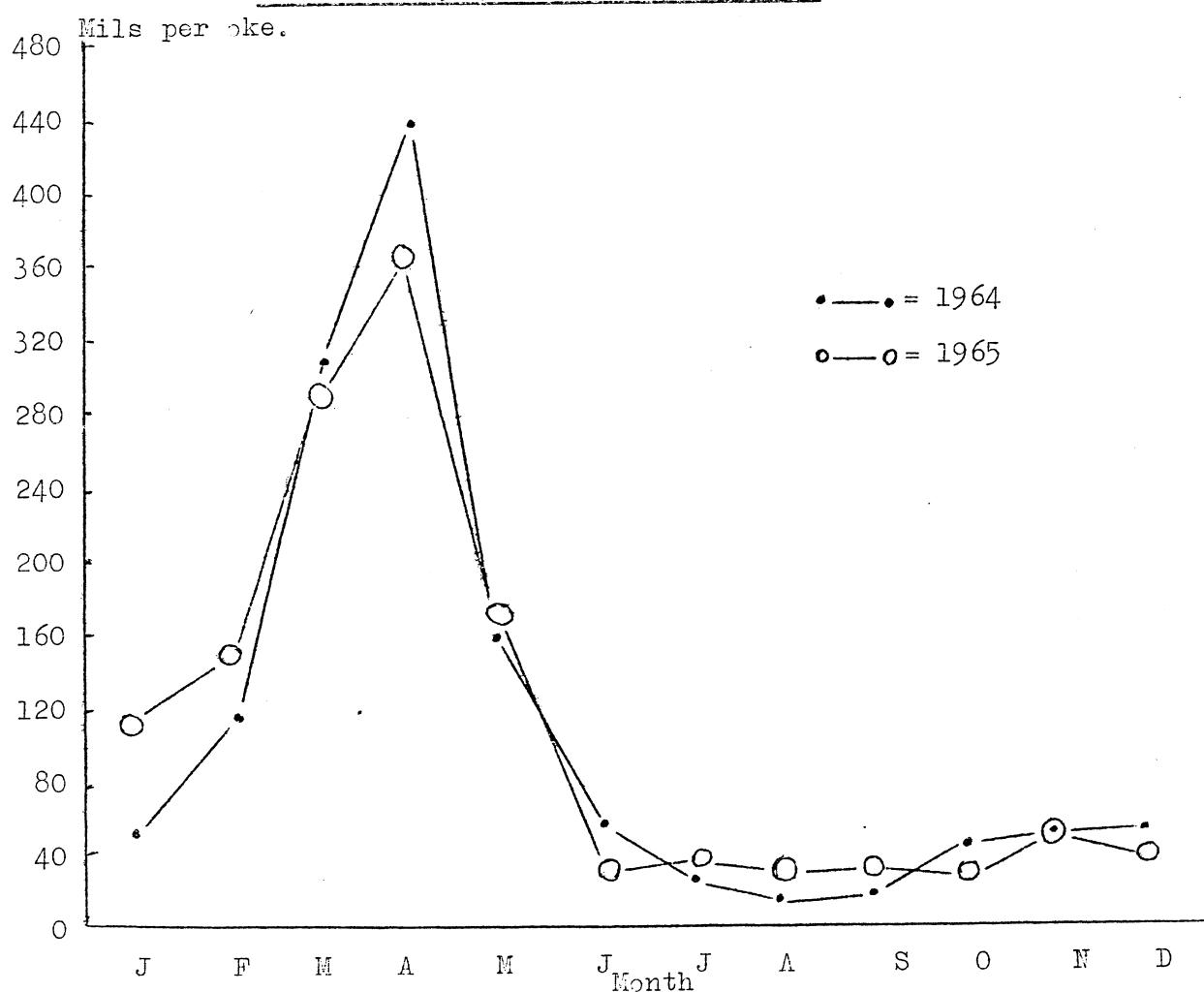
TABLE 8c

Tomatoes

Monthly Fluctuation of Wholesale Prices

in Nicosia's Market for

the Years 1964 and 1965 (mils/oke)



Year

Year	1964	1965	1964	1965	1964	1965	1964	1965	1964	1965	1964	1965
1964	54	114	311	298	440	368	161	165	62	37	30	34
1965	114	157	211	298	161	368	30	37	19	30	22	34

TABLE 9

Norm - Calculation of Revenue and Costs

Product:	Haricot-beans		
Area:	All irrigated areas of Cyprus		
Management:	Furrow irrigated, all operations by hand except land preparation, seeding and transportation.		
<u>Revenue</u>			
Yield okes/donum	Low	Average	High
	1.000	1.500	2.000
Price mils/oke	70	70	70
A. Total Revenue £/don.	70.000	105.000	140.000
<u>Variable Costs</u>			
Seed			
10 okes @ 200 mils	2.000	2.000	2.000
Fertilizer			
25/30/35 okes S.A.	0.700	0.840	0.980
10/15/20 okes T.S.P.	0.380	0.570	0.760
Plant Protection	1.200	1.200	1.200
Irrigation			
460 tons	?	?	?
Tractor Costs			
5.23/8.23/10.48 hrs	0.931	1.465	1.865
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	5.211	6.075	6.805
C. Difference (A-B)	64.789	98.925	133.195

TABLE 9a  
Labour Requirements

Product:	Haricot-beans		
Area:	All irrigated areas of Cyprus		
Average yield:	1500 okes/donum		
Management:	Furrow irrigated, all operations by hand except land preparation seeding and transportation		
Operation		Manual Labour	Animal Traction
		Hours per donum	Tractor Traction
<u>Land preparation</u>			
1 medium ploughing		0.7	-
1 disc-harrowing		0.25	-
1 light-harrowing		0.2	-
Opening furrows		1	1
<u>Seeding</u>			
Seeding by machine		0.33	-
Fertilizing		0.3	-
<u>Irrigating</u>			
6 irrigations		9	-
<u>Cultivating</u>			
3 weedings by hand		30	-
3 sprays		3	-
<u>Harvesting</u>			
Picking by hand and putting in bags	234	-	-
Loading + unloading	3	-	-
Transportation	3.75	-	3.75
<u>Total hours/donum</u>	285.53	1	5.23
<u>Labour hours per</u> <u>± 100 okes yield</u>	<u>± 16.05</u>	-	<u>± 0.45</u>

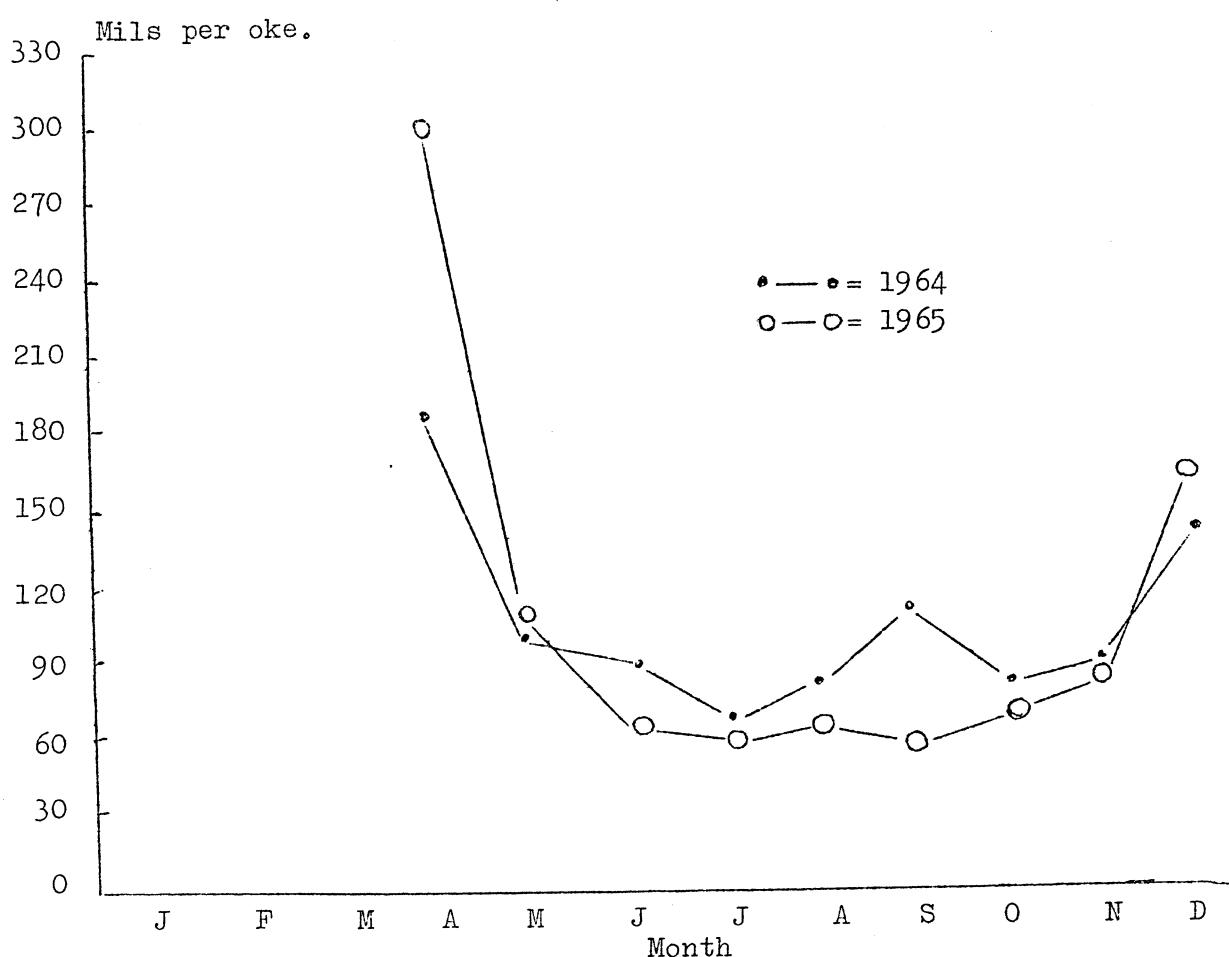
Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7	0.25	1.2									
Seeding			0.33									
Fertilizing			0.3									
Irrigating				6		3						
Spraying					2		1					
Weeding					30							
Harvesting						150	84					
Loading, unloading						2	1					
Transportation						2.50	1.25					
<u>Total hours/month</u>	0.7	0.25	1.83	38	158.50	86.25	-	-	-	-	-	-

TABLE 9b  
Haricot-beans  
 Water Requirements and Distribution (tons/donum)

Operation and efficiency	April	May	Total
Flooding 25% efficiency	409	509	918
Furrow 50% efficiency	205	255	460
Sprinkler 75% efficiency	136	170	206

TABLE 9c  
Haricot-beans  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	—	—	—	196	99	84	64	78	103	73	86	137
1964	-	-	-	196	99	84	64	78	103	73	86	137
1965	-	-	-	300	114	63	59	62	55	67	80	161

TABLE 10  
Norm - Calculation of Revenue and Costs

Product:	Peas		
Area:	All irrigated areas of Cyprus		
Management:	Furrow irrigated, all operations by hand except land preparation, seeding and transportation		
<u>Revenue</u>			
		<u>Low</u>	<u>Average</u>
Yield okes/donum	500	1000	1500
Price mils/oke	65	65	65
A. Total Revenue £/don.	32.500	65.000	97.500
<u>Variable Costs</u>			
Seed			
9 okes @ 200 mils	1.800	1.800	1.800
Fertilizer			
25/30/35 okes S.A.	0.700	0.840	0.980
10/15/20 okes T.S.P.	0.380	0.570	0.760
Plant Protection	1.200	1.200	1.200
Irrigation			
298 tons	?	?	?
Tractor Costs			
2.43/3.98/5.33 hrs	0.432	0.708	0.949
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	4.512	5.118	5.689
C. Difference (A-B)	27.988	59.882	91.811

TABLE 10a  
Labour Requirements

Product:	Peas		
Area:	All irrigated areas of Cyprus		
Average yield:	1000 okes/donum		
Management:	Furrow irrigated, all operations by hand except land preparation seeding and transportation		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
1 medium ploughing	0.7	-	0.7
1 disc-harrowing	0.25	-	0.25
1 light-harrowing	0.2	-	0.2
Opening furrows	1	1	-
<u>Seeding</u>			
Seeding by machine	0.33	-	0.33
Fertilizing	0.3	-	-
<u>Irrigating</u>			
6 irrigations	9	-	-
<u>Cultivating</u>			
3 weedings by hand	30	-	-
3 sprays	3	-	-
<u>Harvesting</u>			
Picking by hand	100	-	-
Loading + unloading	0.6	-	-
Transportation	2.5	-	2.5
Total hours/donum	147.88	1	3.98
Labour hours per $\pm$ 100 okes yield	$\pm$ 10.31	-	$\pm$ 0.31

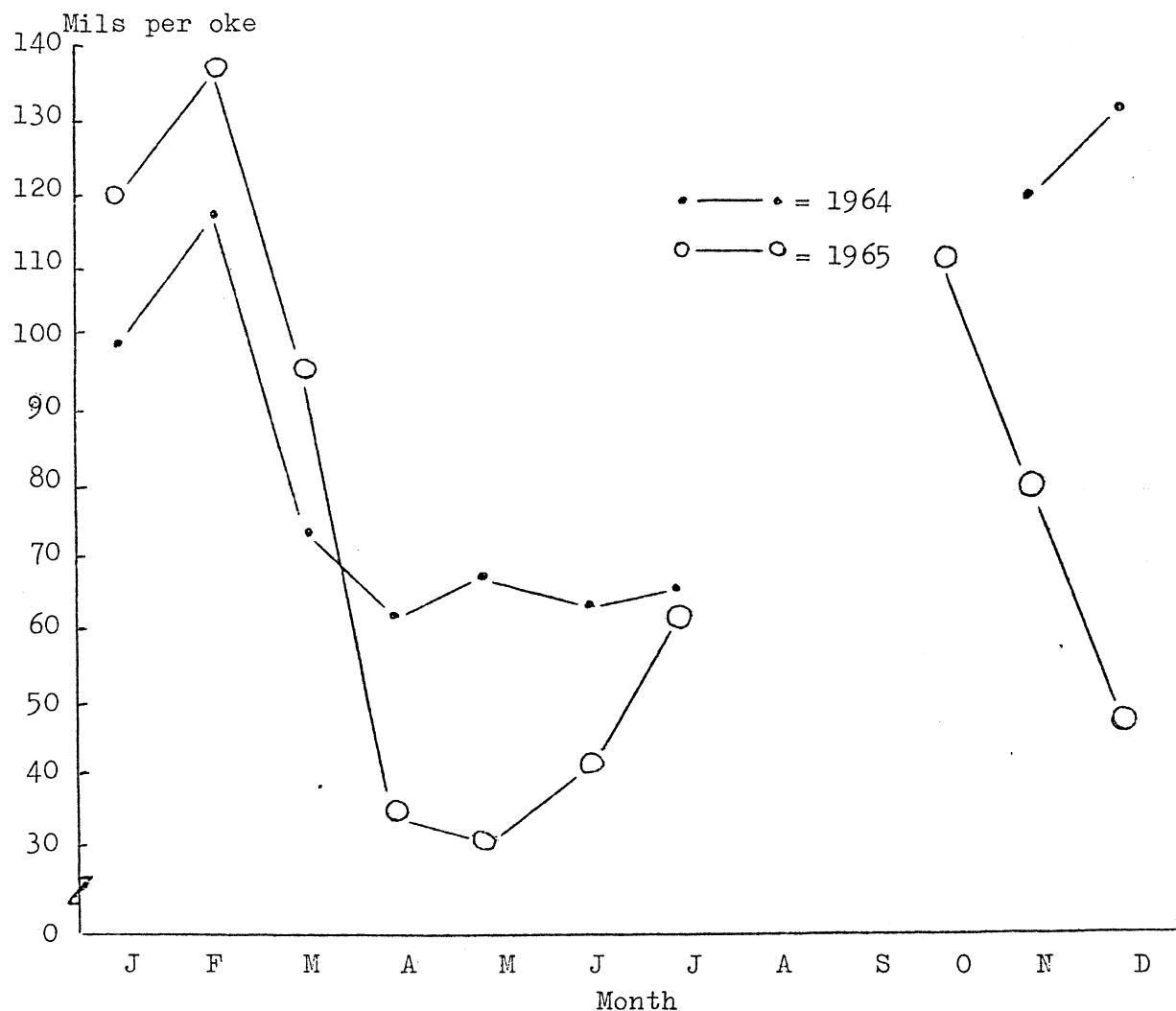
Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation									2.15			
Seeding										0.33		
Fertilizing										0.3		
Irrigating											6	3
Weeding											30	
Spraying											2	1
Harvesting												103.1
Total hours/month	-	-	-	-	-	-	-	-	2.15	0.63	38	107.1

TABLE 10b  
Peas  
 Water Requirements and Distribution (tons/donum)

Operation and efficiency	Spring Peas			Autumn Peas		
	March	April	Total	Octob.	Novemb	Total
Flooding 25% efficiency	210	409	619	382	107	489
Furrow 50% efficiency	105	204	309	191	107	298
Sprinkler 75% efficiency	70	136	206	127	35	162

TABLE 10c  
Peas  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year												
1964	101	118	75	63	68	64	66	-	-	-	120	132
1965	122	139	96	36	32	43	63	-	-	111	80	48

TABLE 11  
Norm - Calculation of Revenue and Costs

Product:	Water Melons		
Area:	All irrigated areas of Cyprus		
Management:	Flood irrigated, manual labour except land preparation		
<u>Revenue</u>			
Yield okes/donum	2.000	3.500	5.000
Price mils/oke	13	13	13
A. Total Revenue £/donum	26.000	45.500	65.000
<u>Variable Costs</u>			
Seed			
0.25 okes @ 1.750 mils	0.438	0.438	0.438
Fertilizer			
100/120/140 okes S.A.	2.800	3.360	3.920
40/50/60 okes T.S.P.	1.520	1.900	2.280
Plant Protection			
Chemicals	0.800	0.800	0.800
Irrigation			
2007 tons	?	?	?
Tractor Costs			
1.7 hrs	0.303	0.303	0.303
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	5.861	6.801	7.741
C. Difference (A-B)	20.139	38.699	57.259

TABLE 11a  
Labour Requirements

Product:	Water Melons			
Area:	All Irrigated areas of Cyprus			
Average yield:	3500 okes/donum			
Management:	Flood irrigated, manual labour except land preparation			
Operation		Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>				
1 medium ploughing	0.7	-		0.7
1 rotary cultivation	0.5	-		0.5
Opening furrows	1.0	1		-
<u>Seeding</u>				
Seeding by hand	8.0	-		-
Fertilizing	0.3	-		-
<u>Irrigating</u>				
11 irrigations	16.5	-		-
<u>Cultivating</u>				
2 top dressings	0.6	-		-
Covering plants	8.0	-		0.5
Pruning	1.0	-		-
16 sprayings	6.0	-		-
<u>Harvesting</u>				
Picking by hand	17.5	-		-
<u>Total hours /donum</u>	60.1	1		1.7
<u>Labour hours per</u> <u>± 100 okes yield</u>	<u>± 0.5</u>	-		-

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation			0.5	1.0								0.7
Seeding				8.0								
Fertilizing				0.3								
Irrigating				1.5	3.0	3.0	4.5	3.0	1.5			
Top dressing					0.3	0.3						
Covering plants						8.0						
Pruning						1.0						
Sprayings						2.0	2.0	2.0				
Harvesting								2.0	10.0	5.5		
<u>Total hours/month</u>	-	-	0.5	10.8	14.3	5.3	8.5	13.0	7.0	-	-	0.7

TABLE 11b

Water - Melons

Water Requirements and Distribution (tons/donum)

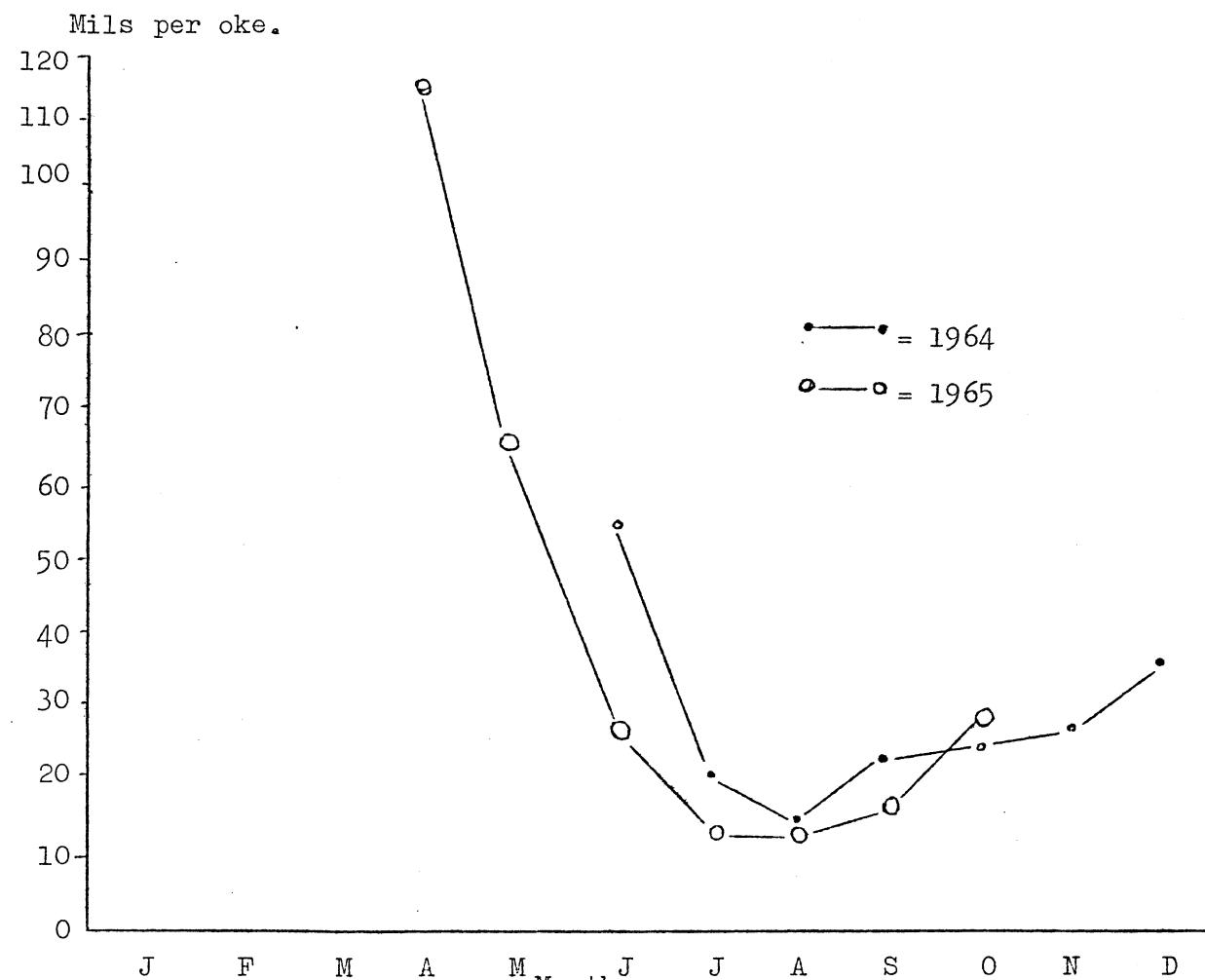
Operation and efficiency	March	April	May	June	July	Total
Flooding 25% efficiency	107	409	509	638	343	2006
Furrow 50% efficiency	53	204	254	319	171	1001
Sprinkler 75% efficiency	35	136	169	212	114	666

TABLE 11c

Water - Melons

Monthly Fluctuation of Wholesale Prices

in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	J	F	M	A	M	J	J	A	S	O	N	D
1964	-	-	-	-	-	55	21	14	23	24	26	25
1965	-	-	-	115	66	27	13	13	16	18	-	-

TABLE 12  
Norm - Calculation of Revenue and Costs

Product:	Melons		
Area:	All irrigated areas of Cyprus		
Management:	Flood irrigated, manual labour except land preparation		
<u>Revenue</u>			
Yield okes/donum	<u>Low</u> 2000	<u>Average</u> 3000	<u>High</u> 4000
Price mils/oke	20	20	20
A. Total Revenue £/don.	40.000	60.000	80.000
<u>Variable Costs</u>			
Seed			
0.25 okes @ 2.250 mils	0.563	0.563	0.563
Fertilizer			
100/120/140 okes S.A.	2.800	3.360	3.920
40/50/60 okes T.S.P.	1.520	1.900	2.280
Plant Protection			
Chemicals	0.800	0.800	0.800
Irrigation			
2007 tons	-	-	-
Tractor Costs			
1.7 hrs	0.303	0.303	0.303
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don,	5.986	6.926	7.866
C. Difference (A-B)	34.014	53.074	72.134

TABLE 12a  
Labour Requirements

Product:	Melons			
Area:	All irrigated areas of Cyprus			
Average yield:	3000 okes/donum			
Management:	Flood irrigated, manual labour except land preparation.			
		Hours per donum		
Operation		Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>				
1 medium ploughing		0.7	-	0.7
1 rotary cultivation		0.5	-	0.5
Opening furrows		1.0	1.0	-
<u>Seeding</u>				
Seeding by hand		8.0	-	-
Fertilizing		0.3	-	-
<u>Irrigating</u>				
11 irrigations		16.5	-	-
<u>Cultivating</u>				
2 top dressings		0.6	-	-
Covering plants		8.0	-	0.5
Pruning		1.0	-	-
6 sprayings		6.0	-	-
<u>Harvesting</u>				
Picking by hand		15.0	-	-
Total hours/month		67.6	1.0	1.7
Labour hours per ± 100 okes yield		± 0.5	-	-

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation			0.5	1.0								0.7
Seeding				8.0								
Fertilizing					10.3							
Irrigating					1.5	3.0	3.0	4.5	3.0	1.5		
Top dressing					0.3	0.3						
Covering plants						8.0						
Pruning						1.0						
Spraying						2.0	2.0	2.0				
Picking by hand							2.0	4.0	4.5	4.5		
Total hours/month	-	-	0.5	20.8	14.3	7.3	10.5	7.5	6.0	-	-	0.7

TABLE 12b

Melons

Water Requirements and Distribution (tons/donum)

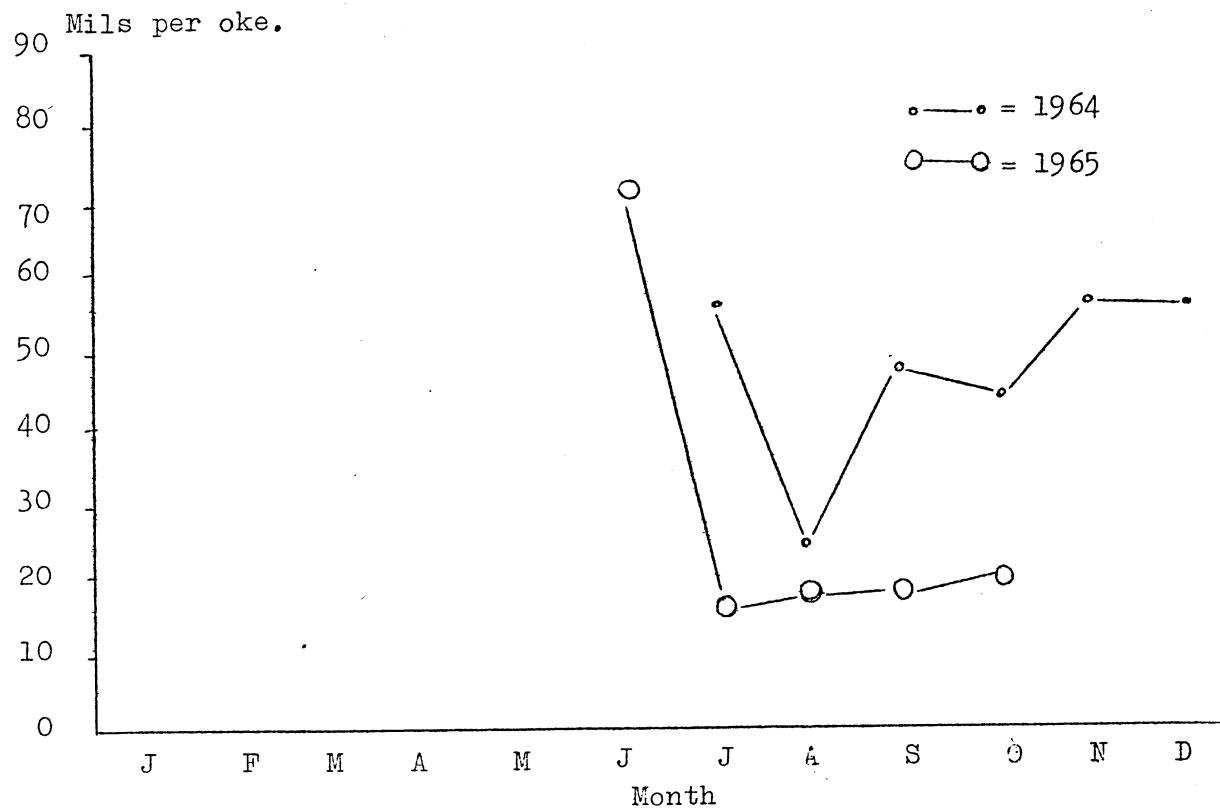
Operation and efficiency	March	April	May	June	July	Total
Flooding 25% efficiency	107	409	509	638	343	2006
Furrow 50% efficiency	53	204	254	319	171	1001
Sprinkler 75% efficiency	35	136	169	212	114	666

TABLE 12c

Melons

Monthly Fluctuation of Wholesale Prices

in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year

1964	-	-	-	-	-	-	56	25	49	46	58	57
1965	-	-	-	-	-	-	72	17	19	19	22	-

TABLE 13  
Norm - Calculation of Revenue and Costs

Product:	Early Cucumbers		
Area:	All suitable areas of Cyprus		
Management:	Furrow irrigated, under polyethelene covers, mechanised cultivation, harvesting by hand.		
<u>Revenue</u>			
Yield okes/donum	<u>Low</u>	<u>Average</u>	<u>High</u>
2000	2500	4000	
Price mils/oke	80	80	80
A. Total Revenue £/don.	160.000	200.000	320.000
<u>Variable Costs</u>			
Seed			
0.25 okes @ 3.250 mils	0.812	0.812	0.812
Fertilizer			
40/50/60 okes S.A.	1.120	1.400	1.680
12/16/20 okes T.S.P.	0.456	0.608	0.760
Plant Protection			
Chemicals	0.600	0.600	0.600
Irrigation			
831 tons	?	?	?
Tractor Costs			
3.6/4.1/4.6 hrs	0.641	0.730	0.819
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs			
Polyethelene cover and wire	45.000	45.000	45.000
B. Variable Costs £/don.	48.629	49.150	49.671
C. Difference (A-B)	111.371	150.850	270.329

TABLE 13a  
Labour Requirements

Product:	Early Cucumbers		
Area:	All suitable areas of Cyprus		
Average yield:	2500 okes/donum		
Management:	Furrow irrigated, under polyethelene covers mechanised cultivation, harvesting by hand.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 medium ploughing	0.7	-	0.7
1 rotary cultivation	0.5	-	-
Opening furrows	1.0	1.0	-
<u>Seeding</u>			
Marking rows	0.3	-	0.3
Seeding by one row hand-machine	0.4	-	-
Covering with polythelene covers	1.0	-	-
<u>Irrigating</u>			
24 irrigations	36.0	-	-
<u>Cultivating</u>			
Hoeing by hand	18.0	-	-
6 sprays	6.0	-	-
Covering+uncovering plants	20.0	-	-
<u>Harvesting</u>			
Collecting by hand	89.5	-	-
Loading + unloading	3.6	-	1.8
Transportation	1.5	-	0.75
<u>Total hours /donum</u>	178.5	1.0	3.55
<u>Labour hours per</u> <u>± 100 okes yield</u>	<u>± 3.78</u>	-	<u>± 0.1</u>

Distribution of Labour Requirements (hours/donum)

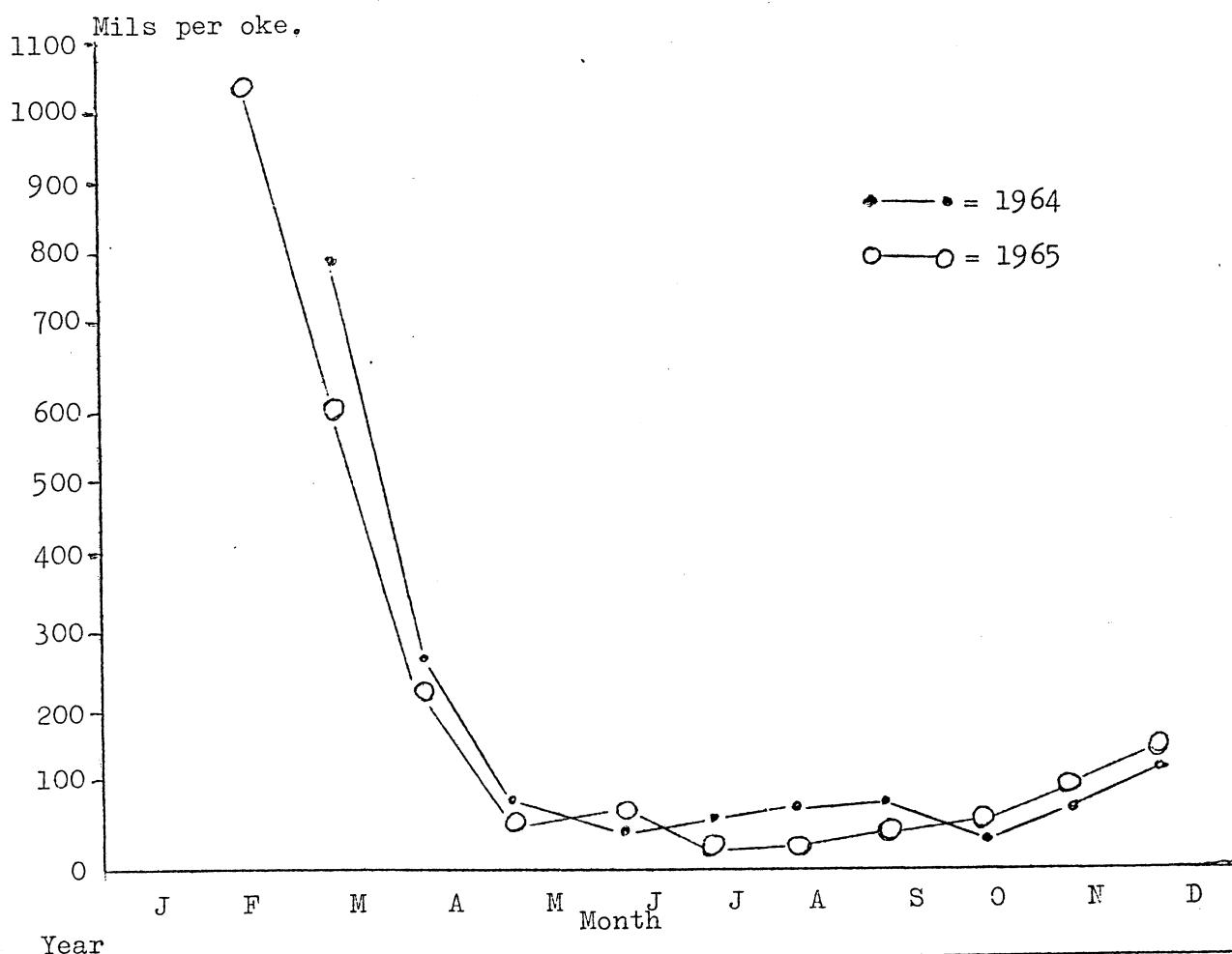
Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation											2.2	
Seeding											1.7	
Hoeing by hand											6.0	12.0
Irrigating					6.0	7.5	10.5	12.0				
Spraying					1.0	2.0	2.0	1.0				
Covering+uncovering					5.0	5.0					5.0	5.0
Harvesting					2.0	3.9	11.3	30.2	30.2	17.0		
<u>Total hours/month</u>	7.0	9.9	19.3	39.7	41.7	29.0	-	-	-	2.2	12.7	17.0

TABLE 13b  
Early Cucumbers

Water Requirements and Distribution (tons/donum)

Operation and efficiency	March	April	May	June	Total
Flooding 25% efficiency	-	-	-	-	-
Furrow 50% efficiency	52	204	254	319	822
Sprinkler 75% efficiency	35	136	169	212	552

TABLE 13c  
Early Cucumbers  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



	J	F	M	A	M	J	J	A	S	O	N	D
1964	-	-	820	284	71	36	40	64	70	41	65	118
1965	-	1050	620	237	61	56	26	24	43	48	96	142

TABLE 14  
Norm - Calculation of Revenue and Costs

Product:	Egg-plants (2 years utilisation)		
Area:	All irrigated coastal areas of Cyprus		
Management:	Furrow - irrigated, all operations by hand except land preparation		
<u>Revenue</u>			
Yield okes/donum 1st year:	3000	4000	5000
2nd year:	4000	6000	8000
Price mils/oke	32	32	32
A. Total Revenue £/don. 1st year	96.000	128.000	160.000
2nd year	128.000	192.000	256.000
<u>Variable Costs</u>			
Seed 0.3 oke @ 1.500 mils <sup>+) </sup>	0.500	0.500	0.500
Fertilizer 120/140/160 okes 6-8-8	3.120	3.640	4.160
160/200/240 okes N.A.	4.640	5.800	6.960
Plant Protection Chemicals	2.000	2.000	2.000
Irrigation 2671 tons	?	?	?
Tractor Costs 2.1 hrs <sup>+) </sup>	0.374	0.374	0.374
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don. 1st year	10.634	12.314	13.994
2nd year	9.760	11.440	13.120
C. Difference (A-B)	1st year	85.366	115.686
	2nd year	118.240	180.560
<sup>+) First year only.</sup>			

TABLE 14a  
Labour Requirements

Product:	Egg-plants (2 years utilisation)					
Area:	All irrigated coastal areas of Cyprus					
Average yield:	1st year 4000 okes/donum 2nd year 6000 okes/donum					
Management:	Furrow irrigated, all operations by hand except land preparation.					
Hours per donum						
Operation	Manual Labour		Animal Traction		Tractor Traction	
	1st year	2nd year	1st year	2nd year	1st year	2nd year
<u>Land preparation</u>						
3 medium ploughings	2.1	-	-	-	2.1	-
Opening furrows	1.0	-	2.0	-	-	-
Preparing furrows by hand	16.0	-	-	-	-	-
<u>Transplanting</u>						
Growing transplants	5.0	-	-	-	-	-
Transplanting 1500 plants	7.5	-	-	-	-	-
Manuring+fertilizing	2.0	2.0	-	-	-	-
<u>Irrigating</u>						
50 irrigations	75.0	75.0	-	-	-	-
<u>Cultivating</u>						
1 hoeing	9.0	-	-	-	-	-
1 hand cultivating	-	18.0	-	-	-	-
Covering with soil	14.0	14.0	-	-	-	-
6 top-dressings	1.8	1.8	-	-	-	-
16 sprays	32.0	32.0	-	-	-	-
Pruning	-	8.0	-	-	-	-
<u>Harvesting</u>						
Picking and sorting by hand (sale from field)	80.0	120.0	-	-	-	-
Total hours/donum	245.4	270.8	1.0	-	2.1	-
Labour hours per ± 100 okes yield	± 2.0	± 2.0	-	-	-	-

Continuation: TABLE 14a

First Year

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7	0.7	0.7	17								
Transplanting			2.5	2.5	9.5							
Irrigating					6.0	7.5	10.5	12	15.0	12.0	7.5	4.5
Hoeing					9.0							
Covering with soil						14.0						
Top dressing						0.3	0.3	0.3	0.3	0.3	0.3	
Spraying						4.0	6.0	6.0	6.0	6.0	4.0	
Harvesting						2.0	10.0	16	16	16	12	8.0
Total hours/month	0.7	3.2	3.2	41.5	27.8	26.8	34.3	37.3	34.3	23.8	12.5	-

Second Year

Distribution of Labour Requirements (hours/donum)

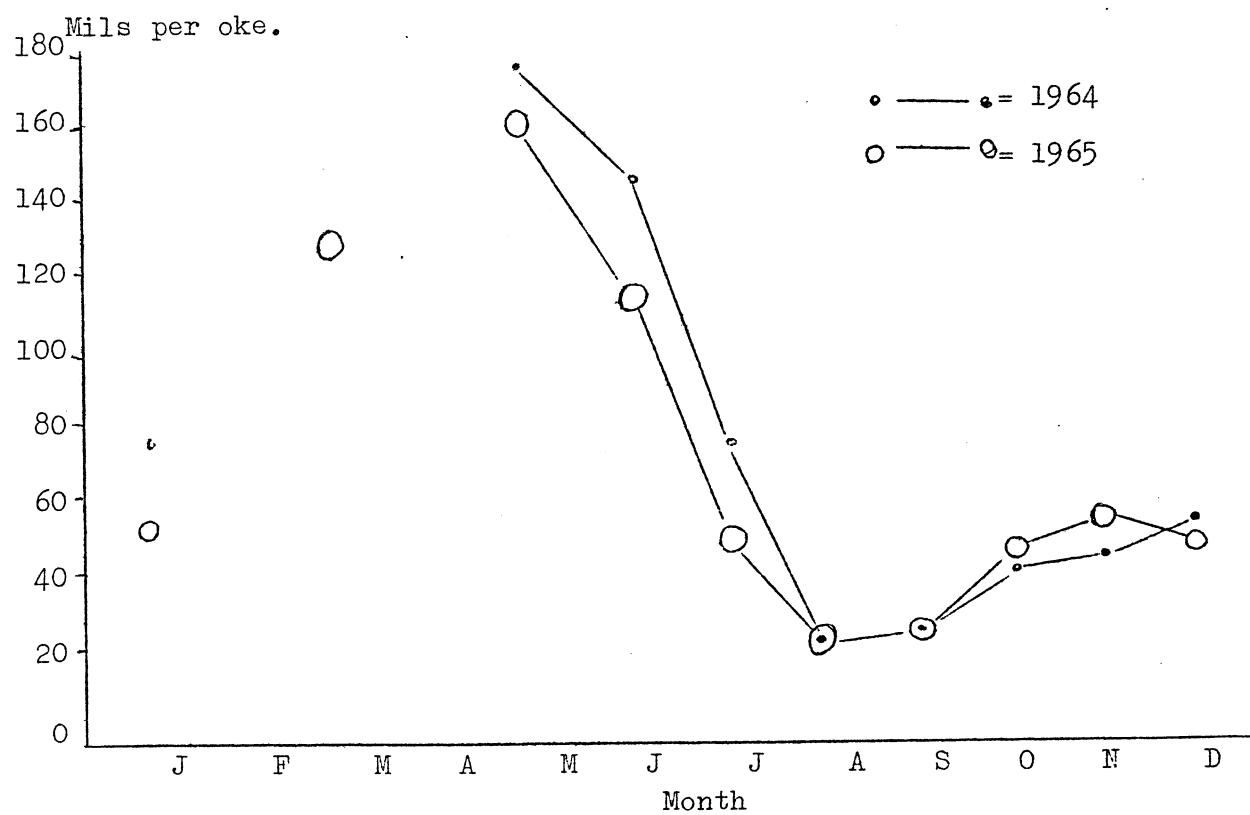
Operation	J	F	M	A	M	J	J	A	S	O	N	D
Pruning					8							
Land cultivation					18							
Manuring+fertilizing					2							
Covering with soil						14						
Top-dressing						0.3	0.3	0.3	0.3	0.3	0.3	
Irrigating					6	7.5	10.5	12.0	15.0	12.0	7.5	4.5
Spraying						4.0	6.0	6.0	6.0	6.0	4.0	
Harvesting						3.0	15.0	24.0	24.0	24.0	18.0	12.0
Total hours/month	-	-	28	20	14.8	31.8	42.3	45.3	42.3	29.8	16.5	-

TABLE 14b  
Egg - Plants

Water Requirements and Distribution (tons/donum)

Operations and efficiency	M	A	M	J	J	A	S	O	N	Total
Flooding 25% effic.	-	-	-	-	-	-	-	-	-	-
Furrow 50% effic.	62	212	296	343	358	400	350	350	300	2671
Sprinkler 75% effic.	83	141	197	228	239	250	240	240	220	1838

TABLE 14c  
Egg - Plants  
Monthly Fluctuation of Wholesale Prices  
in Nicosia's Market for  
the Years 1964 and 1965 (mils/oke)



Year	J	F	M	A	M	J	J	A	S	O	N	D
1964	75	-	-	-	175	146	77	25	26	41	45	53
1965	57	-	125	-	162	117	51	23	25	43	53	49

TABLE 15  
Norm - Calculation of Revenue and Costs

Product:	Groundnuts		
Area:	Paphos		
Management:	Furrow irrigated, all operations by hand except land preparation.		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	300	350	400
Price mils/oke	150	150	150
A. Total Revenue £/don.	45.000	52.500	60.000
<u>Variable Costs</u>			
Seed			
4 okes @ 0.400 mils	1.600	1.600	1.600
Fertilizers			
20/25/30 okes S.A.	0.560	0.700	0.840
10/12/14 okes T.S.P.	0.380	0.456	0.532
Plant Protection			
Chemicals	0.810	0.810	0.810
Irrigating			
1242 tons	?	?	?
Tractor costs			
1.66 hrs	0.295	0.295	0.295
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	3.645	3.861	4.077
C. Difference (A-B)	41.355	48.639	55.923

TABLE 15a  
Labour Requirements

Product:	Groundnuts			
Area:	Paphos			
Average yield:	350 okes/donum			
Management:	Furrow irrigated, all operations by hand except land preparation.			
Operation		Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>				Hours per donum
2 medium ploughings	1.4	-		1.4
1 disc harrowing	0.26	-		0.26
<u>Seeding</u>				
Flooding	1.5	-		-
Opening furrows	6.0	6.0		-
Seeding by hand	6.0	-		-
Fertilizing	0.3	-		-
<u>Irrigating</u>				
6 irrigations	9.0	-		-
<u>Cultivating</u>				
Weeding	4.0	-		-
Hoeing by hand	16.0	-		-
2 sprays	2.0	-		-
<u>Harvesting</u>				
Digging and picking	50.0	-		-
Drying and bagging	4.25	-		-
Total hours/donum	100.71	6.0		1.66
Labour hours per $\pm$ 100 okes yield	$\pm$ 13.5	-		-

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	0.7	0.96										
Seeding					13.8							
Irrigating					1.5	1.5	3.0	3.0				
Cultivating					20							
Spraying							1.0	1.0				
Harvesting									40.14.25			
Total hours/month	-	0.7	0.96	13.8	21.5	1.5	4.0	4.0	40	14.25	-	-

TABLE 15b

Groundnuts

Water Requirements and Distribution (tons/donum)

Operation and efficiency	May	June	July	August	Total
Flooding 25% efficiency	-	-	-	-	-
Furrow 50% efficiency	233	294	429	286	1246
Sprinkler 75% efficiency	155	196	204	190	745

TABLE 16

Norm - Calculation of Revenue and Costs

Product:	Tobacco		
Area:	All suitable areas of Cyprus		
Management:	All operations by hand, except land preparation.		
<u>Revenue</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	50	70	90
Price mils/oke	375	375	375
A. Total Revenue £/donum	18.750	26.250	33.750
<u>Variable Costs</u>			
Seed (free)	-	-	-
Fertilizer			
20/30/40 okes S.A.	0.560	0.840	1.120
10/20/30 okes T.S.P.	0.380	0.760	1.140
Plant Protection			
Chemicals	2.000	2.000	2.000
Irrigation			
2 tons	?	?	?
Tractor costs			
3.1 hrs	0.552	0.552	0.552
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	3.492	4.152	4.812
C. Difference (A-B)	15.258	22.098	28.938

TABLE 16a  
Labour Requirements

Product:	Tobacco		
Area:	All suitable areas of Cyprus		
Average yield:	70 okes/donum		
Management:	All operations by hand except land preparation		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
3 medium ploughings	2.1	-	2.1
2 harrowings	1.0	-	1.0
Opening furrows	1.0	1.0	-
<u>Transplanting</u>			
Growing transplants	6.0	-	-
Transplanting 8.000 plants	10.0	-	-
Manuring + Fertilizing	2.0	-	-
<u>Irrigating</u>			
1 irrigation	2.0	-	-
<u>Cultivating</u>			
1 hoeing	10.0	-	-
8 sprays	8.0	-	-
<u>Harvesting</u>			
Picking and stringing	105.0	-	-
Curing and baling	23.0	-	-
Total hours/donum	170.1	1.0	3.1
Labour hours per ± 10 okes yield	± 18.3	-	-

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	. 0.7	2.0								0.7	0.7	
Transplanting	3.0	3.0	12.0									
Irrigating			2.0									
Cultivating				10.0								
Spraying				2.0	4.0	2.0						
Harvesting					16.0	20.0	25.0	24.0	20.0			
Curing and baling					4.0	5.0	5.0	4.0	5.0			
Total hours/month	3.0	3.7	18.0	14.0	22.0	25.0	30.0	28.0	25.0	0.7	-	0.7

TABLE 16b

Tobacco

Yearly Fluctuation of Prices Paid by the  
Tobacco Growers Cooperative Union (SOK)Ltd.  
for the Years 1961-1965

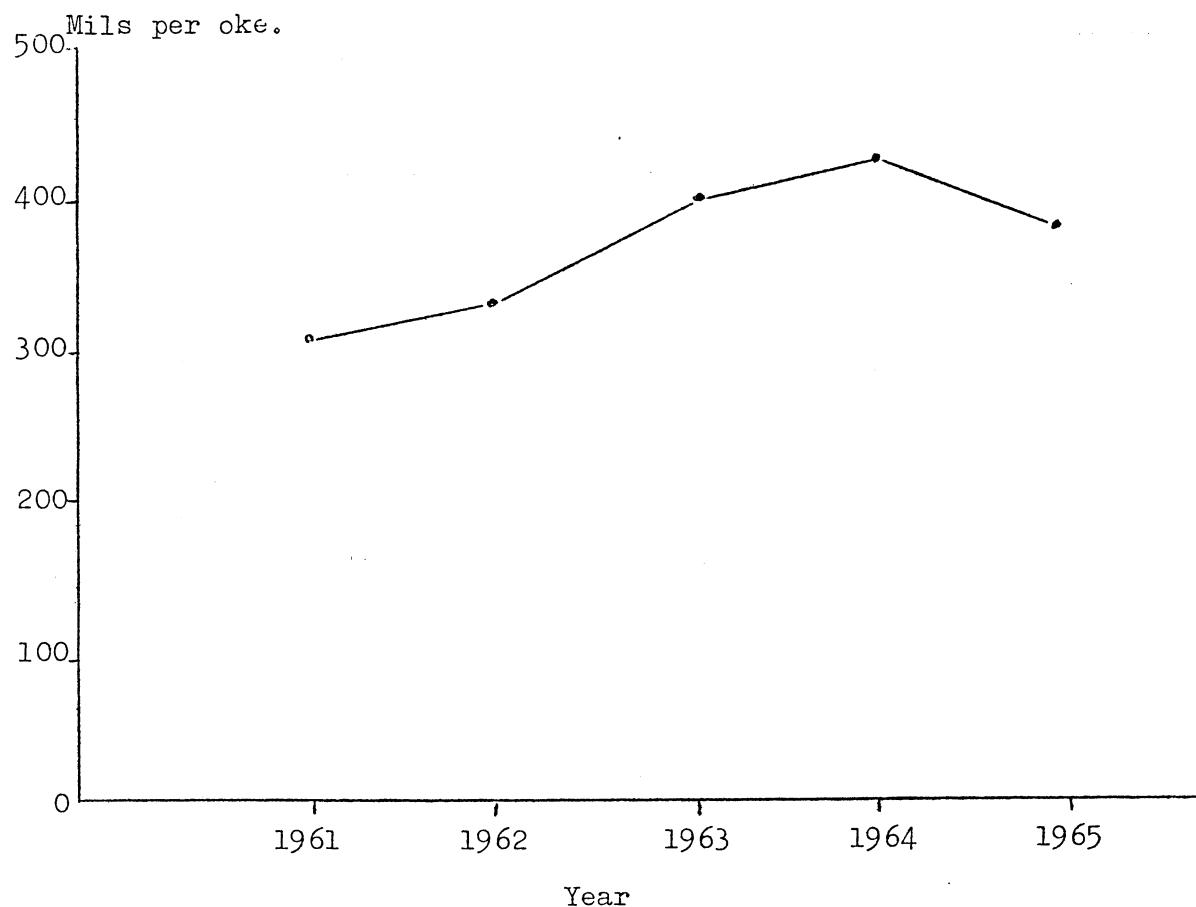


TABLE 17

Norm - Calculation of Yield and Costs

Product:	Farras (green barley)		
Area:	All irrigated areas of Cyprus		
Management:	Flood-irrigated, mechanised cultivation, except loading and unloading. Cut and utilised green.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	1800	2400	3000
Protein Equivalent 1.8 ; okes P.E./donum.	32.4	43.2	54.0
Starch Equivalent 11 ; okes S.E./donum	198	264	330
<u>Variable Costs</u>			
Seed			
16 okes @ 30 mils	0.480	0.480	0.480
Fertilizer			
16/18/20 okes S.A.	0.448	0.504	0.560
12/14/16 okes T.S.P.	0.456	0.532	0.608
Plant Protection	-	-	-
Irrigation			
400 tons	?	?	?
Tractor Costs			
3.4/4.0/4.6 hrs	0.605	0.712	0.819
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	1.989	2.228	2.467

TABLE 17a  
Labour Requirements

Product:	Farras (green barley)		
Area:	All irrigated areas of Cyprus		
Average yield:	2400 okes/donum		
Management:	Flood-irrigated, mechanised cultivation, except loading and unloading. Cut and utilised green.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 medium ploughing	0.7	-	0.7
1 disc harrowing	0.16	-	0.16
<u>Seeding</u>			
Combined drilling (8')	0.4	-	0.2
<u>Cultivating</u>			
Top dressing	0.3	-	-
<u>Irrigating</u>			
3 irrigations	4.5	-	-
<u>Harvesting</u>			
Cutting by tractor mower, 2 cuts	0.6	-	0.6
Loading by fork	3.0	-	1.5
Transport by trailer	0.48	-	0.48
Unloading by fork	0.96	-	0.36
Total hours/donum	11.1	-	4.0
Labour hours per ± 1000 okes yield	± 2	-	± 1

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation								0.7	0.16			
Seeding								0.4				
Top dressing	0.3											
Irrigating		1.5									1.5	1.5
Cutting			0.3								0.3	
Loading+unloading				1.98							1.98	
Transport				0.24							0.24	
Total hours/month	0.3	1.5	2.52	-	-	-	-	0.7	0.56	-	4.02	1.5

TABLE 18  
Norm - Calculation of Yield and Costs

Product:	Green maize		
Area:	All irrigated areas of Cyprus		
Management:	Flood-irrigated, mechanised cultivation except loading and unloading.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	3000	4000	5000
Protein Equivalent 0.8 ; okes P.E./donum	24	32	40
Starch Equivalent 9.1 ; okes S.E./donum	273	364	455
<u>Variable Costs</u>			
Seed			
15 okes @ 90 mils	1.350	1.350	1.350
Fertilizer			
30/40/50 okes S.A.	0.840	1.120	1.400
8/10/12 okes T.S.P.	0.304	0.380	0.456
Plant Protection	-	-	-
Irrigation			
3166 tons	?	?	?
Tractor Costs			
3.1/6.1/7.1 hrs	0.908	1.086	1.264
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
<b>B. Variable Costs £/don.</b>	<b>3.402</b>	<b>3.936</b>	<b>4.452</b>

TABLE 18a  
Labour Requirements

Operation	Hours per donum		
	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 deep ploughing	1.0	-	1.0
1 medium ploughing	0.7	-	0.7
1 disc-harrowing	0.2	-	0.2
<u>Seeding</u>			
Drilling (9')	0.4	-	0.2
Opening furrows for irrigation	0.5	0.5	-
<u>Cultivating</u>			
Fertilizing	0.3	-	-
12 irrigations	18.0	-	-
<u>Harvesting</u>			
Cutting by tractor mower	0.3	-	0.3
Loading by fork	5.0	-	2.5
Transporting	0.8	-	0.8
Unloading by fork	1.5	-	0.4
Total hours/donum	28.7	0.5	6.1
Labour hours per ± 1000 okes yield	± 2	-	± 1

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation	1.0	0.9										
Seeding			0.9									
Fertilizing			0.3									
Irrigating				1.5	3.0	6.0	6.0	1.5				
Harvesting								3.8	3.8			
Total hours/month	-	1.0	0.9	2.7	3.0	6.0	9.8	5.3	-	-	-	-

TABLE 19  
Norm - Calculation of Yield and Costs

Product:	Berseem		
Area:	All irrigated areas of Cyprus		
Management:	Flood-irrigated, mechanised cultivation except loading and unloading.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	4000	5000	6000
Protein Equivalent 2; okes P.E./donum	80	100	120
Starch Equivalent 10; okes S.E./donum	400	500	600
<u>Variable Costs</u>			
Seed			
5 okes @ 270 mils	1.350	1.350	1.350
Fertilizer			
8/10/12 okes S.A.	0.224	0.280	0.336
12/15/18 okes T.S.P.	0.456	0.570	0.684
Plant Protection	-	-	-
Irrigation			
1054 tons	?	?	?
Tractor costs			
8.15/9.15/10.15 hrs	1.450	1.629	1.807
Maintenance of			
special machinery	-	-	-
Labour costs of additional			
hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.		3.480	3.829
		4.168	

TABLE 19  
Norm - Calculation of Yield and Costs

Product:	Berseem		
Area:	All irrigated areas of Cyprus		
Management:	Flood-irrigated, mechanised cultivation except loading and unloading.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	4000	5000	6000
Protein Equivalent 2; okes P.E./donum	80	100	120
Starch Equivalent 10; okes S.E./donum	400	500	600
<u>Variable Costs</u>			
Seed			
5 okes @ 270 mils	1.350	1.350	1.350
Fertilizer			
8/10/12 okes S.A.	0.224	0.280	0.336
12/15/18 okes T.S.P.	0.456	0.570	0.684
Plant Protection	-	-	-
Irrigation			
1054 tons	?	?	?
Tractor costs			
8.15/9.15/10.15 hrs	1.450	1.629	1.807
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	3.480	3.829	4.168

TABLE 19a  
Labour Requirements

Product:	Berseem		
Area:	All irrigated areas of Cyprus		
Average yield:	5000 okes/donum		
Management:	Flood-irrigated, mechanised cultivation except loading and unloading.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
1 deep ploughing	1.0	-	1.0
1 medium ploughing	0.7	-	0.7
1 light harrowing	0.25	-	0.25
<u>Seeding</u>			
Combined drilling (8')	0.4	-	0.2
Mixing fertilizers	0.2	-	-
<u>Cultivating</u>	-	-	-
<u>Irrigating</u>			
11 irrigations	16.5	-	-
<u>Harvesting</u>			
Cutting by tractor mower 5 cuts	1.5	-	1.5
Loading unloading by fork	9.0	-	4.5
Transport by trailer	1.0	-	1.0
Total hours/donum	30.55	-	9.15
Labour hours per ± 1000 okes yield	± 2	-	± 1

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation								1.7	0.25			
Seeding									0.6			
Irrigating			3.0	3.0					4.5	3.0	3.0	
Harvesting			2.3	2.3	2.3						2.3	2.3
Total hours/month	-	2.3	5.3	5.3	-	-	-	1.7	5.35	3.0	5.3	2.3

TABLE 19b

Berseem

Water Requirements and Distribution (tons/donum)

Operation and efficiency	March	April	Sept.	Octob.	Novemb.	Total
Flooding 25% effic.	300	494	675	486	152	2107
Furrow 50% effic.	150	247	338	243	76	1054
Sprinkler 75% effic.	100	165	226	162	51	704

TABLE 20  
Norm - Calculation of Yield and Costs

Product:	Green Alfalfa (4 years utilisation)		
Area:	All irrigated areas of Cyprus		
Management:	Flood irrigated, mechanised cultivation and harvesting except loading and unloading.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	6000	8000	10000
Protein Equivalent 2.5; okes P.E./donum	150	200	250
Starch Equivalent 10.2; okes S.E./donum	612	816	1020
<u>Variable Costs per annum:</u>			
Seed			
4 okes @ 500 mils	0.500	0.500	0.500
Fertilizer			
10 okes S.A.	0.070	0.070	0.070
25/30/35 okes T.S.P.	0.950	1.140	1.330
Plant Protection	-	-	-
Irrigation			
5138 tons	?	?	?
Tractor Costs			
8.94/10.94/12.94 hrs	1.591	1.947	2.296
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
<b>B. Variable Costs £/don.</b>	<b>3.111</b>	<b>3.657</b>	<b>4.196</b>

TABLE 20a  
Labour Requirements

Product:	Green Alfalfa ( 4 years utilisation)		
Area:	All irrigated areas of Cyprus		
Average yield:	8000 okes/donum		
Management:	Flood irrigated, mechanised cultivation and harvesting except loading and unloading.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
1 deep ploughing	1.0	-	1.0
1 medium ploughing	0.7	-	0.7
1 light harrowing	0.25	-	0.25
Setting up borders	1.0	-	-
<u>Seeding</u>			
Drilling (9')	0.4	-	0.2
	3.35 <sup>+</sup>	-	2.15 <sup>+</sup>
<u>Cultivating</u>			
Fertilizing	0.3	-	-
<u>Irrigating</u>			
18 irrigations	27.0	-	-
<u>Harvesting</u>			
8 cuts with tractor mower	2.4	-	2.4
Loading unloading by fork transport by trailer	16.0	-	8.0
Total hours/donum	45.7 <sup>++</sup> )	-	10.4 <sup>++</sup> )
Labour hours per ± 1000 okes yield	± 2	-	± 1

Distribution of Labour Requirements (hours/donum/annum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation									0.74			
Seeding									0.1			
Fertilizing									0.3			
Irrigating	1.5	3.0	3.0	3.0	4.5	4.5	3.0	3.0	1.5			
Harvesting	2.3	2.3	4.6	2.3	2.3	2.3	2.3	2.3				
Total hours/month	-	-	3.8	5.3	7.6	5.3	6.8	6.8	6.04	3.4	1.5	-

+) For the first year only.

++) For each of the four years of production

TABLE 20b  
Green Alfalfa  
Water Requirements and Distribution (tons/donum)

Operation and efficiency	M	A	M	J	J	A	S	O	N	Total
Flooding 25% effic	300	494	677	785	821	748	675	486	152	5138
Furrow 50% effic	150	247	339	393	411	374	338	243	76	2571
Sprinkler 75% effic	100	165	226	262	277	258	226	162	51	1727

TABLE 21  
Norm - Calculation of Yield and Costs

Product:	Vetches		
Area:	All dryland areas of Cyprus		
Management:	Non-irrigated, mechanised cultivation, grazed in situ.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	1400	1600	1800
Protein Equivalent 1.8 ; okes P.E./donum	25.2	28.8	32.4
Starch Equivalent 7.5 ; okes S.E./donum	105	120	135
<u>Variable Costs</u>			
Seed			
10 okes @ 60 mils	0.600	0.600	0.600
Fertilizer			
8/10/12 okes S.A.	0.224	0.280	0.336
5/7/9 okes T.S.P.	0.190	0.266	0.342
Plant Protection	-	-	-
Irrigation	-	-	-
Tractor Costs			
0.92 hrs	0.164	0.164	0.164
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
<b>B. Variable Costs £/don.</b>	<b>1.178</b>	<b>1.310</b>	<b>1.442</b>

TABLE 21a  
Labour Requirements

Product:	Vetches		
Area:	All dryland areas of Cyprus		
Average yield:	1600 okes/donum		
Management:	Non-irrigated, mechanised cultivation, grazed in situ.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
1 disc ploughing	0.56	-	0.56
1 disc harrowing	0.16	-	0.16
<u>Seeding</u>			
Combined drilling 8'	0.4	-	0.2
Mixing fertilizers	0.05	-	-
<u>Cultivating</u>	-	-	-
<u>Harvesting</u>			
Grazed by animals	-	-	-
Total hours/donum	1.17	-	0.92
Labour hours per ± yield	-	-	-

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	O	N	D
Land preparation										0.72			
Seeding											0.45		
Total hours/month	-	-	-	-	-	-	-	-	-	0.72	0.45	-	-

TABLE 22  
Norm - Calculation of Yield and Costs

Product:	Farras (green barley)		
Area:	All dryland areas of Cyprus		
Management:	Non-irrigated, mechanised cultivation, grazed in situ.		
<u>Yield and Nutrients</u>			
		<u>Low</u>	<u>Average</u>
Yield okes/donum		1200	1600
Protein Equivalent 1.9 ; okes P.E./donum		22.8	30.4
Starch Equivalent 10.6 ; okes S.E./donum		127.2	169.6
			<u>High</u>
			2000
			38.0
			212
<u>Variable Costs</u>			
Seed			
20 okes @ 30 mils		0.600	0.600
Fertilizer			
10/12/14 okes S.A.		0.280	0.336
6/8/10 okes T.S.P.		0.228	0.304
Plant Protection		-	-
Tractor Costs			
1.06 hrs		0.189	0.189
Maintenance of special machinery		-	-
Labour costs of additional hired manwork		-	-
Miscellaneous costs		-	-
B. Variable Costs £/don.		1.297	1.429
			1.561

TABLE 22a  
Labour Requirements

Product:	Farras (green barley)		
Area:	All dryland areas of Cyprus		
Average yield:	1600 okes/donum		
Management:	Non-irrigated, mechanised cultivation, grazed in situ.		
Hours per donum			
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			
1 medium ploughing	0.7	-	0.7
1 disc harrowing	0.16	-	0.16
<u>Seeding</u>			
Combined drilling 8'	0.4	-	0.2
Mixing fertilizers	0.05	-	-
Total hours/donum	1.31	-	1.06
Labour hours per ± yield	-	-	-

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation									0.7	0.16		
Seeding											0.45	
Total hours/month	-	-	-	-	-	-	-	-	0.7	0.16	0.45	-

TABLE 23  
Norm - Calculation of Yield and Costs

Product:	Farras (green barley)		
Area:	All dryland areas of Cyprus		
Management:	Non-irrigated, mechanised cultivation, except loading and unloading. Cut and utilised green.		
<u>Yield and Nutrients</u>			
	<u>Low</u>	<u>Average</u>	<u>High</u>
Yield okes/donum	1500	2000	2500
Protein Equivalent 1.8; okes P.E./donum	12	36	45
Starch Equivalent 11; okes S.E./donum	165	220	275
<u>Variable Costs</u>			
Seed			
20 okes @ 30 mils	0.600	0.600	0.600
Fertilizer			
10/12/14 okes S.A.	0.280	0.336	0.392
6/8/10 okes T.S.P.	0.228	0.304	0.380
Plant Protection	-	-	-
Tractor Costs			
3.36 hrs	0.598	0.598	0.598
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	1.706	1.838	1.970

TABLE 23a  
Labour Requirements

Product:	Farras (green barley)		
Area:	All dryland areas of Cyprus		
Average yield:	2000 okes/donum		
Management:	Non-irrigated, mechanised cultivation except loading and unloading. Cut and utilised green.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
1 deep ploughing	0.7	-	0.7
1 disc harrowing	0.16	-	0.16
<u>Seeding</u>			
Combined drilling 8'	0.4	-	0.2
Mixing fertilizers	0.05	-	-
<u>Cultivating</u>	-	-	-
<u>Harvesting</u>			
1 cutting by tractor mower	0.3	-	0.3
Loading by fork	2.6	-	1.3
Transport by trailer	0.4	-	0.4
Unloading by fork	1.0	-	0.3
Total hours/donum	5.61	-	3.36
Labour hours per ± 1000 okes yield	± 2	-	± 1

Distribution of Labour Requirements (hours/donum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation										0.7	0.16	
Seeding											0.45	
Harvesting				4.3								
Total hours/month	-	-	4.3	-	-	-	-	-	-	0.7	0.61	-

TABLE 24  
Norm - Calculation of Yield and Costs

Product:	Subterranean Clover (4 years utilisation)		
Area:	All areas with at least 18 inches of rainfall		
Management:	Non-irrigated, grazed in situ.		
<u>Yield and Nutrients</u>			
Yield okes/donum	<u>Low</u>	<u>Average</u>	<u>High</u>
Protein Equivalent 2.3: okes P.E./donum	1500	2000	2500
Starch Equivalent 9; okes S.E./donum	34.5	46	57.5
	135	180	225
<u>Variable Costs per Annum</u>			
Seed			
5 okes @ 750 mils	0.940	0.940	0.940
Fertilizer			
10 okes S.A.	0.070	0.070	0.070
10 okes T.S.P.	0.380	0.380	0.380
Tractor Costs			
0.75 hrs	0.134	0.134	0.134
Maintenance of special machinery	-	-	-
Labour costs of additional hired manwork	-	-	-
Miscellaneous costs	-	-	-
B. Variable Costs £/don.	1.524	1.524	1.524

TABLE 24a  
Labour Requirements

Product:	Subterranean Clover (4 years utilisation)		
Area:	All areas with atleast 18 inches of rainfall		
Average yield:	2000 okes/donum		
Management:	Non-irrigated, grazed in situ.		
Operation	Manual Labour	Animal Traction	Tractor Traction
<u>Land preparation</u>			Hours per donum
2 ploughings	1.4	-	1.4
1 harrowing	0.32	-	0.32
<u>Seeding</u>			
Sowing by hand	0.25	-	-
Fertilizing by hand	0.4	-	-
	2.37+)	-	1.72+)
<u>Cultivating</u>			
1 fertilizing by hand	0.4	-	-
1 harrowing	0.32	-	0.32
<u>Harvesting</u>			
Grazed by animals	-	-	-
Total hours/donum	0.72 <sup>++</sup> )	-	0.32 <sup>++</sup> )
Labour hours per ± yield	--	-	-

#### Distribution of Labour Requirements (hours/donum/annum)

Operation	J	F	M	A	M	J	J	A	S	O	N	D
Land preparation					0.18					0.25		
Seeding										0.16		
Fertilizing										0.4		
Harrowing										0.32		
Total hours/month	-	-	-	-	0.18	-	-	-	-	0.25	0.88	-

TABLE 25  
Norm - Calculation of Revenue and Costs

Enterprise: Dairy			
<u>Revenue</u>			
Yield okes milk/cow/annum	Low 2000	Average 3000	High 4000
Milk: @ 50 mils/oke	100.000	150.000	200.000
Calf: 0.9 @ £25 / animal <sup>1)</sup>	22.500	22.500	22.500
Cull cow: 60 okes @ 200 mils <sup>2)</sup>	12.000	12.000	12.000
A. Total Revenue per cow £:	134.500	184.500	234.500
<u>Variable Costs</u>			
Feeding costs <sup>3)</sup>			
Lucerne (13.383/14600/14.600 okes)	66.915	73.000	73.000
Concentrates (132/473/923 okes)	4.640	16.472	32.132
Replacement <sup>4)</sup>	25.048	25.048	25.048
Veterinary	5.000	5.000	5.000
Maintenance of special machinery	-	-	-
Miscellaneous costs	-	-	-
B. Variable costs per cow £:	101.603	119.520	135.180
C. Difference (A-B) £:	32.897	64.980	99.320

1) A death rate of 10% is assumed.  
 2) A five-year lactation period is assumed. The weight of the cull cow is 300 okes.  
 3) Feeding cost vary according to the type, price and quantity of available feeding stuffs. For this table the following were assumed.  
 a) Steaming up requirements are provided from concentrates. Maintenance and production requirements are provided from feeding green lucerne up to a maximum of 40 okes per day. Concentrates are fed to meet production and maintenance requirements not provided by lucerne.  
 b) Price of green lucerne 55 mils/oke. Price of concentrate mixture 35 mils/oke.  
 c) Starch Equivalent of lucerne: 10.2. Starch Equivalent of concentrate mixture: 60.  
 4) See Table 26.

TABLE 25a  
Labour Requirements per Cow +)

(minutes per day and hours per annum)

Method of Housing and Milking	Size of herd (cows)					
	10		20		40	
	min. per day	hrs per annum	min. per day	hrs per annum	min. per day	hrs per annum
<u>Cowshed</u>						
a) Hand milking	28	170	27	164	26	158
b) Machine milking (2 milking units)	17	103	16	97	15	91
<u>Covered yard</u>						
a) Machine milking (2 milking units)	17	103	13	79	12	73

+) Labour requirements for milking, feeding, cleaning (stable and animals), and disinfecting milking equipment.

TABLE 25b

Nutrients Requirements per Cow per Annum

<u>Yield:</u> Okes milk/cow/annum	<u>Low</u> 2000	<u>Average</u> 3000	<u>High</u> 4000
<u>Nutrient for:</u>			
a) <u>Maintenance</u> <sup>1)</sup> 0.237 okes P.E. 2.37 okes S.E. x 365 days	okes PE/SE 87 /865	okes PE/SE 87 /865	okes PE/SE 87 /865
b) <u>Production</u> <sup>2)</sup> 0.05 okes P.E. per oke milk 0.25 okes S.E.	100/500	150/750	200/1000
c) <u>Steaming-up</u> 50 days	16 / 80	20 /100	24 /120
Total Nutrient Requirements:	203/1445	257/1715	311/1985
1) For a cow weighting 440 okes. For cows of different weight the maintenance requirements are as follows:			
<u>Cow's weight (okes)</u>	<u>Okes P.E.</u> / <u>Okes S.E.</u>		
400	0.225	2.25	
440	0.237	2.37	
480	0.249	2.49	
520	0.261	2.61	
560	0.273	2.73	
2) For milk containing 3.5% Fat. For milk of different fat content the requirements are as follows:			
<u>Butter fat content</u>	<u>Okes P.E.</u> / <u>Okes S.E.</u>		
3%	0.05	0.225	
4%	0.06	0.275	

TABLE 26  
Norm - Calculation of Revenue and Costs

Enterprise: Rearing Dairy Replacements (from calf up to $2\frac{1}{2}$ years)			
<u>Revenue</u>	<u>Low</u>	<u>Average</u>	<u>High</u>
1 incalf heifer			
Price £/animal	125.000	150.000	175.000
A. Revenue £ per animal	125.000	150.000	175.000
<u>Variable Costs</u>			
1 calf	20.000		
Feeding costs <sup>1)</sup>			
Whole milk			
170 okes @ 50 mils		8.500	
Skim milk powder			
60 okes @ 165 mils		9.900	
Concentrates			
a) Calf meal			
70 okes @ 45 mils		3.150	
b) Barley			
340 okes @ 32 mils		10.880	
Green lucerne			
13.762 okes @ 5 mils		68.810	
Veterinary		4.000	
B. Variable costs £ per animal	125.240	125.240	125.240
C. Difference (A-B) £ per animal	-0.240	24.760	49.760

1) For details see Table 26b.

Annual Replacement costs for different number of lactation periods

<u>Number of lactations</u>	<u>Annual Replacement costs</u>
1	152.240
2	62.620
3	41.746
4	31.310
5	25.048
6	20.873
7	17.891
8	15.655
9	13.916

TABLE 26a  
Labour Requirements per Replacement Animal<sup>+</sup>  
(minutes per day and hours per annum)

Method of Housing	Number of Followers							
	2		5		9		18	
	min.	hours	min.	hours	min.	hours	min.	hours
Cowshed	4.1	26	3.95	24	3.9	23	3.9	23
Covered Yard	3.2	20	3.1	20	2.9	19	2.9	19

+ ) Labour requirements for feeding, cleaning etc.

TABLE 26b  
Nutrient Requirements for Dairy Replacements

Period months	Weight okes	Average Daily Requirements okes P.E./ S.E.	Total Requirements okes P.E./ S.E.
1-2	60	0.200 / 0.944	12.0 / 56.6
3-4	85	0.300 / 1.180	18.0 / 70.8
5-6	120	0.315 / 1.496	18.9 / 89.8
7-12	200	0.354 / 1.811	63.7 / 326.0
13-18	275	0.315 / 2.084	56.7 / 368.6
19-20	400	0.275 / 2.362	99.0 / 850.0
0-30	-	- -	268.3 / 1761.8

The above nutrient requirements are provided by the following feeding program:

- a) Birth to 4th month:-  
 170 okes whole milk  
 60 okes skim milk powder  
 70 okes calf meal<sup>1)</sup>  
 65 okes green lucerne
- b) 5th month to 30th month:-  
 340 okes barley  
 13.697 okes green lucerne

- 1) Composition of calf meal
- |               |     |
|---------------|-----|
| rolled barley | 15% |
| flaked maize  | 20% |
| carob meal    | 15% |
| linseed cake  | 40% |
| fish meal     | 10% |

TABLE 27

Norm - Calculation of Revenue and Costs

Enterprise: Beef Fattening (from calf up to 13 months).			
<u>Revenue</u>	<u>Low</u>	<u>Average</u>	<u>High</u>
1 beef animal okes	350	375	400
Price: mils/oke L.W.	300	300	300
A. Total Revenue £/animal	105.000	112.500	120.000
<u>Variable Costs</u>			
1 calf	20.000		
Feeding costs <sup>1)</sup>			
Skim milk powder			
60 okes @ 165 mils		9.900	
Concentrates			
a) Calf meals			
97 okes @ 45 mils		4.365	
b) Mixture A			
87 okes @ 40 mils		3.880	
c) Mixture B			
575 okes @ 36 mils		17.250	
Green lucerne			
3815 okes @ 5 mils		19.075	
Miscellaneous costs			
Veterinary etc.		1.000	
B. Variable Costs £/animal		75.470	
C. Difference (A-B) £:	29.530	37.030	44.530

1) For details see Table 27b

TABLE 27a  
Labour Requirements per Fattening Animal +)  
 (minutes per day and hours per annum)

Method of Housing	Number Beef Animals							
	2		5		9		18	
	min.	hours	min.	hours	min.	hours	min.	hours
Covered Yard	3.2	20	3.1	20	2.9	19	2.9	19

TABLE 27b  
Nutrient Requirements for Beef Fattening

Period months	Weight okes	Average Daily Requirements okes P.E. / S.E.	Total Requirements okes P.E. / S.E.
1-2	65	0.200 / 0.944	12.0 / 56.6
3-4	95	0.300 / 1.180	18.0 / 70.8
5-6	100-150	0.393 / 1.890	23.6 / 113.4
7-8	150-210	0.472 / 2.362	28.3 / 141.7
9-10	210-260	0.590 / 3.070	35.4 // 184.2
11-13	260-360	0.670 / 3.780	60.3 / 340.2
0-13	260-360	- -	177.6 906.8

The above nutrient requirements are provided by the following feeding program:

a) Birth to 4th month

60 okes skim milk powder

97 okes calf meal

65 okes green lucerne

b) 5th month to 6th month

600 okes green lucerne

87 okes mixture A

(85% Barley, 15% Premix)

c) 7th month to 13th month

3150 okes green lucerne

575 okes mixture B

(93% Barley, 7% Premix)

TABLE 28  
Norm - Calculation of Revenue and Costs

Enterprise: Sheep (all milk sold liquid)			
<u>Revenue</u>	<u>Low</u>	<u>Average</u>	<u>High</u>
Milk sold per ewe <sup>1)</sup> (20/70/120 okes @ 100 mils)	2.000	7.000	12.000
Lamb (14 okes @ 350 mils/okes L.W.)	4.900	4.900	4.900
Wool (1.5 okes @ 280 mils)	0.420	0.420	0.420
Cull ewe <sup>2)</sup> (6 okes @ 150 mils)	0.900	0.900	0.900
A. Revenue £/per ewe:	8.220	13.220	18.220
<u>Variable Costs</u>			
Feeding costs			
a) For the ewe			
Concentrates (70/100/130 okes @ 35 mils)	2.450	3.500	4.550
Hay (80 okes @ 23 mils)	1.840	1.840	1.840
Straw (60 okes @ 5 mils)	0.300	0.300	0.300
Grazing <sup>3)</sup>	?	?	?
b) For the lamb			
Concentrates (20 okes)	0.700	0.700	0.700
Replacement 0.2 ewe @ 12 £	2.400	2.400	2.400
Veterinary	0.500	0.500	0.500
Miscellaneous	0.200	0.200	0.200
B. Variable costs £ per ewe	8.390	9.440	10.490
C. Difference (A-B) £ per ewe	- 0.170	3.780	7.730
<p>1) 30 okes of milk are fed to the lamb.</p> <p>2) A five year utilization period is assumed.</p> <p>3) Grazing costs are not included as they vary from year to year and from region to region.</p>			

(Continued)

TABLE 28

Enterprise: Sheep (milk made into cheese) <sup>1)</sup>			
<u>Revenue:</u>	<u>Low</u>	<u>Average</u>	<u>High</u>
Halloumi 4/14/24 okes @ 600 mils	2.400	8.400	14.400
Anari 2/7/12 okes @ 200 mils	0.400	1.400	2.400
Lamb	4.900	4.900	4.900
Wool	0.420	0.420	0.420
Cull ewe	0.900	0.900	0.900
 A. Revenue £ per ewe:	9.020	16.020	23.020
 B. Variable Costs £ per ewe:	8.390	9.440	10.490
 C. Difference (A-B) £ per ewe:	0.630	6.580	12.530

1) 1 oke of milk produces 0.2 oke of halloumi and 0.1 oke anari.

TABLE 28a

Labour Requirements per Ewe per Annum

	Size of flock		
	50	100	150
Labour hours <sup>1)</sup>	48	24	16

1) 1 man (2400 hours/annum) looking after the flock.  
Does not include cheese making.

TABLE 28b  
Nutrient Requirements per Ewe per Annum

<u>Yield:</u>	<u>Low</u>	<u>Average</u>	<u>High</u>
Okes milk/ewe/annum	50	100	150
<u>Nutrients for:</u>			
a) <u>Maintenance</u> <sup>1)</sup>	okes PE/SE	okes PE/SE	okes PE/SE
0.039 okes P.E. 0.315 okes S.E.	14 /115	14 /115	14 /115
b) <u>Production</u> <sup>2)</sup>	3.55 /16.7	7.1 /33.4	10.65 /50.1
0.071 okes P.E. 0.334 okes S.E.			
c) <u>Flushing and Steaming up</u>			
60 days of milk 0.15/0.3/0.45 okes/day or 9/18/27 okes milk	2.0 /15.0	2.5 /20.0	3.0 /25.0
Total Nutrient Requirements	19.55/146.7	23.6 /168.4	27.65/190.1
The above nutrient requirements are provided by the following feeding program:			
<u>Low / Aver./ High</u>		<u>Okes S.E.</u>	
70 / 100 / 130 okes concentrates	=	42 /60 /78	
80 / 80 / 80 okes hay	=	28 /28 /28	
60 / 60 / 60 okes straw	=	12 /12 /12	
grazing	=	64 /68 /72	
Total		146 /168/190	
1) For a ewe weighting 40 okes.			
2) For milk containing 7.5% fat.			

TABLE 29  
Norm - Calculation of Revenue and Costs

Enterprise: Pig Fattening (from 15 to 80 okes: 130 days)			
<u>Revenue</u>			
One pig 80 okes @ 325 mils:			26.000
A. Revenue £ per pig:			26.000
<u>Variable Costs</u>	Feed <u>4:1</u>	Conversion <u>3.5:1</u>	Ratio <u>3:1</u> <sup>1)</sup>
Weaned pig 15 okes @ 550 mils	8.250	8.250	8.250
Concentrates Fattening meal 260/227/195 okes @ 42 mils	10.920	9.534	8.190
Miscellaneous Veterinary etc.	0.500	0.500	0.500
B. Variable Costs £ per pig:	19.670	18.284	16.940
C. Difference (A-B)	6.330	7.716	9.060

1) The feed conversion ratio indicates the efficiency of feed utilization  
It is measured by the number of okes of meal required to produce one  
oke of liveweight gain.

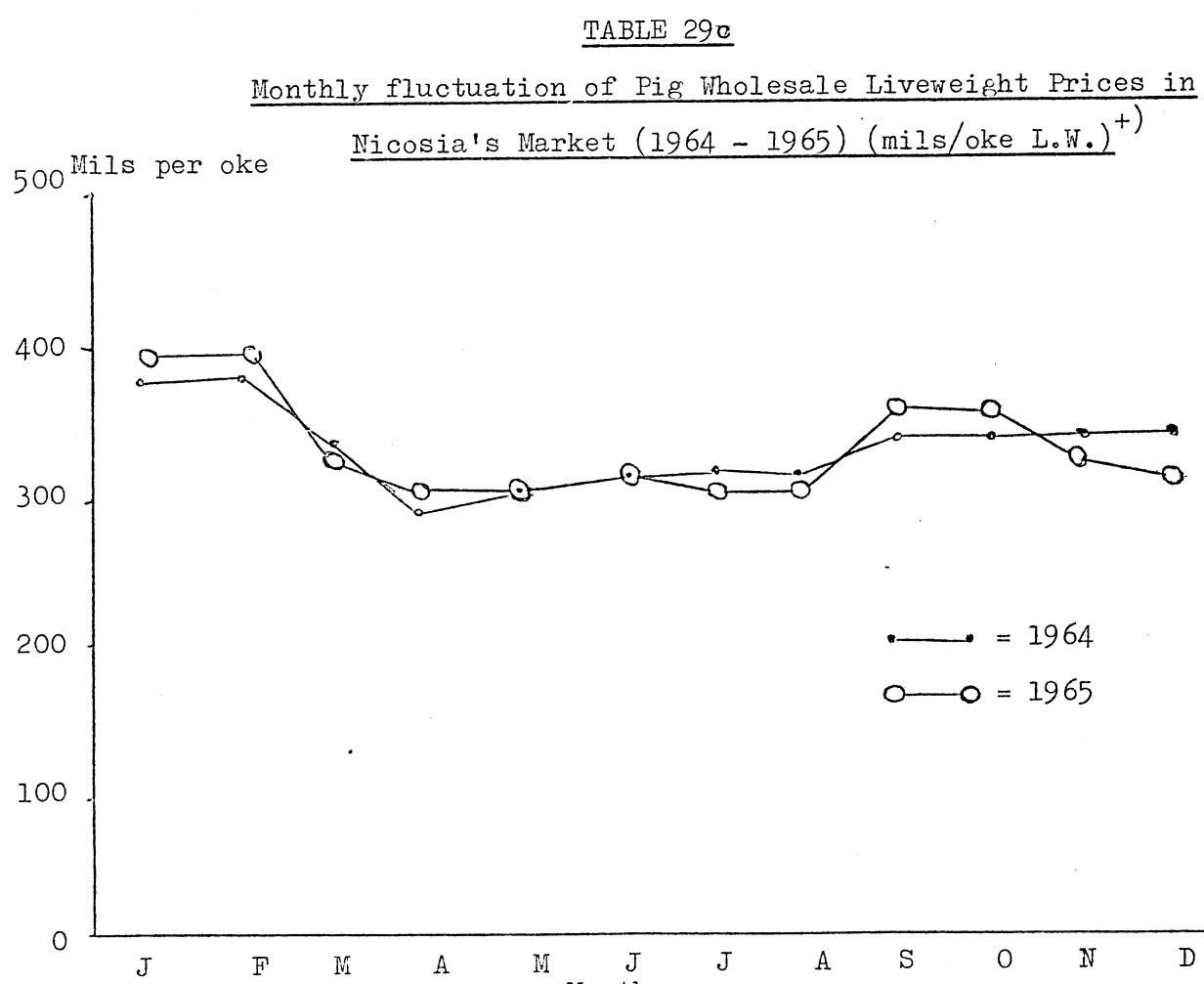
TABLE 29a  
Labour Requirements per Fattening Pig

Days required to gain 65 okes L.W. (15 - 80 okes L.W.)		120 days		140 days		160 days	
Number of Pigs:		min./ day	hours/ period	min/ day	hours/ period	min./ day	hours/ period
10		1.6	3.2	1.6	3.7	1.6	4.3
20		1.4	2.8	1.4	3.3	1.4	3.7
30		1.3	2.6	1.3	3.0	1.3	3.5
50		1.0	2.0	1.0	2.3	1.0	2.7
100		0.9	1.8	0.9	2.1	0.9	2.4

TABLE 29b  
Nutrient Requirements for Fattening Pigs

Fattening period okes L.W.	Nutrient Requirements per Day <sup>1)</sup> Okes P.E.	Okes TDN <sup>1)</sup>
16 - 24	0.118 - 0.142	0.630
25 - 32	0.142 - 0.157	0.787
33 - 40	0.157 - 0.173	0.984
41 - 48	0.173 - 0.197	1.181
49 - 56	0.189 - 0.197	1.299
57 - 64	0.197	1.378
65 - 72	0.197	1.575
73 - 80	0.197	1.575

1) TDN = Total Digestible Nutrients.



Year	1964	375	375	325-350	275-300	300	300-325	300-325	300-325	325-350	325-350	325-350	325-350
1965	375-400	375-400	300-350	300	300	300-325	300	300	325-375	325-375	300-350	300-350	300-325

1) In the first semester of 1966 prices fell to 225-250 mils per oke/L.W.

TABLE 30  
Norm - Calculation of Revenue and Costs

Enterprise: Rearing weaners	<u>Low</u>	<u>Average</u>	<u>High</u>
<u>Revenue</u>			
No. of weaned piglets/annum 15/18/21 @ 8.000 mils	120.000	144.000	168.000
Cull sow 1) 25 okes @ 150 mils	3.750	3.750	3.750
A. Revenue £ per Sow	123.750	147.750	171.750
<u>Variable Costs</u>			
		<u>Number of Piglets/Annum<sup>2)</sup></u>	
	<u>15</u>	<u>18</u>	<u>21</u>
Feeding Costs			
a) For the sow 1.162 okes meal @ 44 mils	51.128	51.128	51.128
b) Creep feeding 180/216/252 okes meal @ 44 mils	7.920	9.504	11.088
Replacement <sup>3)</sup>	6.000	6.000	6.000
Miscellaneous			
Veterinary etc.	3.000	3.000	3.000
B. Variable Costs £ per sow/annum	68.048	69.632	71.216
C. Difference (A-B)	55.702	78.118	100.534
Variable Costs £ per weaner	4.536	3.868	3.390
1) Live-weight at sale is 125 okes. A five year utilization period is assumed.			
2) Farrowing takes place twice each year.			
3) The initial cost per ewe is £30.			

TABLE 30a  
Labour Requirements per Sow per Annum

	<u>Number of Sows</u>				
	2	6	10	15	30
Minutes/day/sow	6.72	5.61	4.86	4.51	4.04
Hours/annum/sow	41	34	29	27	24

TABLE 30b  
Nutrient Requirements per Sow per Annum

<u>Nutrients for:</u>	<u>okes P.E.</u>	<u>/ okes TDN.</u>
a) 2 pregnancy periods 0.21 okes P.E. x 228 days 1.73 okes T.D.N.	47.9	394.4
b) 2 milking periods 0.63 okes P.E. x 110 days 3.15 okes T.D.N.	69.3	346.5
c) 2 dry periods 0.20 okes P.E. x 27 days 1.41 okes T.D.N.	5.4	38.0
Total Nutrient Requirements	112.6	778.9
All the above nutrient requirements are provided by an all meal diet. The meal used contains 67% T.D.N. and 12% P.E. Thus the meal fed equals to 1162 okes (778.9 ÷ 0.67).		
<u>Creep Feeding of Piglets: Birth-Weaning</u>		
30 days (15th - 55th day) x 0.4 okes/day: 12 okes / piglet.		

APPENDIX

TABLE 31

TABLE 32  
Estimated Costs of Water for Irrigation Purposes

Source	Cost per ton (mils)
Rivers	0 - 5
Permanent Springs	5 - 10
Wells and Boreholes	5 - 20
Dams <sup>1)</sup>	5 - 40

1) The price of water of some of the recently constructed dams has been fixed by the Government of Cyprus as follows:

<u>Dam</u>	<u>Price</u> <u>mils per ton</u>
Ayia Marina	13
Kiti	14
Polemidhia	17

Publications of the Agricultural Research Institute

1. Annual Report for 1962-1963,  
Cyprus Agricultural Research Institute.
2. Savvides, A.A.-  
Economic Study of the Cyprus Potato Industry (1964).
3. Hadjiparaskevas, L. and Muntjewerf, C. P.-  
Costs and Returns of Tobacco Production (1964).
4. Djemal, E., Yiassemides, P., Zavos, P. and Muntjewerf, P.-  
Costs and Returns of Cereal Production (1964).
5. Djemal, E., Hadjiparaskevas, L., Zavos, P. and Muntjewerf, P.-  
Costs and Returns of Sheep and Goats (1964).
6. Savvides, A.A.-  
Aspects of Potato Marketing in Cyprus (1964).
7. Walker, G.H. and Papasolomontos, A.-  
A Report of Carrot Weed Control Experiments: 1963-1965. (1965).
8. Charalambous, J. and Papaconstantinou, J.-  
Methods of Analysis for Agricultural Research Workers.  
A Laboratory Handbook, (1964)
9. Annual Report for 1964,  
Cyprus Agricultural Research Institute.
10. Charalambous, J. (editor).-  
The Composition and Uses of Carob Bean. (1966).
11. Myrianthousis, S.T.-  
The Use of Girdling, Gibberellin and Thinning to  
Increase the Berry Size of Sultanina Table Grapes in  
Cyprus. (1966).
12. Papasolomontos, A.-  
A Report of Carrot Weed Control Experiments: 1965-1966. (1966).
13. Papasolomontos, A. and Walker, G.H.-  
A Report of Wild Oats Control Experiments in  
Cereals: 1963-1966. (1966).
14. Hadjiparaskevas, L.-  
Costs and Returns of Spring Crop Potatoes (1966).

