

# Dairy Products in Food Expense

surveys made in Oakland and in Los Angeles indicate share of dairy products in the family food expense

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*The second of a series of reports of a survey on the consumption of dairy products in urban areas of California made co-operatively by the Department of Home Economics, University of California, California State Department of Agriculture, and United States Department of Agriculture under the authority of the Research and Marketing Act.*

**Dairy products** were a major food expense of 424 Oakland families and 513 Los Angeles families studied in a seven-day sample survey of milk consumption.

The Oakland families spent about one sixth and the Los Angeles families spent one fifth of their food dollar for dairy products during the survey period.

Oakland families on the average spent \$3.84 for dairy products which was 17.9% of their food expenditures, and the Los Angeles families spent \$4.34 which was 19.9% of their food expenditures.

The median total family income of the Los Angeles families for 1950—after federal income tax—was \$4068; that of the Oakland families was \$3835. The Los Angeles families on the average spent \$21.76 a week for food consumed at home; the Oakland families spent \$21.42.

In each of the cities about four fifths of the families spent from \$10 to \$30 a week for food. About half of these families spent between \$10 and \$20 and the other half spent from \$20 to \$30. Some 10% spent from \$30 to \$40. In Los Angeles about 5% spent less than \$10 a week and another 5% spent \$40 or more; in Oakland 3% spent less than \$10 and 5% spent \$40 or more.

## Relation to Food Expense

As shown in the table on this page, the expenditures for dairy products increased when total food expenditures increased.

However, the families who spent the most for food and dairy products, also had the largest families. For example, families in Oakland spending from \$10 to \$20 for food during the week studied averaged about 2.3 persons; those spending \$40 or more averaged five persons per family. In Los Angeles, families spending from \$10 to \$20 for food averaged almost 2.4 persons and those spending \$40 or more averaged 4.7 persons per family. Those in the lower food expenditure class spent \$1.14 per person for dairy products in Oakland and \$1.37 in Los Angeles, while those in the higher expenditure class spent \$1.40 in Oakland and \$1.69 per person in Los Angeles. Al-

though more money was spent for dairy products per family and per person as food expenditures increased, the increase was not as great as increase in total food expenditures: Expenditures for dairy products by these two groups of families did not increase in the same ratio as their total food expenditures.

## Milk Equivalent Units

For their average expenditure of \$3.84 during the week studied, the families in Oakland secured an average of 14.5 quarts of milk equivalent units. For expenditure of \$4.34, the Los Angeles families secured an average of 16.7 quarts in terms of milk equivalent units. Milk equivalent units are approximately the quantity of fluid milk to which the various food products—excluding butter—are equivalent in minerals and protein.

For fluid milk, evaporated milk, cottage and American Cheddar cheese the proportion of milk equivalent units secured exceeded the proportion of money spent for these products. For half and half, cream, and ice cream the proportion of milk equivalent units secured was smaller than the proportion of money spent for these products.

The quantities of dairy products purchased in terms of milk equivalent units increased as families' food expenditures increased. Families spending from \$10 to \$20 a week for food consumed about 10 quarts of dairy products in milk equivalent

units in Oakland and nearly 13 quarts in Los Angeles. For those spending from \$30 to \$40 the amounts increased to nearly 21 quarts in Oakland and 24 quarts in Los Angeles.

## Differences in Expenditures

The Los Angeles families spent an average of \$0.50 per family or 2% of their food dollar more for dairy products than the Oakland families. This was 13% more per family and 11% more per person. They secured 15.6% more milk equivalent units per family and 13.7% more per person than the Oakland families.

The Los Angeles families spent more per family for each of the groups of dairy products except for evaporated milk and butter. For evaporated milk they spent slightly less than the Oakland families, and for butter the same. Proportionally they spent the same for fluid milk, approximately the same for cream, condensed and dry milk, slightly more for half and half and the different kinds of cheese, and slightly less for evaporated milk, ice cream, and butter.

Prices of practically all dairy products were somewhat lower in Los Angeles than in Oakland. Variations in prices arise with the retail store and delivered price of milk and cream and with the type of store in which other products were purchased. When the quantities of the products consumed by families in the two

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**Expenditures for Dairy Products and Quantities Consumed According to Total Food Expenditures**

Weekly food expenditure class	Number of households	Av. no. 21-meal equivalent persons		Average expense for dairy products per household				Total milk equivalent units consumed per household† (quarts)		
		Oak.	L. A.	\$		% of total food expenditure		Oak.	L. A.	
				Oak.	L. A.	Oak.	L. A.			
Less than \$10 . . .	12	28	2.31	1.88	1.44	2.09	18.8	24.8	5.98	9.34
\$10.00-19.99 . . .	174	193	2.32	2.39	2.65	3.27	17.2	21.3	10.12	12.75
\$20.00-29.99 . . .	161	206	3.07	3.19	4.26	4.62	17.9	19.4	16.15	18.28
\$30.00-39.99 . . .	46	49	3.89	4.02	5.74	6.59	17.4	19.5	20.72	23.93
\$40 and over . . .	21	28	5.00	4.73	7.02	7.99	15.3	16.0	27.21	28.32
<b>Total . . . . .</b>	<b>424*</b>	<b>513*</b>	<b>2.93</b>	<b>2.98</b>	<b>3.84</b>	<b>4.34</b>	<b>17.9</b>	<b>19.9</b>	<b>14.46</b>	<b>16.72</b>

\* Includes 10 households in Oakland and 9 households in Los Angeles for whom data on total food expenditures are not available.

† Quantity of fluid milk to which the various food products (excluding butter) are equivalent in minerals and protein.

# DAIRY

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cities were averaged and priced according to the prices in the two areas, the total cost in Oakland varied from \$3.71 to \$3.99 and in Los Angeles from \$3.62 to \$3.93.

## Expense for Fluid Milk

Over one half—52.3% in Oakland and 52.7% in Los Angeles—of the total amount the families spent for dairy products during the week studied was spent for fluid milk.

The bill for fluid milk accounted for over 9% of their total food dollar—9.3% in Oakland and 10.4% in Los Angeles.

The families increased their expenditures for fluid milk as they increased their total food expenditures. For example, families in Oakland who spent from \$10 to \$20 for food, spent \$1.41 for fluid milk and those who spent from \$30 to \$40 spent \$2.88 for fluid milk. In Los Angeles the corresponding expenditures were \$1.62 and \$3.26.

However, the proportion of the weekly expenditures for dairy products for fluid milk remained much the same regardless of the total amount spent for food. When families were classified according to the amount they spent for food, it was found that, with the exception of the families spending less than \$10 a week for food, from 50% to 55% of their expenditures for dairy products was for fluid milk in both cities.

About 90% of the total amount spent for fluid milk was for whole milk—homogenized, plain, multi-vitamin, and extra-fat milks. Of these the most important was homogenized milk for which the families in Oakland spent \$1.43 and in Los Angeles \$1.28 during the week studied.

## Prices for Dairy Products

	Oakland	Los Angeles
Plain, homogenized, Vitamin D milk, qt. (1)	\$.195–\$.205	\$.19–\$.20
Extra fat milk, qt. (1)	.215–.23	.21–.22
Nonfat milk, qt. (1)	.17–.19	.15–.17
Buttermilk, qt. (1)	.17–.19	.16–.19
Chocolate milk, qt. (1)	.19–.20	.19–.20
Half and half, pt. (1)	.26–.28	.24–.27
Table cream, 20%–24% fat, ½ pt. (1)	.23–.27	.22–.23
Whipping cream, 35%–40% fat, ½ pt. (1)	.33–.36	.35–.37
Evaporated milk, 14½ oz. can (2)	.13–.14	.13–.14
Cottage cheese, lb. (2)	.28–.30	.27–.29
American Cheddar cheese, lb. (2)	.69–.72	.65–.67
Ice cream, qt. (2)	.43–.60	.45–.59
Butter, lb. (2)	.79–.84	.78–.86

(1) Prices were those filed by representative dairies with the California State Department of Agriculture, Bureau of Milk Control.

(2) Prices were the medians of those reported by families interviewed.

The Oakland families spent on the average \$0.16 and the Los Angeles families \$0.22 during the week for milk other than whole milk. Most of these expenditures were for low-calorie milks. Each group spent an average of \$0.06 for nonfat milk and \$0.05 for buttermilk.

## Cheese

Expense for cheese was next in importance to that for fluid milk although only a third or less was spent on all kinds of cheese as was spent for all kinds of fluid milk.

Oakland families spent an average of \$0.59 and Los Angeles families \$0.75 for all kinds of cheese during the week studied. These amounts represent 15% and 17% respectively of the total expense for dairy products. For these expenditures they purchased from 19% to 20% of their total milk equivalent units.

More was spent for American Cheddar cheese than for cottage or other kinds of cheese. About 7% of the total expense for dairy products was spent for American Cheddar cheese, about 6% for cot-

tage cheese, and from 3% to 4% for other—hard and soft—cheese.

Expenditures for cheese increased as food expenditures increased. But the proportion of expense for dairy products spent for cheese did not vary much with increased food expenditure. Families spending less than \$10 a week for food spent about 8% of their dairy products expenditures for cottage cheese while those spending larger amounts for food spent from about 5% to 6%. Those spending less than \$20 a week for food spent about 8% of dairy products expenditures for American Cheddar cheese while those spending more for food spent from about 5% to 8% for this cheese.

## Cream, Evaporated Milk

During the week studied Oakland families spent \$0.14 and Los Angeles families \$0.21 on the average for half and half. In Oakland this accounted for 3.7% and in Los Angeles for 4.8% of the average total expenditures for dairy products.

An average of \$0.10 in Oakland and \$0.12 in Los Angeles was spent for all kinds of cream combined. In Oakland \$0.07 and in Los Angeles \$0.04 was spent for whipping cream. Table cream and sour cream each took \$0.03 in Los Angeles, and in Oakland \$0.02 was spent for table cream.

The expenditure for half and half increased from \$0.05 and \$0.06 expended by those spending less than \$10 a week for food to \$0.26 per family in Oakland and \$0.36 per family in Los Angeles by those spending \$30 or more a week for food. The proportion of dairy product expense increased from 4.5% in Oakland and 2.6% in Los Angeles to about 5%.

An average of \$0.16 was spent by the Oakland families and \$0.14 by the Los Angeles families for evaporated milk. This was 4% and 3% respectively of the total expense for dairy products.

However, those families using evapo-

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## Expenditures for Dairy Products

	Average expense per household in a week		Per cent of food dollar		Per cent of expense for all dairy products	
	Oakland	Los Angeles	Oakland	Los Angeles	Oakland	Los Angeles
<b>Fluid milk</b>						
whole	\$1.85	\$2.04	8.6	9.4	48.3	47.1
other	.16	.22	0.7	1.0	4.0	5.1
Half and half	.14	.21	0.7	0.9	3.7	4.8
Cream	.10	.12	0.5	0.6	2.6	2.9
Evaporated milk	.16	.14	0.7	0.6	4.1	3.2
Condensed & dry milk	.03	.03	0.1	0.1	0.8	0.7
Cottage cheese	.21	.26	1.0	1.2	5.6	5.9
American Cheddar						
cheese	.27	.32	1.3	1.5	7.0	7.4
Other cheese	.11	.17	0.5	0.8	2.8	3.9
Ice cream, sherbet and						
ice milk	.39	.41	1.8	1.9	10.1	9.4
Butter	.42	.42	2.0	1.9	11.0	9.6
<b>Total</b>	<b>\$3.84</b>	<b>\$4.34</b>	<b>17.9</b>	<b>19.9</b>	<b>100.0</b>	<b>100.0</b>

## CAPACITY

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ments. Net inshipments of about 115,000 tons would be required in the projected 1955 situation.

### Pastures

About three fifths of all animal unit months—AUM—of grazing in California are on permanent pasture or range land. The other two fifths are on cropland used exclusively for pasture or crop residue feeding. The distribution of all grazing in 1950 and in the projected 1955 attainable situation is estimated in the table on page 2.

Grazing on public lands is a small percentage of the total but it is important to ranchers in certain areas of the State.

Estimates of grazing AUM, as reported in this study are in terms of usage except for open permanent pasture and range in farms where they represent availability. It is assumed that a high percentage of the available irrigated and sudan grass pasture is used. Not all of the available crop residue, and not more than half of the potential grazing on grain land are used.

### Grazing Capacity

The estimated total grazing capacity in 1950 was 24.3 million AUM compared with 22.9 million required by the livestock. The margin of capacity over use, as estimated, amounted to about 6%.

The carrying capacity projected for 1955 is 27.1 million AUM compared with the 26.4 million that would be required by the livestock—a surplus of about 2½%.

The 1955 attainable assumes a larger acreage of rotation—irrigated—pasture and higher production per acre. Irrigated pasture was projected at 7,200,000 AUM in 1955, compared with 5,456,000 AUM in 1950. Production per acre was projected at 9.0 AUM compared with 8.0 AUM in 1950. The higher rate per acre results from better production and management practices.

California has about 18.5 million acres of open permanent pasture and range in farms. The State average yield in 1950 was estimated at .55 AUM per acre, and the projected 1955 attainable yield is .60 AUM. This increase is conservative compared to the ultimate potential based on range research. Research has demonstrated that rotation grazing—as an example—could increase production of range forage on grassland by 25% over much of the State.

The full potential in range production would be difficult to attain. Rotation grazing on the range land in farms, for instance, would require an estimated 2,000

miles of additional stock fence; in many cases it would require the development of more stock water facilities; and more ranch labor would be needed. The total increase in production from partial adoption of these practices is projected at about 8% by 1955.

Full utilization of grazing also becomes more difficult to attain as the maximum is approached. Pasturage must be used in place, whereas hay and grain can be brought to the livestock. However, with modern truck transportation, livestock can be moved to where pasturage is available and once a seasonal pattern has been established—geographically—feed and livestock can be co-ordinated more readily.

To be continued

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## FRUIT DROP

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but not significantly more, were found under sprayed trees.

Significant differences in total yield were found only in the second Redlands orchard.

### Timing of Application

Fruit drop from nonsprayed Washington Navel orange trees in the three experimental orchards averaged about one field box—approximately 150 oranges—per tree for the season from October to late April or May. In such aggregates of dropped fruit, sound oranges ranged from 3.83 to 33.96 per tree, the remainder of the fruits being culls.

In the present experiments the drop of sound fruit was serious near the end of the season—April—May. This would indicate the use of a preharvest spray only to hold the fruit until late in the season. Other data on Washington Navel oranges showed that drop of sound fruit began in December and was serious from the start. When 2,4-D was used as an oil amendment in an August pest control spray very few sound oranges—4.3 per tree—dropped before harvest the following May. A second application of 2,4-D as a water spray during the winter saved additional sound oranges, but these were necessarily few.

Fruit-drop records collected in these experiments show that the four classes of fruit dropping greatest numbers from nonsprayed trees were the following, in decreasing order: split, frozen, sound, and black rot.

The mean reduction in drop of sound

fruit for all times of spraying in all three orchards was 70.7%. Drop of frozen fruit was reduced about half as much—35.5%. Drop of fruit infected with fungi, including most split fruit, was reduced about one fourth as much as drop of sound fruit.

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rated milk spent considerably more than these amounts during the week. In Oakland 46% and in Los Angeles 37% of the families used evaporated milk during the week. The average amount spent by these families was \$0.33 in Oakland and \$0.38 in Los Angeles.

The actual expense for evaporated milk did not vary greatly with increased food expenditures but the proportion of expense for dairy products tended to decline.

### Butter, Ice Cream

The families surveyed spent an average of \$0.42 during the week for butter. This amount accounted for 11% of the Oakland families' expenditures for dairy products and 9.6% of that of the Los Angeles families. It amounted to 2.1% of the total food dollar of the Oakland families and 1.9% of the families in Los Angeles.

The amount spent for butter increased from \$0.18 spent by those spending \$10 or less a week for food to \$1.01—Oakland—and \$0.77—Los Angeles—by those spending \$40 or more for food. But the proportion of butter to total dairy-product expenditure varied comparatively little.

Families in Oakland spent an average of \$0.39 and those in Los Angeles spent \$0.41 for ice cream, sherbet, and ice milk. These products accounted for approximately 10.1% of the average expense for dairy products in Oakland and 9.4% in Los Angeles.

Only an average of \$0.03 in Oakland and \$0.04 in Los Angeles was spent for sherbet and ice milk, accounting for only 0.8% and 0.9% respectively of the total expense for dairy products.

The proportion of dairy products expenditures spent for ice cream increased from about 7% in Oakland and 2.3% in Los Angeles for those spending less than \$10 a week for food to about 11% for those spending \$30 or more a week for food.

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