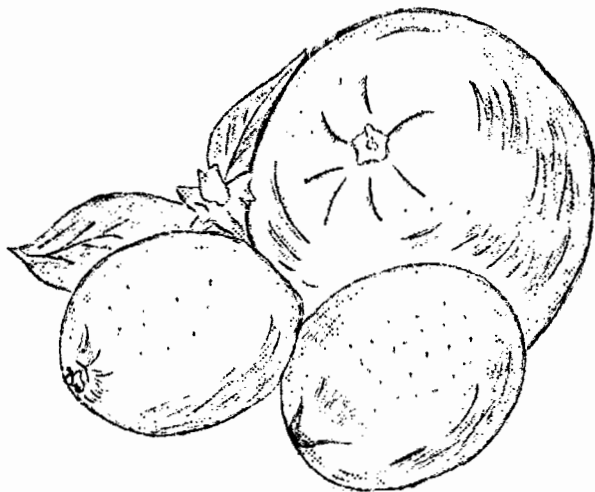


CS-SC-54-2

Orange County

Citrus Management Study

1954



University of California
Agricultural Extension Service
County of Orange

introduction

This 1954 citrus management study for Orange County includes analyses of both valencias and lemons. Costs, yields, management practices and income are analysed from information supplied by local growers. We appreciate their generous cooperation.

This study emphasizes the importance of efficient use of labor, materials and capital necessary for a profitable farming enterprise.

J. E. Peterson
Farm Advisor, Orange County

definitions

Yield is computed Packed Box Equivalent.
(All fruit picked converted to PBE).

Price is on PBE basis.

Total Income is value of all returns before deducting cultural, overhead and harvesting costs.

Capital Income is computed for use of capital (interest at 5% on investment).

Management Income is profit after deducting total costs, value of own labor and capital interest.

Cultural Costs include values for all labor, hired and own, and materials for irrigation, pest control fertilization, and other practices where reported.

Overhead Costs include taxes, insurance, general expense, repairs.

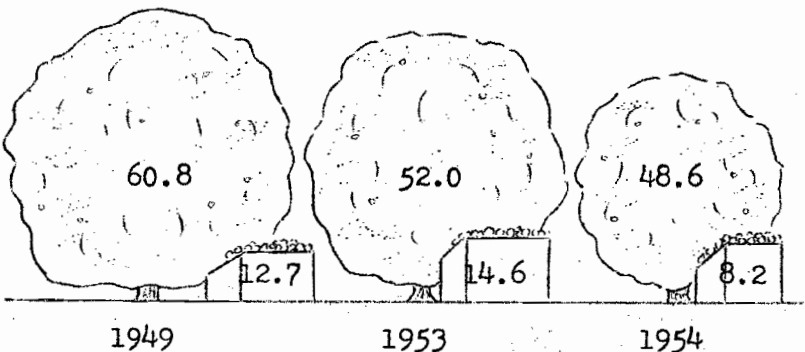
Interest and Depreciation includes interests on capital investment at 5% and depreciation on equipment.

Harvesting Costs include picking and hauling.

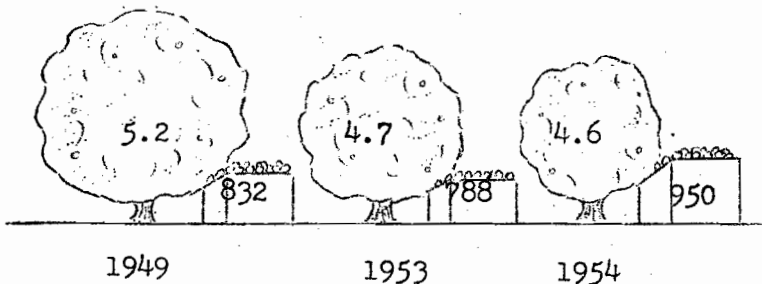
CITRUS IN ORANGE COUNTY

Trends in Acreage and Production:

Valencias - thousands of acres
 - millions of boxes*



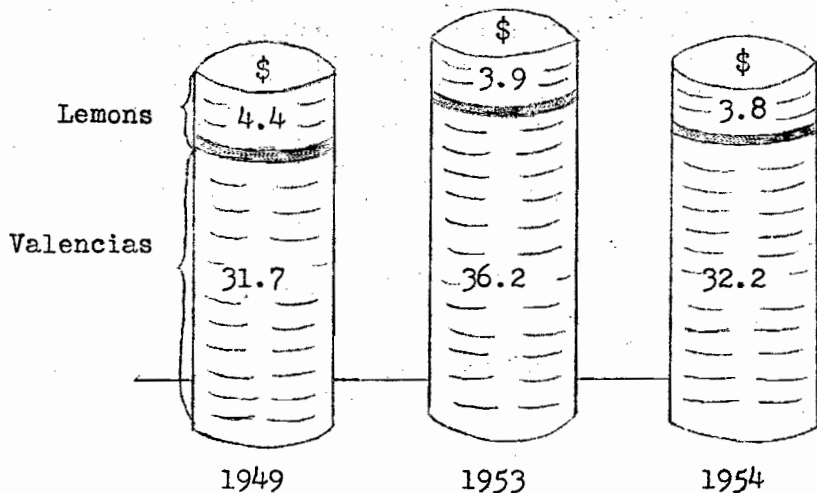
Lemons - thousands of acres
 - hundred thousands of boxes*



Data from Agricultural Commissioners Report
 *Packed Box Equivalents

The citrus industry continues to play a major role in the economy of the county. Oranges, lemons, grapefruit and limes are commercially produced. By far the most important variety is the Valencia orange. F.o.b. value for this fruit normally ranges from 30 to 40 millions of dollars each year. Lemons occupy second place with f.o.b. value of about $3\frac{1}{2}$ million annually. Navel orange plantings are limited. F.o.b. value of fruit in 1954 was \$404,000. Other citrus varieties contributed approximately \$120,000.

Value - millions of dollars



WHAT ABOUT YIELD AND INCOME?

	Valencias	Lemons
Growers in Study	42	11
Acres in Study	632	137
Acreage in County	48,600	4,600
Production; boxes/acre*		
County average	169	206
Study average	206	227

For Valencias the difference of 37 packed boxes represents an advantage of \$109 per acre before harvesting costs using the average price of \$2.95 per packed box equivalent derived from the study.

For lemons the difference of 21 packed boxes does not represent an advantage because of lower average price received by growers in the study.

*Packed Box Equivalent

The two most important factors contributing to total income are of course, yield and price. Yield data is in the table at left. Analysis of f.o.b. price data and Citrus League packing cost studies reveals the county average price paid for fruit delivered at the packing house door to be about \$2.96 for valencias and approximately \$2.91 for lemons**. The averages derived from the study are \$2.95 and \$2.32 respectively. The gross income per acre for the orchards in the study:

Valencias - - - - - \$609/acre
Lemons - - - - - \$528/acre

By comparison the average gross income for the entire county should approximate those amounts:

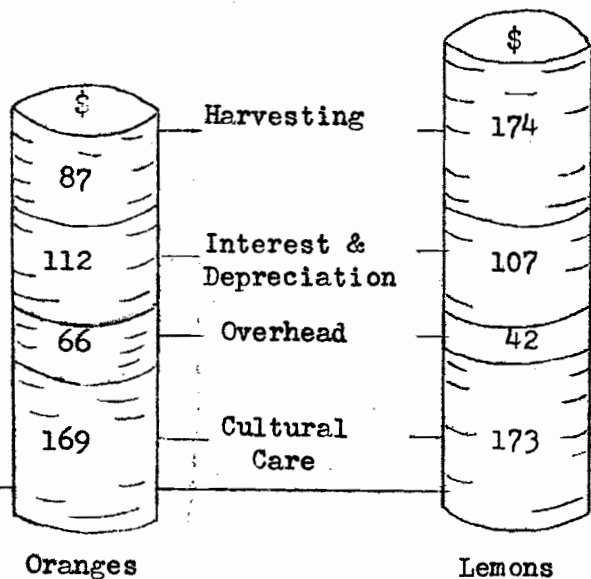
Valencias - - - - - \$500/acre
Lemons - - - - - \$600/acre

**Valencia packed box - 77 lbs. net
Lemon packed box - 79 lbs. net

WHAT WERE THE COSTS ?

Total income less total costs gives profit. Cost analysis helps determine the phase of orchard operation that dips into profits.

In some cases cultural costs are excessive, in others overhead costs are too high.

Costs per acre

Cost Breakdown on
Packed Box Equivalent Basis

<u>Oranges</u>		<u>Lemons</u>	
.82	Culture	.77	
.32	Overhead	.18	
.43	Harvesting	.77	
.54	Dep. & Int.	.47	
<u>\$2.11</u>		<u>\$2.19</u>	

Yields in 1954 were low for Oranges and high for lemons. For comparison, a look at the previous five year average reveals:

<u>Oranges</u>		<u>Lemons</u>	
.61	- Culture	- 1.01	
.24	- Overhead	- .24	
.37	- Harvesting	- .76	
.38	- Dep. &	- .61	
	Interest		
<u>\$1.60</u>		<u>\$2.62</u>	

VALENCIA COSTS IN DETAIL

	% acres reporting	Ave.*	Ave. all acres**		% acres reporting	Ave.*	Ave. all acres**
<u>Irrigation:</u>				<u>Pruning & Tree Care:</u>			
Water	100	-	15.26	Labor	11	14.12	1.62
Labor	100	-	19.45				
Ac. in. per acre		Water cost		<u>Soil Management:</u>			
16.9		per ac. ft.		Cult. & Furrow	60	16.95	10.41
		\$16.50		Weed Spraying	40	27.45	12.98
				Hoeing & Misc.	46	8.35	3.92
<u>Pest & Disease Control:</u>				<u>Tree Replacement:</u>			
Material	97	15.38	14.58	Trees & Labor	48	5.16	2.44
Labor	97	23.06	21.87				
<u>Fertilization:</u>				<u>Cash Overhead:</u>			
Micronutrient	10	8.33	.82	Taxes	100	-	46.73
Commercial	84)	46.10	42.60	Insurance	100	-	3.10
Organic	25)			Gen. Expense	100	-	8.06
Application		2.95	1.74	Repairs, etc.	100	-	7.68
lbs. N per acre		217		<u>Interest:</u>			
Tons organic per acre		6.6T		at 5%	100	-	100.78
<u>Frost Protection:</u>				<u>Depreciation:</u>			
Material	37	12.76	.89	Equipment	100	-	11.43
Labor	37	2.39	4.74				

* For acreage reporting

** Total study acreage

A FORGOTTEN PHASE OF ORCHARD MANAGEMENT

Capacity production of fruit requires a grove be in top notch shape. EACH AND EVERY TREE must operate at maximum efficiency.

Maximum efficiency means both boxes per tree and trees per acre. Good producing trees count most on a per acre basis. Diseased trees and blank spaces have no place in high production orchards. Fewer good trees per acre mean fewer boxes per acre.

A tree culling program becomes more important as the competition from processed citrus fruit gets keener. Much citrus acreage is destined to "go under" unless more attention is paid to keeping the orchard spaces filled.

Orchard inventories on sixteen groves in this study reveal the magnitude of this problem.

Grading each tree in these orchards shows some groves have 90% or more good trees but too many have less than 65% which is equivalent to about 50 trees per acre!! Examination of one-third the study acreage shows these results:

Good trees	76%
Can be made better	10
Should be pulled	7
Blanks	2
Young replants	5

Real need exists for a program of tree elimination and replacement. Land values are too high to allow much of an area remain idle and unproductive. Tree by tree grading is the first step to a successful program. Every grower is urged to take a good, hard look at his orchard and his management practices. Experience gained from this study shows a tree inventory and orchard analysis as one of the best ways of doing the job. Information for making this type of appraisal can be obtained by writing or contacting the Farm Advisor, 1104 W. 8th Street, Santa Ana.

INDIVIDUAL VALENCIA ORCHARD SUMMARY: Profit-determining factors for each grove

Serial Number	Yield P.B.E.	Average Price P.B.E.	Per-cent Fresh	Total Per Acre Income	Total Cul. Cost L & M Per Acre	Overhead Costs - Cash	Depr. & Invest.	Harvest Costs	Total Costs	Management & Income	Capital & Management Income
401	338	3.67	81	1244.40	188.58	52.02	78.00	139.89	458.50	785.89	862.39
399	343	3.25	76	1118.39	286.68	65.81	126.50	145.15	624.14	494.25	603.75
396	260	3.40	74	883.65	187.42	49.46	101.96	100.49	439.33	444.32	545.41
304	235	3.48	75	819.90	114.05	63.55	115.09	104.05	396.74	423.16	535.29
393	309	2.95	66	915.18	134.69	65.90	136.43	164.42	501.45	413.73	525.97
369	215	3.56	86	880.47	237.42	49.22	94.36	103.75	484.74	395.73	487.43
402	254	3.36	83	854.86	193.37	64.48	113.60	95.27	466.72	388.14	485.58
395	263	3.25	79	856.69	216.08	54.85	128.96	119.80	519.69	337.00	443.31
292	283	2.71	75	766.59	168.27	47.96	107.63	129.00	452.86	313.73	417.42
351	186	3.58	84	669.29	121.80	26.98	113.49	96.93	359.20	310.09	421.22
238	202	3.24	68	656.43	128.97	38.31	102.37	84.42	354.07	302.36	395.66
366	248	2.98	84	740.34	199.61	54.87	93.53	90.95	438.96	301.38	392.98
372	245	2.96	74	726.26	163.52	67.13	92.56	104.76	427.97	298.29	389.57
357	345	2.59	65	894.96	290.94	63.61	102.51	147.75	604.81	290.15	391.40
360	244	2.98	92	727.60	144.72	58.69	143.46	91.81	438.69	288.91	390.30
398	223	2.93	55	653.54	126.50	65.57	102.61	118.59	413.27	240.27	341.34
407	172	3.36	78	579.76	100.69	59.73	86.94	76.60	323.96	225.50	339.27
400	166	3.72	75	621.47	153.08	56.90	115.53	70.08	395.60	225.44	332.17
318	177	3.37	83	607.26	204.25	47.21	77.50	66.67	395.63	211.62	287.83
373	209	3.73	62	778.76	212.72	106.28	139.34	112.03	570.37	208.39	321.97
403	167	3.40	84	571.09	149.95	62.47	92.25	60.98	365.65	205.44	296.69

Management Income represents the profit remaining after paying all costs, including reimbursement for use of capital and operators own labor.

INDIVIDUAL VALENCIA ORCHARD SUMMARY: Profit-determining factors for each grove (cont.)

Serial Number	Yield P.B.E.	Average Price P.B.E.	Per-cent Fresh	Total Per Acre Income	Total Cul. Cost L & M Per Acre	Overhead Costs - Cash	Depr. & Invest.	Harvest Costs	Total Costs	Management & Income	Capital & Management Income
392	186	2.92	57	541.12	67.52	96.98	132.80	73.77	371.07	170.05	285.63
301	150	3.39	85	509.59	135.17	56.40	90.91	57.70	340.18	169.41	259.83
9	190	3.60	65	677.62	263.34	57.27	98.44	97.81	516.86	160.75	253.44
326	165	3.17	76	522.72	113.01	44.57	116.88	88.58	366.04	159.67	265.35
404	226	2.90	59	659.03	247.22	61.53	92.74	108.15	509.64	149.39	234.26
364	176	2.57	71	454.40	86.02	49.95	104.93	65.21	306.12	148.28	250.54
319	197	2.71	79	534.08	197.66	52.36	78.70	72.89	401.61	132.46	209.30
300	133	3.29	81	438.44	154.99	58.84	90.13	49.62	353.59	84.85	174.87
238	161	2.68	66	430.31	157.13	54.26	93.30	69.14	373.83	56.49	148.14
325	122	3.40	75	418.20	153.60	41.86	116.58	69.04	381.08	37.11	146.27
405	107	2.85	78	308.06	81.71	51.09	94.05	50.95	277.77	30.29	122.54
248	137	3.21	71	443.70	152.82	77.14	152.80	67.64	450.40	- 6.70	109.69
237	143	2.79	58	399.07	207.55	42.38	94.79	69.98	414.70	- 15.63	76.33
406	92	3.04	78	280.17	123.09	40.08	112.74	41.70	317.54	- 37.37	57.96
314	124	2.55	55	315.94	121.71	57.73	103.23	71.39	354.06	- 38.11	63.47
1	104	2.83	65	293.80	137.75	45.32	118.96	43.03	345.06	- 51.26	45.86
368	198	2.76	69	547.83	321.37	100.04	93.09	84.70	599.21	- 51.38	40.14
284	73	2.88	73	191.56	96.35	53.03	91.94	51.95	293.27	-101.71	- 10.80
223	125	1.79	--	224.26	101.85	69.24	113.41	49.09	333.59	-109.33	1.83
376	114	3.18	65	364.91	275.31	74.98	104.63	89.10	544.02	-179.11	- 83.64
384	69	2.66	59	182.70	157.34	69.46	122.35	30.88	380.03	-197.33	- 81.56
Average	206	2.95	71	609.41	168.87	65.57	112.21	87.70	434.35	175.06	275.84

Management Income represents the profit remaining after paying all costs, including reimbursement for use of capital and operators own labor.

INDIVIDUAL LEMON ORCHARD SUMMARY: Profit-determining factors for each grove

No.	Yield P.B.E.	Price P.B.E.	Per- cent Fresh	Income	Cultural Cost L. & M.	Cash Over- head	Invest. & Depr.	Harvest Costs	Total Costs	Manage- ment & Income	Capital & Management Income
388	557	2.40	43	1335.03	357.61	49.23	127.59	402.76	937.19	397.84	497.34
389	428	2.53	43	1088.11	180.52	68.27	136.85	323.24	708.88	379.23	491.70
390	399	2.64	47	1051.76	240.98	72.97	107.50	351.33	772.78	278.98	381.99
387	336	2.44	45	821.45	193.75	38.98	138.67	261.63	633.03	188.41	289.39
284a	242	2.26	61	549.20	96.35	53.03	91.93	187.01	428.33	120.87	211.78
202	290	2.52	46	734.36	213.16	49.76	155.64	234.94	653.54	80.82	200.66
292a	234	2.29	48	535.11	132.72	46.19	107.63	198.53	485.07	50.04	153.73
318a	195	2.47	53	481.27	204.25	47.21	77.87	146.86	471.21	8.06	84.67
240	129	1.99	45	256.56	117.75	27.60	94.27	96.09	335.71	- 79.18	12.55
377	212	2.57	47	539.20	286.05	80.74	106.97	189.53	663.29	-124.09	- 28.34
319a	209	2.20	46	459.81	301.16	57.54	78.70	150.18	587.58	-127.77	- 50.93
Ave.	227	2.32	45	528.24	173.84	41.84	106.88	174.38	496.94	31.30	127.63

Management Income represents the profit remaining after paying all costs, including reimbursement for use of capital and operators own labor.

acknowledgments

Appreciation is extended to the cooperating growers for the use of their records; to Mr. George Ferguson of the California Citrus League who collected much of the field data; to Mr. R. C. Rock, Extension Economist, Marketing, for summarizing the records.

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