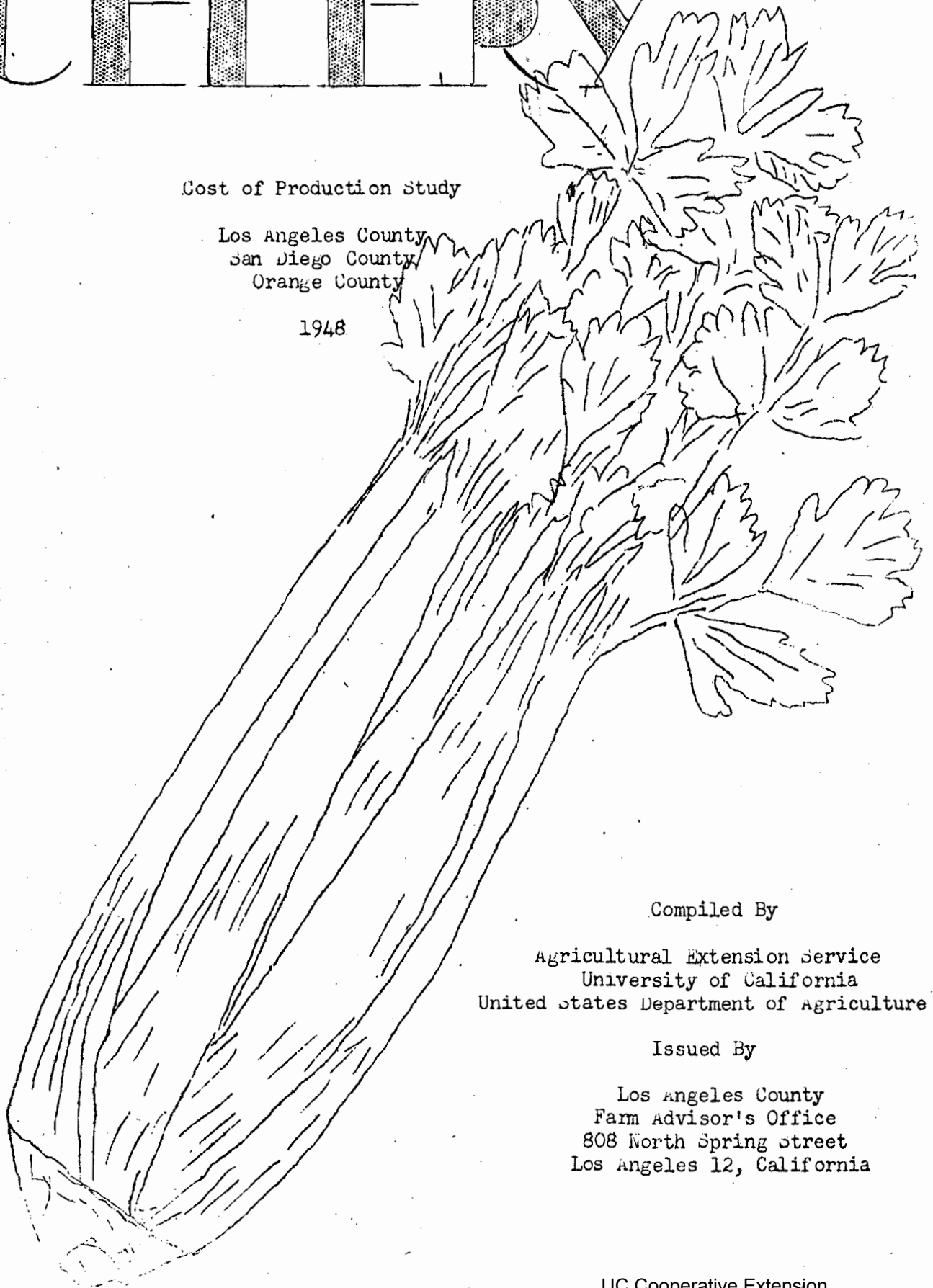


CHEERUP

Cost of Production Study

Los Angeles County
San Diego County
Orange County

1948



Compiled By

Agricultural Extension Service
University of California
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Issued By

Los Angeles County
Farm Advisor's Office
808 North Spring Street
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CELERY PRODUCTION, COSTS AND ANALYSIS

1947-48

Los Angeles - Orange - San Diego

An analysis of costs and management practices on 8 ranches producing Winter and Spring celery on 349 acres in three southern California counties.

Statistical tables show the California and U. S. acreage, production, average yield per acre, and prices.

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The Agricultural Extension Service

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Introduction

This study of the cost of producing celery has been prepared at the request of celery growers. The tables were compiled from data furnished by eight growers. Two were located in the Venice district in Los Angeles County, three in Orange County, and three in San Diego County.

It should not be assumed that the averages presented in these tables are averages for the industry. The sample is too small for that purpose and conditions vary widely in the different celery producing areas and even from ranch to ranch in the same area.

However, this statistical analysis will give the grower some idea about how costs are distributed and about what he may expect in the way of costs under similar conditions in the production of winter and spring celery.

The eight records in this analysis consist of 349 acres with an average yield of 978 packed crates per acre. The total costs per acre averaged \$2072.54. All costs up to harvest averaged \$1010.34, while all harvesting and packing costs, including crates, etc., averaged slightly more, \$1062.20 per acre.

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Calculated on a per crate basis, the pre-harvest cost averaged \$1.04 and harvesting and packing \$1.08, making a total of all costs of \$2.12.

Some of the major items of costs that could well receive careful consideration are: (1) harvesting and packing, (2) plants and planting methods, (3) fertilizers, (4) irrigation practice, (5) pest control.

Fertilizer practices varied widely between farms in both amounts and kinds of fertilizer used as shown in table 5. Pounds of nitrogen per acre ranged from 498 to 1609, with an average of 879. It appears that cost of this operation could be materially reduced on most farms with no reduction in yield or quality.

Harvesting and packing costs were greater than the cost of growing the crop up to harvest. The difference between cost of field packing and shed packing was primarily a labor cost. It appears that growers could find some means of reducing cost of this item.

A careful study of these tables should indicate to the cooperator the strong and weak spots in his management practice and assist others in analyzing their costs.

Table 1 - Main Factors in the Cost of Producing Celery - per Acre

Ser- ial no.	Yield per A. (crates)	Pre-harvest costs per A.							Harvesting and packing costs						Total all costs	
		Lab.&field pow.		All mater- ial	Cash over- head	Deprec- iation costs	Interest and rent	Total	Cut and trim	Field pack	Pack- ing house labor	Haul- ing	Total hvst.& packing labor	Mater- ial crates, etc.		Total hvst.& packing cost
Pre- plant prep.	Plant to harvest															
1	1154	52.98	277.85	583.75	95.75	57.10	113.70	1181.13	138.46	-	680.77	92.31	911.54	484.62	1396.16	2577.29
2	1106	8.97	136.06	406.31	76.31	4.28	68.39	700.32	331.68*	-	-	-	331.68	541.74	873.42	1573.74
3	1097	37.13	205.87	525.67	76.94	28.84	69.56	944.01	138.54	-	647.10	115.45	901.09	460.65	1361.74	2305.75
4	1027	39.37	179.53	504.69	136.85	9.93	101.24	971.61	184.86	-	636.74	71.89	893.49	441.61	1335.10	2306.71
5	1000	54.99	213.74	766.60	98.39	8.33	70.83	1212.88	250.00*	-	5.00	-	255.00	440.00	695.00	1907.88
6	1000	64.20	191.12	672.62	80.15	6.33	52.59	1067.01	200.00*	-	-	-	200.00	455.00	655.00	1722.01
7	804	16.84	225.16	383.00	100.31	7.27	24.87	757.45	160.80	-	402.00	50.20	613.00	361.80	974.80	1732.25
8	725	31.87	183.55	404.27	99.92	13.97	71.31	804.89	253.75*	-	61.25	-	315.00	326.25	641.25	1446.14
AV.	978	39.87	224.25	509.93	123.04	30.18	83.07	1010.34	637.33	-	-	-	637.33	424.87	1062.20	2072.54

* includes hauling

The above table presents the average yield (in crates) and the costs per acre broken down into the major items of cost as reported by eight different growers of celery. Two of these growers were in the Venice area in Los Angeles County, three in Orange, and two in Chula Vista and one in San Luis Rey in San Diego County.

Each record in the table is given a serial number and is kept in the same order in subsequent tables. The data shown in the tables were computed from growers' records on their 1947-48 crop. The averages shown here must not be assumed as being an average cost for the industry as a whole, since it is a very small sample and these particular records may not represent average conditions.

This statistical analysis will give the grower a good idea of cost distribution and what to expect in the way of costs in the production of celery under similar conditions. It will also give him a method of analyzing costs so that they can be related to management practice, hence giving him a better basis for making managerial decisions. The grower can compare his costs with others and observe the strong and weak spots in his practices. Subsequent tables break down into greater detail these major factors and operations.

Table 2 - Costs of Production per Crate on Eight Farms in Southern California

Serial no.	Yield per A. (crates)	Pre-harvest costs per crate							Harvesting and packing costs							
		Labor & field power		All material	Cash overhead	Depreciation costs	Interest and or rent	Total	Cut and trim	Field pack	Packing house labor	Hauling	Total hvst. & packing labor	Material crates, etc.	Total hvst. & packing cost	Total all costs
		Pre-plant prep.	Plant to harvest													
1	1154	\$.05	\$.24	\$.50	\$.08	\$.05	\$.10	\$1.02	\$.12	-	\$.59	\$.08	\$.79	\$.42	\$1.21	\$2.23
2	1106	.01	.12	.37	.07	0	.06	.63	.30*	-	-	.30	.49	.79	1.42	
3	1097	.03	.19	.48	.07	.03	.06	.86	.13	-	.59	.10	.82	.42	1.24	2.10
4	1027	.04	.17	.49	.14	.01	.10	.95	.18	-	.62	.07	.87	.43	1.30	2.25
5	1000	.05	.22	.77	.10	.01	.07	1.22	.25*	-	-	.25	.44	.69	1.91	
6	1000	.06	.19	.67	.08	.01	.05	1.06	.20*	-	-	.20	.46	.66	1.72	
7	804	.02	.28	.48	.12	.01	.03	.94	.20	.50	.06	.76	.45	1.21	2.15	
8	725	.04	.26	.56	.14	.02	.10	1.12	.35*	.08	.43	.45	.88	2.00		
Av.	978	.04	.23	.52	.13	.03	.09	1.04	.65			.65	.43	1.08	2.12	

* Includes hauling

This table is set up exactly the same as table 1 and the computations are based on the cost per packed crate (approximately 65 pounds). In records 1, 3, and 4 all celery was hauled to a packing house and carefully graded, washed, and packed. In records 7 and 8 a part of the crop was field packed and part was run through the house. The others were field packed. There are two major divisions in the breakdown of costs. All costs up to harvesting, including depreciation, cash overhead, and land costs, are shown in the first section. The cost of bringing the crop up to harvest averaged for the eight records \$1010.34 per acre or \$1.04 per crate. It is interesting to note that the total harvesting and packing costs averaged almost the same, \$1062.20 per acre or \$1.08 per crate. It should be remembered that this average includes some field packed as well as shed packed costs.

Yield per acre is one of the most important factors in reducing costs per crate up to harvesting because many of the per acre costs are more or less fixed regardless of yield. The larger the number of crates that these costs can be divided among, the lower the costs per package. Harvesting and packing costs per acre are almost in direct ratio to the yield.

Table 3 - an Analysis of Labor and Field Power and Certain Materials per Acre

Serial no.	Yield per A. packed crates	Cost of labor and field power								Cost of materials			
		Pre-plant preparation	Planting and growing							Water	Fertilizer	Plants	Pest control
			Planting	Fertilizing	Irrigation	Cultivation	Hoe & weed	Pest control	Other				
1	1154	\$52.98	\$45.86	\$11.69	\$56.49	\$18.90	\$ 8.00	\$29.60	\$107.31	\$10.74	\$199.86	\$318.40	\$ 54.75
2	1106	8.97	89.10	3.46	12.39	3.57	19.07	8.47	.00	6.88	128.99	240.00	30.44
3	1097	37.13	44.10	18.71	33.85	16.87	63.00	22.15	7.19	15.02	153.75	318.75	38.15
4	1027	39.37	38.25	27.71	26.00	27.68	49.60	10.29	.00	78.44	236.57	150.00	39.68
5	1000	54.99	86.50	4.28	40.80	37.46	16.20	28.50	.00	7.50	414.10	320.00	25.00
6	1000	64.20	28.80	Included in material	59.52	24.00	38.40	40.40	.00	18.60	260.62	350.00	43.40
7	804	16.84	25.00	25.68	32.20	9.60	28.35	91.80	12.53	6.00	217.00	105.00	55.00
8	725	31.87	24.50	10.76	32.00	13.26	70.00	11.03	22.00	73.00	135.00	148.75	47.52
Av.	978	39.87	41.78	12.76	41.17	16.82	36.10	27.44	48.18	29.76	187.90	244.83	47.44

One of the most striking characteristics of this analysis is the wide variation in the costs of individual operations and the input of labor and materials. Some of this can be explained by the fact that heavy soils require a lot more work in tillage operations, water is more expensive and difficult to apply in some areas than others, needs for pest control will vary with time and place, but a great deal of it can be laid at the door of the individual manager. His decisions as to "what and how much" and the skill and technique with which he performs are basic in determining costs.

These tables showing the costs of different operations and materials used by individual operators and the average for all should indicate to him the items in his practice that would need a more careful analysis to determine why this is so. Some items, of course, like irrigation water cost just so much and that's what has to be paid, but many items like fertilizer, number of cultivations, etc. depend on the decision of the manager. Every item of expense and input of material should be tested with the question, "Will it pay?" Will the increased yield and income more than pay for this item of costs?

Table 4 - Total Labor and Material Cost for Certain Operations - Per Acre

Serial no.	Soil type	Previous crop	Date planted	Date harvest	Planting			Irrigation			Pest control		
					Plant distance	Number plants per A.	Total costs labor & material	No. times	Acre inches per A.	Total costs labor & material	No. times spray	No. times dust	Total costs labor & material
1	Silt & clay loam	Beans & other veg.	Dec. 1- Mar.15	April 15	23 x 6	41392	\$364.26	20	79.8	\$ 67.23	5	-	\$ 84.35
2	Loam	Celery & pasture	Sept.	Feb.-Apr.	30 x 7	30000	329.10	13	19.4	19.27	8	-	38.91
3	Yolo med. to heavy	Spinach	Dec. 1- Mar.17	Apr.12- June 30	23 x 6	31900	362.85	21	41.0	48.87	4	3	60.30
4	Med-Heavy	vegetables	Sept. 5	Jan. 20		30000	188.25	13	-	104.44	8	0	49.97
5	Heavy(peat)	vegetables	Jan.	Apr.-June		40000	406.50	14	-	48.30	4	1	53.50
6	Sandy loam		Aug.15	Feb.-Apr.		35000	378.80	31	104.0	78.12	3	2	83.80
7	Sandy loam	vegetables	Oct.5	Jan.-Mar. 15		35000	130.00	23	-	38.20	25		146.80
8	aliso sandy & clay	Vegetables	Aug.25	Jan.-Apr.	30 x 6	35000	173.25	-	-	105.00	6	4	55.10
AV.							286.61			70.93			74.88

Table 4 presents certain factors that have a direct bearing on yields, costs, and management practices. Certain costs that are important and are largely under the control of the manager are set up to focus attention upon them.

Getting the plants set in the field averaged \$286.61 per acre. Yet the costs varied from \$130.00 to \$406.50. Our observation is that there is a great difference in the way growers do this. Growers with higher costs would do well to look into more efficient methods.

The cost of pest control averaged \$74.88 per acre. Here again costs varied widely, ranging from \$38.91 to \$146.80.

The cost of fertilizing averaged \$200.66 per acre with a range of \$132.45 to \$418.38. Note the total number of pounds of nitrogen applied per acre. Tests and observations show that nitrogen is the only fertilizer that has increased celery production. On most soils 400 pounds of nitrogen per acre is adequate for maximum yield.

Continuation of Table 4

Serial number	Fertilizing				Variety of celery	Land preparation and cultivation			
	Kind	Pounds per acre	Pounds nitrogen per acre	Total costs labor and material		Number times over land			
						Land preparation	Power cultivation	Hoeing	Hand weeding
1	Chick 10-5-5 ca cyn am. nit.	5000) 4615) 700) 100)	532	\$211.55	Utah special	11	-	2	0
2	Chick 8-8-4	28500) 1176)	807	132.45	Utah special	5	2	2	1
3	Chick manure 10-5-5 am. nit. ca cyn	6000) 20000) 3000) 250) 150)	762	172.46	Utah special	15	4	1	0
4	Chick 8-8-4 16-20	29429) 4000) 1200)	1056	264.28	Utah special	12	-	2	3
5	Chick 8-8-4 NH ₃	8000) 5700) 13)	667	418.38	Utah special	11	8	1	2
6	Chick Dairy	36364) 100000)	1609	260.62	Utah special	8	6	2	0
7	Chick Dairy 8-8-4 NH ₃	19637) 29455) 2000) 300)	1100	242.68	Utah special	7	4	2	1
8	8-8-4 am. nit.	500) 300)	498	145.76	Utah special	16	5	2	2
AV.			872	200.66					

Table 5 - Celery: U. S. Acreage and Production - Average Yield and Farm Price

Crop and state	Acreage			Production			Average yield per acre			Average farm price		
	10 yrs. 1935-1944	1945	1946	10 yrs. 1935-1944	1945	1946	10 yrs. 1935-1944	1945	1946	10 yrs. 1935-1944	1945	1946
				1,000 crates*			crates*			dollars per crate		
<u>Winter</u>												
California	1,780	1,800	2,500	1,213	1,350	1,562	681	750	625	1.70	3.15	2.60
Florida	5,060	6,800	8,550	2,636+	3,706+	4,249+	521	545	497	1.81	3.00	2.15
Arizona	-	250	930	-	201	442	-	804	475	-	3.15	2.85
Total	6,840	8,850	11,980	3,849	5,257	6,253	563	594	522	1.77	3.04	2.31
<u>Spring</u>												
California	1,520	1,800	2,250	1,235	2,034	2,182	813	1,130	970	1.90	3.35	1.85
Florida	2,510	4,250	4,900	1,186+	1,806+	2,190+	473	425	447	2.25	4.45	2.50
Total	4,030	6,050	7,150	2,421	3,840	4,372	601	635	611	2.08	3.86	2.17
<u>Late fall</u>												
California	10,100	11,700	10,000	3,009	3,978	4,300	298	340	430	1.89	3.15	1.80
Idaho	15	-	-	7	-	-	467	-	-	.82	-	-
New Jersey	520	500	600	109	110	138	210	220	230	1.78	2.50	1.10
Total	10,640	12,200	10,600	3,125	4,088	4,438	294	335	419	1.79	3.13	1.78
Total Calif.	13,400	15,300	14,750	5,457	7,362	8,044	407	481	545	1.85	3.21	1.97
Total U.S.#	39,570	43,890	48,250	16,227	19,622	23,329	410	447	484	1.68	3.19	1.91

* Equivalent 1/2 size crate (approximately 65 pounds).

+ Includes some quantities not harvested.

Includes summer and early fall crops.

Sources of data: U.S. Bur. Agr. Econ. 1947 Annual Summary of Commerical Truck Crops for Fresh Market. December, 1947.

U. S. Dept. Agr. Agricultural Statistics 1947. p.233.

Table 6 Celery: California Acreage by Counties

Crop and County	Acreage by years					
	1942	1943	1944	1945	1946	1947
<u>Winter</u>						
San Diego	1,000	600	900	850	1,300	1,200
Tulare	50	120	110	290	500	700
Los Angeles	750	500	400	500	500	500
Orange	400	250	100	100	100	100
All others	130	130	90	60	100	70
Total	2,330	1,600	1,600	1,800	2,500	2,570
<u>Spring</u>						
Los Angeles	1,000	750	1,000	1,500	1,800	1,500
Santa Clara	100	50	50	100	150	200
Orange	100	50	50	50	100	100
San Diego	50	30	50	50	50	50
All others	150	70	100	100	150	150
Total	1,400	950	1,250	1,800	2,250	2,000
<u>Late fall</u>						
San Joaquin	5,200	6,000	5,200	6,200	5,000	4,200
Monterey	850	1,400	1,500	2,150	1,600	2,100
Santa Barbara	900	1,300	1,500	1,500	1,400	600
San Luis Obispo	-	-	-	350	50	700
Santa Clara	400	500	600	500	750	600
Los Angeles	600	750	500	400	400	400
All others	500	700	700	800	800	800
Total	8,450	10,650	10,000	11,900	10,000	9,400

Source of data: California Crop and Livestock Reporting Service. Vegetable Crops in California. April 1948.
pp. 13-14.

Table 7 Celery: California State Summary

Year	Acreage			Average yield per acre			Unit value		
	Winter	Spring	Late fall	Winter	Spring	Late fall	Winter	Spring	Late fall
				<u>1/2 crates (65 pounds)</u>				<u>dollars</u>	
1938	1,950	1,850	10,170	753	825	266	.90	1.09	1.31
1939	1,730	1,600	10,300	811	947	319	1.14	.90	1.09
1940	1,700	1,800	9,570	837	884	332	1.22	1.50	1.14
1941	1,700	1,450	9,500	794	845	359	1.40	1.80	1.51
1942	2,330	1,400	8,450	625	735	280	1.70	1.90	3.50
1943	1,600	950	10,650	500	955	335	3.50	3.70	2.25
1944	1,600	1,250	10,000	680	900	320	2.50	3.15	3.25
1945	1,800	1,800	11,900	750	1,130	340	3.15	3.35	3.15
1946	2,500	2,250	10,000	625	970	430	2.60	1.85	1.80
1947	2,570	2,000	9,400	725	1,260	550	3.10	3.90	1.80

Source of data: California Crop and Livestock Reporting Service. Vegetable Crops in California. April, 1948. pp. 14-14.