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**HANDBOOK OF  
COOPERATIVES PROCESSING  
HORTICULTURAL PRODUCTS  
1947-48**

**By  
ANNE L. GESSNER**

**COOPERATIVE RESEARCH AND SERVICE DIVISION  
FARM CREDIT ADMINISTRATION  
UNITED STATES DEPARTMENT OF AGRICULTURE  
WASHINGTON, D. C.**

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COOPERATIVE RESEARCH AND SERVICE DIVISION

HAROLD HEDGES, CHIEF

JOSEPH G. KNAPP, ASSOCIATE CHIEF

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HANDBOOK OF COOPERATIVES  
PROCESSING HORTICULTURAL PRODUCTS  
1947-48

By

Anne L. Gessner  
*Agricultural Economist*

This handbook has been developed from information supplied annually by cooperatives to the history and Statistics Section, Cooperative Research and Service Division, Farm Credit Administration. It contains production data on canned and frozen fruits and vegetables, dried fruits, nuts, wine, and other horticultural products processed by cooperatives in the 1947-48 season.

NUMBER OF PROCESSING HORTICULTURAL COOPERATIVES

A total of 139 cooperative plants were canning and freezing fruits and vegetables in the 1947-48 season (table 1 and fig. 1). Of these, 27 plants were canning only vegetables; 50 were canning, brining, or pressing for juice noncitrus fruits and berries; 14 were canning both vegetables and noncitrus fruits and berries; and 17 were canning citrus juices, sections, and concentrates. Three of these 17 citrus plants were also freezing juice or concentrate. There were 31 other cooperative freezing plants operating in 1947-48. Twelve of these were freezing noncitrus fruits and berries; 2 were freezing fruits, berries, and vegetables; and 17 were both canning and freezing fruits, berries, and/or vegetables.

The 139 canning and freezing plants operating in 1947-48 are three less than the 142 plants operating in 1946-47. One plant each in Kentucky, New Mexico, and Tennessee discontinued operations. This left these States with no cooperative fruit and vegetable canning or freezing plants. California gained 3 - all noncitrus - a canning plant, a freezing plant, and a plant doing both canning and freezing. Michigan, New York, and Texas each gained one plant. Washington lost 6 plants and Florida and Wisconsin lost one each. By including mushroom canning plants in the vegetable-canning category in 1947-48, one plant was added in Delaware and one in Pennsylvania. All other States had the same number of cooperative processing plants operating in 1947-48 as in 1946-47.

In addition to the canning and freezing associations, whose processing plants are included in table 1 and figure 1, a number of cooperatives did other types of processing of horticultural products in the 1947-48 season. Eighteen associations dried fruits and 8 associations marketed tree nuts. Four cooperatives that marketed dried fruits and two that

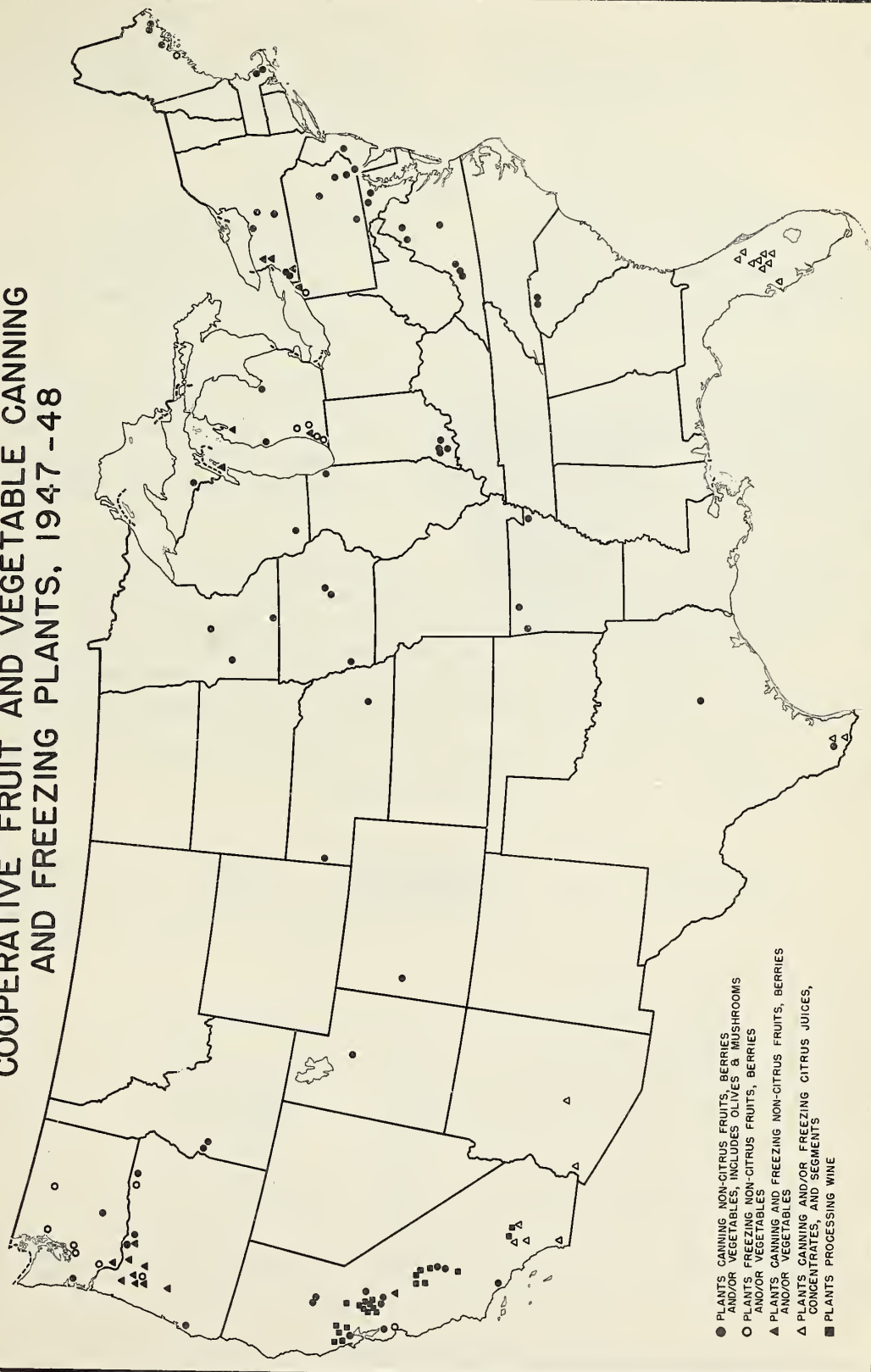
NOTE: Appreciation is expressed to H. C. Hensley for use of photographs and to Grace Wanstall for her cooperation.

Table 1. - Cooperative plants canning and freezing fruits and vegetables, 1947-48<sup>1</sup>

State	Total number of plants	Number of cooperative plants producing						
		Canned vegetables <sup>2</sup>	Canned non-citrus fruits and berries <sup>3</sup>	Canned non-citrus fruits, berries, and vegetables <sup>3</sup>	Frozen non-citrus fruits and berries	Frozen non-citrus fruits, berries, and vegetables	Canned and frozen non-citrus fruits, berries, and/or vegetables	Canned and/or frozen citrus juices, concentrates, sections, and by-products
Arizona-----	2	-	-	-	-	-	-	2
Arkansas-----	3	3	-	-	-	-	-	-
California-----	38	1	28	3	1	-	1	4
Colorado-----	1	-	-	1	-	-	-	-
Delaware-----	1	1	-	-	-	-	-	-
Florida-----	9	-	-	-	-	-	-	9
Idaho-----	2	1	1	-	-	-	-	-
Illinois-----	1	-	1	-	-	-	-	-
Indiana-----	4	4	-	-	-	-	-	-
Iowa-----	3	2	1	-	-	-	-	-
Maine-----	4	-	2	1	1	-	-	-
Maryland-----	2	2	-	-	-	-	-	-
Massachusetts---	2	-	2	-	-	-	-	-
Michigan-----	9	1	-	2	4	-	2	-
Minnesota-----	3	3	-	-	-	-	-	-
Nebraska-----	2	2	-	-	-	-	-	-
New Jersey-----	1	-	1	-	-	-	-	-
New York-----	9	-	3	3	-	-	3	-
Oregon-----	14	-	3	1	1	1	8	-
Pennsylvania---	6	1	2	1	-	1	1	-
South Carolina--	2	-	2	-	-	-	-	-
Texas-----	4	2	-	-	-	-	-	2
Utah-----	1	-	-	1	-	-	-	-
Virginia-----	6	3	2	1	-	-	-	-
Washington-----	8	-	2	-	5	-	1	-
Wisconsin-----	2	1	-	-	-	-	1	-
Total-----	139	27	50	14	12	2	17	17

<sup>1</sup>Glass and bottled pack included.<sup>2</sup>Includes mushrooms.<sup>3</sup>Includes juice and brining or pressing operations for further processing.

FIGURE 1  
**COOPERATIVE FRUIT AND VEGETABLE CANNING  
 AND FREEZING PLANTS, 1947-48**



- PLANTS CANNING NON-CITRUS FRUITS, BERRIES AND/OR VEGETABLES; INCLUDES OLIVES & MUSHROOMS
- PLANTS FREEZING NON-CITRUS FRUITS, BERRIES AND/OR VEGETABLES
- ▲ PLANTS CANNING AND FREEZING NON-CITRUS FRUITS, BERRIES AND/OR VEGETABLES
- △ PLANTS CANNING AND/OR FREEZING CITRUS JUICES, CONCENTRATES, AND SEGMENTS
- PLANTS PROCESSING WINE



marketed tree nuts also canned or froze fruits and vegetables and are included in table 1 and figure 1. The figures for the dried fruit and tree nut associations include only centralized or federated associations and not the local associations. Six associations processed varying quantities of other horticultural products, such as dehydrated potatoes, potato flour, potato starch, and dried peppers.

### SALES OF COOPERATIVE PACK

Sales of the major processed horticultural products, marketed by cooperatives in the 1947-48 season, are shown in table 2, together with the number of associations reporting and the percentage each commodity group represented of the total for all products (fig. 2).

Total sales of \$228,652,755 in 1947-48 are considerably lower than sales of \$284,655,620 reported in 1946-47. Greatest decrease is indicated for canned and frozen deciduous fruits, berries, and vegetables, \$76,046,620, compared with \$107,141,388 in 1946-47. Sales of wine also decreased with total sales reported amounting to \$17,085,935 compared with \$25,627,541 in 1946-47.

By including dates the total for dried fruits was raised somewhat in 1947-48, \$38,628,234 compared with \$38,574,049 in 1946-47. Some reporting agencies do not classify dates as a dried fruit, but for purposes of this analysis they are included in dried fruits classification. Sales of tree nuts were down somewhat, \$38,331,207 compared with \$42,139,922 in 1946-47, as were olive sales, \$3,210,086 compared with

Table 2. - Sales of major horticultural products processed by cooperatives, 1947-48

Commodity	Number of associations reporting	Sales 1947-48	Percent of total
Deciduous fruits, berries and vegetables <sup>1</sup> (canned, frozen, or brined)-----	<sup>2</sup> 75	\$76,046,620	33.2
Citrus juices, segments, concentrates, and byproducts-----	15	55,082,986	24.1
Dried fruits <sup>3</sup> -----	<sup>2</sup> 18	38,628,234	16.9
Tree nuts-----	<sup>2</sup> 8	38,331,207	16.8
Olives-----	5	3,210,086	1.4
Wine-----	19	17,085,935	7.5
Other horticultural products-----	4	267,687	0.1
Total-----	<sup>2</sup> 138	228,652,755	100.0

<sup>1</sup>Includes mushrooms.

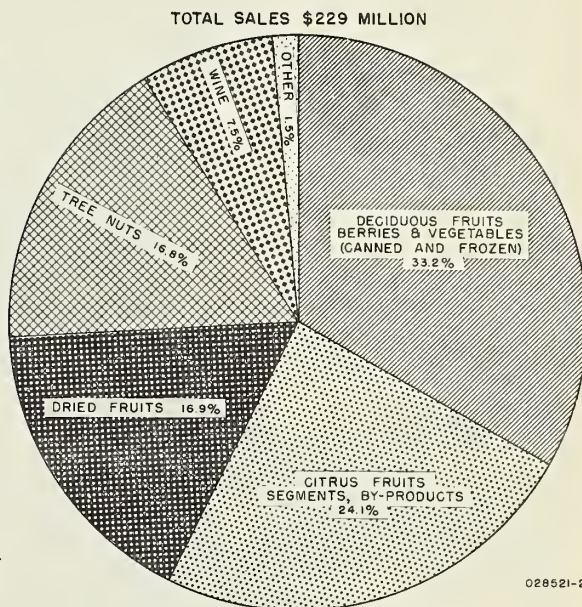
<sup>2</sup>Four of the associations marketing dried fruits and two of those marketing nuts are also included in the 75 associations canning and freezing deciduous fruits, berries, and vegetables.

<sup>3</sup>Includes dates.

\$4,579,724 in 1946-47. The sales, for citrus juices, segments, concentrates, and byproducts amounted to \$55,082,986 in 1947-48 compared with \$65,412,219 in 1946-47.

Citrus juices and other citrus products accounted for a slightly larger proportion of the total sales made by cooperatives in the year, 24.1 percent in 1947-48 compared with 23.0 percent in 1946-47. Dried fruits and tree nuts were up somewhat on a percentage basis, accounting for 16.9 and 16.8 percent respectively of total cooperative sales, compared with 13.6 and 14.8 percent in 1946-47. On the other hand, two commodity groups showed substantial percentage decreases. These were canned and frozen fruits and vegetables, which dropped from 37.6 percent to 33.2 of total sales made by cooperatives in 1947-48, and wine, which dropped from 9.0 percent in 1946-47 to 7.5 percent in 1947-48.

FIGURE 2  
SALES OF MAJOR PROCESSED HORTICULTURAL  
PRODUCTS BY COOPERATIVES, CLASSIFIED  
BY COMMODITY GROUPS  
1947-48



### CANNED FRUIT PACK

Cooperatives canned about 7<sup>1</sup> million cases of the principal noncitrus fruits and berries in the 1947-48 season. Their production of these fruits amounted to 12 percent of the total United States pack in the 1947-48 season (table 3 and fig. 3).

Berries were the most important fruit canned by cooperatives, measured in terms of quantity or volume packed, just as they were in the two previous pack years. Cooperatives in 1947-48 with 2.6 million cases accounted for more than half of the United States total of all canned berries, including cranberries. Cooperatives packed about a fifth of the red sour pitted cherries and more than a third of the canned figs. They also packed over 16 percent of the pears, over 14 percent of the plums and prunes, and somewhat under 10 percent of all the apricots and sweet cherries canned in 1947-48. Peaches, canned by cooperatives, increased from slightly more than 950,000 cases in 1946-47 to almost 1.2 million cases in 1947-48, or 6.2 percent of the United States total, compared with 4.7 percent in the 1946-47 season.

<sup>1</sup>In addition to the principal noncitrus fruits and berries, they canned 3.3 million cases of miscellaneous fruit products and juices. See footnote 3, table 3.



*Six No. 10 cans when filled with pears quickly move away and six empty cans take their place automatically before the filler. Tri-Valley Packing Association, San Francisco, Calif.*

Berries, peaches, and pears accounted for 37.5, 17.0, and 13.8 percent respectively, of all fruits canned by cooperatives in the 1947-48 season.

### CANNED VEGETABLE PACK

Reporting cooperatives processed nearly 6.1<sup>2</sup> million cases of the principal canned vegetables, on the basis of 24 No. 2 cans to the case, in 1947-48. They accounted for 4.3 percent of these vegetables canned in the United States in 1947-48 (table 4, fig. 4).

Cooperatives packed slightly over a fourth of all the carrots canned in the United States in the 1947-48 season. They accounted for more than 16 percent of the beets, 11 percent of the green and wax beans, and slightly under 10 percent of the pumpkin and squash. They produced more than 7 percent of all the spinach and slightly under 5 percent of the sweet corn canned in 1947-48. Cooperatives also packed a large volume

<sup>2</sup>In addition to the principal canned vegetables, cooperatives also packed 1.6 million cases of miscellaneous vegetables. See footnote 2, table 4.

Table 3. - *Principal canned fruits: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1947-48*

Commodity	Actual cases				Cooperative pack as a percent of United States pack
	Cooperative pack		United States pack <sup>1</sup>		
	Thousands of cases	Percent of pack	Thousands of cases	Percent of pack	
Apples and applesauce-----	469	6.7	8,326	14.4	5.6
Apricots-----	272	3.9	3,262	5.6	8.3
Berries <sup>2</sup> -----	2,615	37.5	5,124	8.9	51.0
Cherries, red pitted-----	456	6.5	2,397	4.1	19.0
Cherries, sweet-----	53	0.8	643	1.1	8.2
Figs-----	294	4.2	831	1.4	35.4
Fruit cocktail and salad----	302	4.3	9,636	16.7	3.1
Peaches-----	1,187	17.0	19,172	33.1	6.2
Pears-----	958	13.8	5,931	10.2	16.2
Plums and prunes-----	371	5.3	2,574	4.5	14.4
<b>Total<sup>3</sup>-----</b>	<b>6,977</b>	<b>100.0</b>	<b>57,896</b>	<b>100.0</b>	<b>12.0</b>

<sup>1</sup>From "Canned Food Pack Statistics: 1947," National Cannery Association.

<sup>2</sup>Includes cranberries and sauce.

<sup>3</sup>Other fruits processed by cooperatives amounting to more than 3.3 million cases included: Apple butter, jellies, and preserves, 975 thousand cases; noncitrus juices (grape, apple, cherry, pear, cider and cranberry cocktail), 2.4 million cases; and all other (grapes, apricot puree, etc.) 2 thousand cases.

of different varieties of dried beans. Inasmuch as United States figures on this item have not been compiled since 1946-47, there is no satisfactory basis for computing the cooperative pack as a percent of the United States total. The 983,000 cases of dried beans processed by cooperatives in 1947-48 is comparable to the 965,000 cases they canned in 1945-46 when they accounted for 15 percent of all varieties of dried beans canned in the United States.

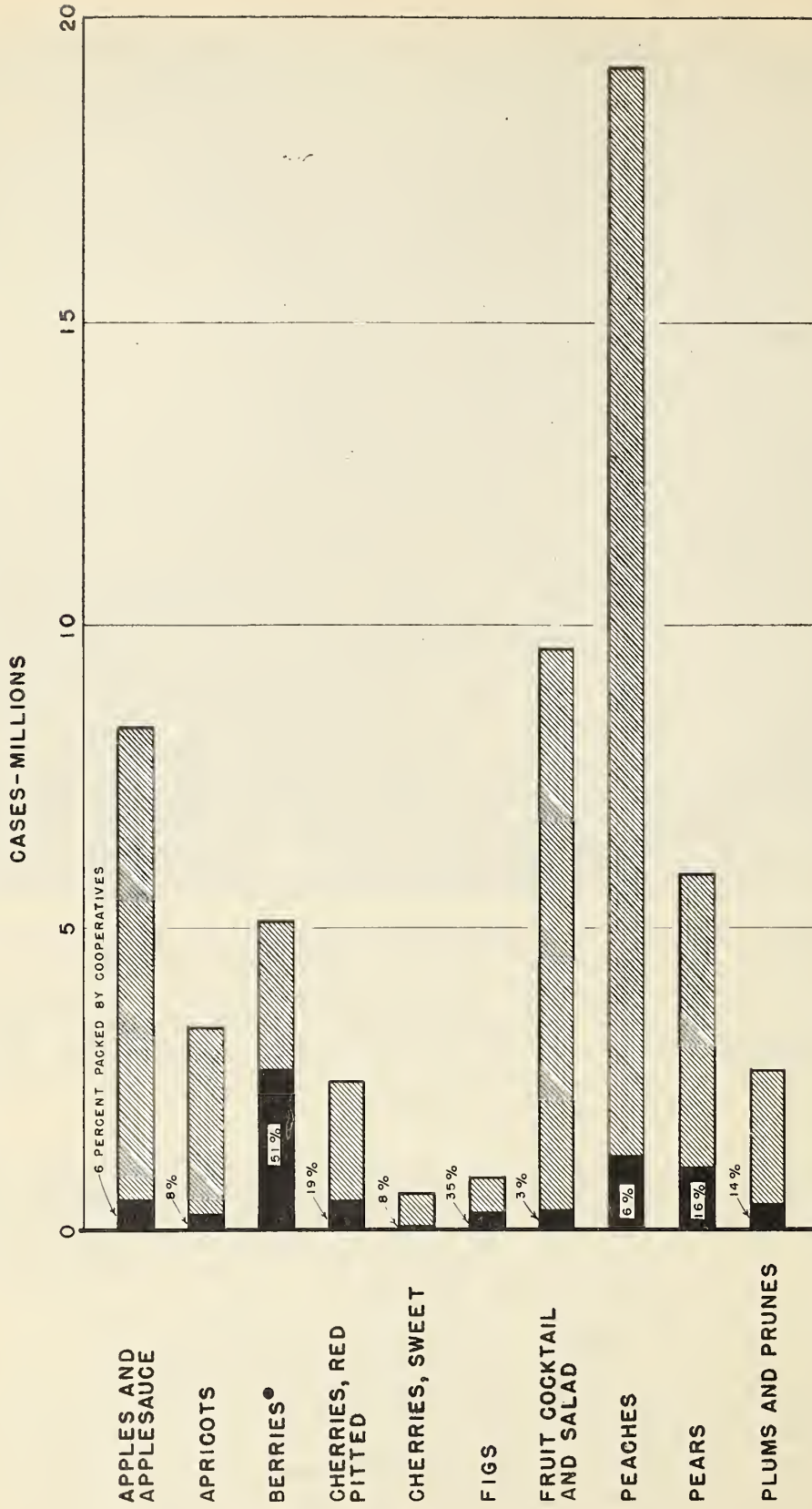
Green and wax beans, amounting to almost 1.5 million cases, accounted for approximately a fourth of the cooperative pack in 1947-48. Corn was next with almost 19 percent, followed by tomatoes with about 16 percent, and peas with a little over 11 percent of the total cooperative pack of the major canned vegetables in 1947-48.

#### NUMBER OF ASSOCIATIONS FREEZING

The number of cooperative associations freezing noncitrus fruits, berries, and vegetables in the 1947-48 season was 31, representing an increase of 9 associations over the 22 engaged in this type of processing in the 1946-47 season. Seventeen of these 31 associations, or more than half of them, were both canning and freezing noncitrus fruits,

FIGURE 3

# U.S. PRODUCTION OF PRINCIPAL CANNED NONCITRUS FRUITS AND BERRIES AND PERCENT PACKED BY COOPERATIVES, 1947-48



NOTE. CASE BASIS, ACTUAL

\*INCLUDES CRANBERRIES AND SAUCE

SOURCE: U.S. DATA FROM CANNED FOOD PACK STATISTICS: 1947, NATIONAL CANNERS ASSOCIATION

028621-3

Table 4. - *Principal canned vegetables: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1947-48*

(BASIS 24 NO. 2 CANS)

Commodity	Cooperative pack		United States pack <sup>1</sup>		Cooperative pack as a percent of United States pack
	Thousands of cases	Percent of pack	Thousands of cases	Percent of pack	
Asparagus-----	-	-	3,833	2.7	-
Beans, green and wax-	1,498	24.6	13,091	9.1	11.4
Beans, green lima----	27	0.4	2,204	1.5	1.2
Beets-----	551	9.0	3,382	2.4	16.3
Carrots-----	250	4.1	976	0.7	25.6
Corn-----	1,140	18.7	26,089	18.2	4.4
Peas-----	691	11.3	33,119	23.2	2.1
Pumpkin and squash---	304	5.0	3,387	2.4	9.0
Spinach-----	291	4.8	3,909	2.7	7.4
Tomatoes-----	957	15.7	27,709	19.4	3.5
Tomato juice-----	324	5.3	19,506	13.6	1.7
Tomato pulp and puree	66	1.1	5,871	4.1	1.1
Total <sup>2</sup> -----	6,099	100.0	143,076	100.0	4.3

<sup>1</sup>From "Canned Food Pack Statistics: 1947," National Cannery Association.

<sup>2</sup>Other vegetables packed by cooperatives amounted to more than 1.6 million cases. These were (in thousands of cases): Black eye peas, 74; greens (mustard, turnip, kale), 51; mushrooms, 61; sauerkraut, 9; succotash, 1; tomato cocktail, 181; tomato paste, 242; all varieties of dried beans, 983.

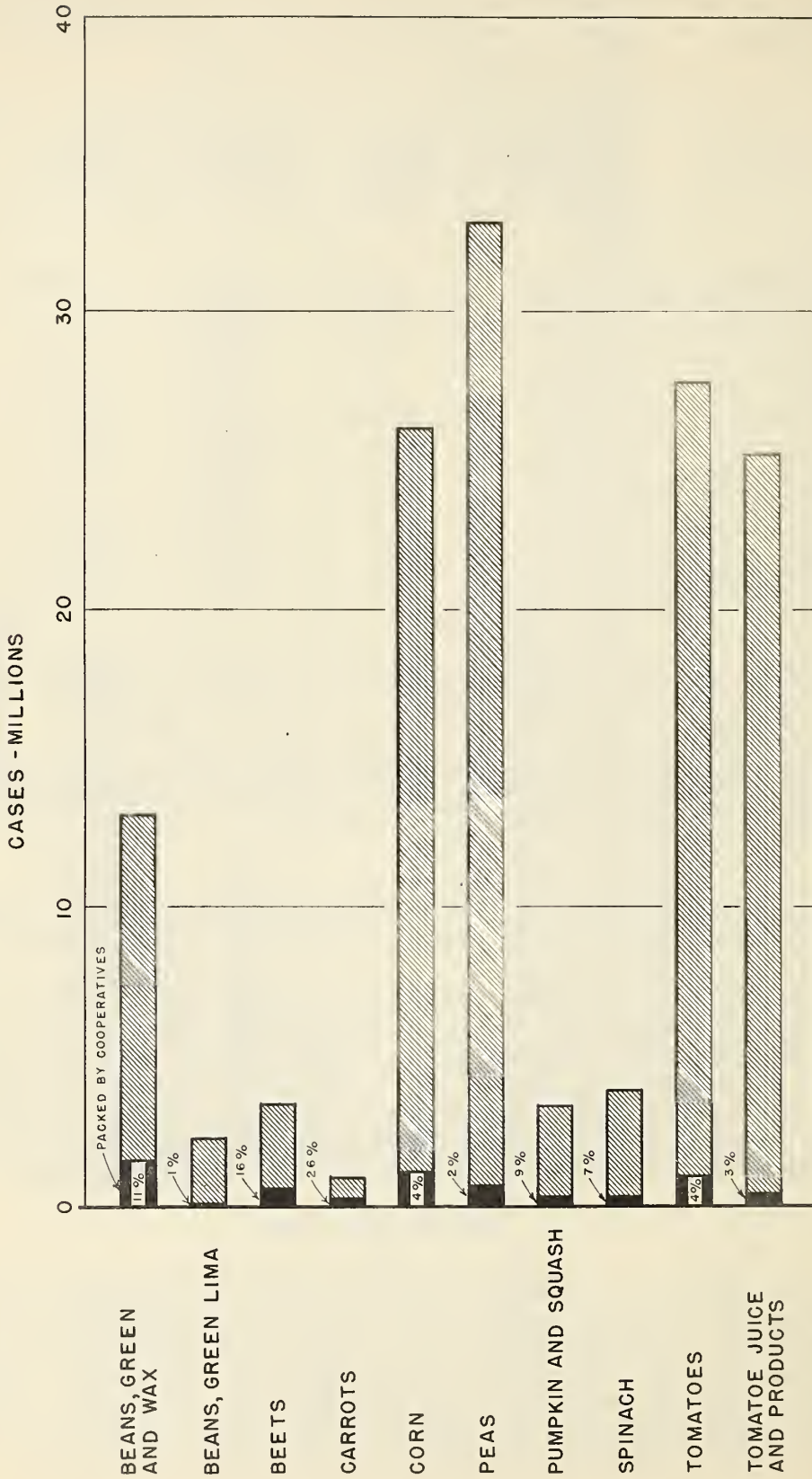
berries, and vegetables; 2 were freezing noncitrus fruits, berries, and vegetables; and the remaining 12 were freezing only fruits and berries.

More than half of these associations were on the Pacific Coast, with 10 located in Oregon, 6 in Washington, and 2 in California. The East North Central area ranked next to the Pacific with 7 associations engaged in freezing in 1947-48, 6 of which were located in Michigan and one in Wisconsin. The middle Atlantic area was third, with 3 cooperative freezers in New York and 2 in Pennsylvania. The only other cooperative fruit and vegetable freezing plant was in New England.

#### FROZEN FRUIT PACK

The total volume of frozen noncitrus fruits processed by cooperatives in the 1947-48 season approximately doubled compared with 1945-46. Cooperatives reported processing a total of 58,639,587 pounds of the principal frozen noncitrus fruits and berries in 1947-48 compared with 29,351,648 pounds in 1945-46 (table 5 and figs. 5 and 6). Percentage-wise this represented 17.5 percent of the total United States pack of the principal noncitrus fruits and berries frozen in 1947-48.

FIGURE 4  
 U.S. PRODUCTION OF PRINCIPAL CANNED VEGETABLES, AND PERCENT  
 PACKED BY COOPERATIVES, 1947-48



NOTE: BASIS 24 No. 2 CANS

SOURCE: U.S. DATA FROM CANNED FOOD PACK STATISTICS: 1947, NATIONAL CANNERS ASSOCIATION

029521-4

Table 5. - *Principal frozen fruits: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1947-48*

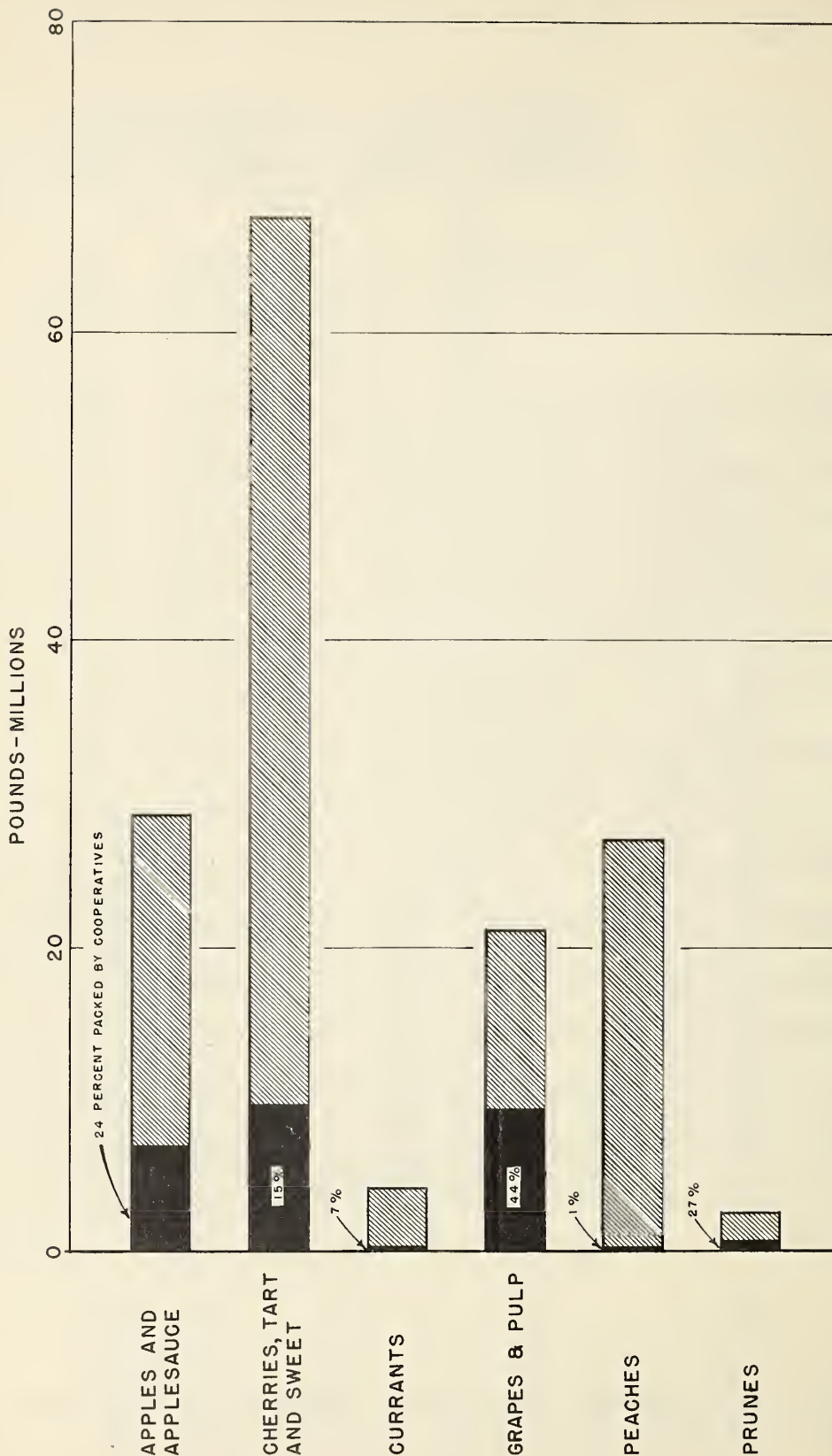
Commodity	Cooperative pack		United States pack <sup>1</sup>		Cooperative pack as a percent of United States pack
	Number of pounds	Percent of pack	Number of pounds	Percent of pack	
Apples and applesauce-----	6,953,488	11.9	28,572,797	8.6	24.3
Apricots-----	-	-	6,006,617	1.8	-
Cherries, tart and sweet-----	9,877,387	16.9	67,359,145	20.1	14.7
Grapes and pulp-----	9,300,365	15.9	20,974,821	6.3	44.3
Peaches-----	219,000	0.4	27,034,119	8.1	0.8
Prunes-----	778,691	1.3	2,842,548	0.9	27.4
Blackberries-----	3,876,578	6.6	14,509,543	4.3	26.7
Blueberries-----	256,700	0.4	5,406,636	1.6	4.7
Boysenberries-----	1,670,901	2.8	12,495,410	3.7	13.4
Currants-----	301,298	0.5	4,089,237	1.2	7.4
Gooseberries-----	-	-	93,040	(2)	-
Loganberries-----	511,184	0.9	2,299,021	0.7	22.2
Raspberries, black--	1,135,810	1.9	7,115,935	2.1	16.0
Raspberries, red----	9,986,723	17.0	25,401,301	7.6	39.3
Strawberries-----	13,648,714	23.3	109,035,621	32.6	12.5
Youngberries-----	122,748	0.2	1,160,999	0.4	10.6
Total-----	58,639,587	100.0	334,396,790	100.0	17.5

<sup>1</sup>From "Frozen Food Statistics: 1947," National Association of Frozen Food Packers.

<sup>2</sup>Less than .05 percent.

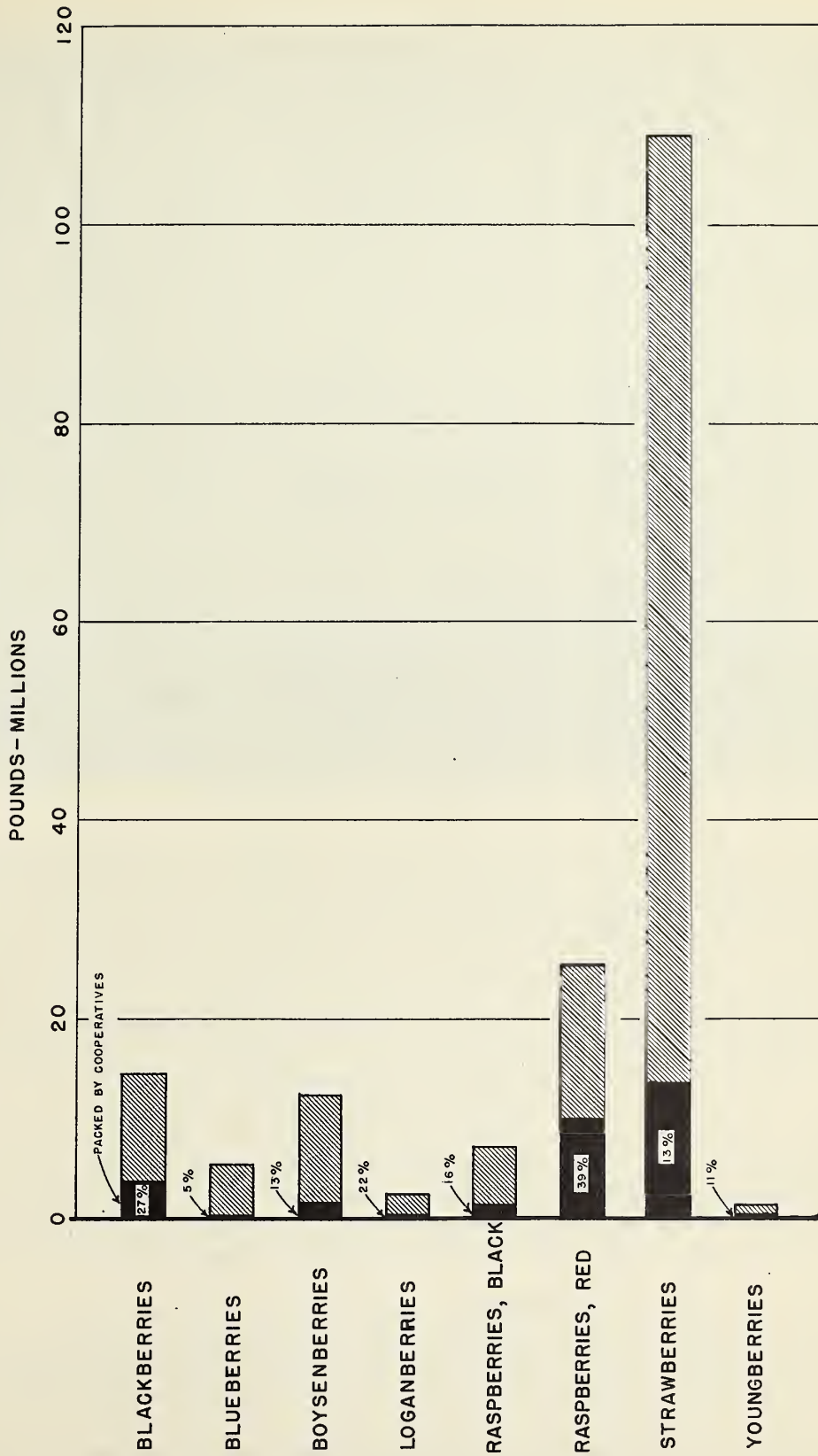


FIGURE 5  
 U.S. PRODUCTION OF PRINCIPAL FROZEN NONCITRUS FRUITS, AND PERCENT  
 PACKED BY COOPERATIVES, 1947-48



SOURCE: U.S. DATA FROM FROZEN FOOD STATISTICS: 1947, NATIONAL ASSOCIATION OF FROZEN FOOD PACKERS

FIGURE 6  
 U.S. PRODUCTION OF PRINCIPAL FROZEN BERRIES, AND PERCENT  
 PACKED BY COOPERATIVES, 1947-48



SOURCE: U.S. DATA FROM FROZEN FOOD STATISTICS: 1947, NATIONAL ASSOCIATION OF FROZEN FOOD PACKERS

028521-6

On an individual commodity basis, cooperatives in 1947-48 packed almost two-fifths of the total United States production of frozen red raspberries and a little over two-fifths of the grapes and pulp; a fourth or more of the apples and applesauce, prunes, and blackberries; and somewhat less than a fourth of the loganberries. In addition, they accounted for 16 percent of the United States pack of black raspberries, and between 10 to 15 percent of the cherries (tart and sweet), boysenberries, strawberries, and youngberries. The proportion of the United States pack which was frozen by cooperatives was smaller for peaches than for any of the other principal fruits and amounted to less than 1 percent of the total quantity of peaches frozen in 1947-48.

On the basis of the volume frozen by cooperatives only, strawberries were the most important item, amounting to almost a fourth of the total cooperative pack. Red raspberries and cherries were of about equal importance in the cooperative pack, 17 percent each, followed closely by grapes and grape pulp with 16 percent. Apples accounted for almost 12 percent and blackberries for about 7 percent of the cooperative volume in 1947-48.

In analyzing the individual items it is interesting to note that in 1947-48 strawberries represented a larger part of the cooperative pack than red raspberries for the first time in three seasons. Contrary to the industry pattern, red raspberries were more important than strawberries, as a percent of the cooperative pack, both in 1945-46 and 1946-47. In 1947-48, however, the cooperative pack followed the industry pattern, with strawberries in the lead.

Neither apricots nor gooseberries were frozen by cooperatives in the 1947-48 season although they had accounted for small percentages of the cooperative pack in each of the two previous seasons. Peaches dropped from more than 8 percent of the cooperative pack in 1945-46 to less than 1 percent in 1947-48. One association which had frozen both apricots and peaches in the two previous seasons processed neither item in 1947-48, and another association which had previously frozen peaches and gooseberries was not operating as a cooperative in 1947-48.

#### FROZEN VEGETABLE PACK

The volume of the principal vegetables frozen by cooperatives dropped from more than 16 million pounds in 1946-47 to less than 7 million pounds in 1947-48. This represented 2.1 percent of the total United States pack of these commodities in 1947-48 (table 6 and fig. 7).

Carrots, frozen by cooperatives, accounted for more than a fourth of the total United States carrot pack in 1947-48. Cooperatives packed about a fifth of the United States total production of frozen corn, cut and on-the-cob, and more than 6 percent of the frozen green snap beans.

As a percent of cooperative pack, corn and green snap beans were the two most important vegetables, amounting to about 38 and 29 percent,



*Tray of cartons of cut corn ready for the sharp freeze room. Gresham (Oreg.) Berry Growers Cooperative.*

respectively, of the cooperative total in 1947-48. The cut corn frozen by cooperatives was more than double that frozen on the cob on a pound basis.

The cooperative packs of green snap beans, corn, and peas were all under those for 1946-47 on a pound basis. The quantity of corn was less than half that processed by cooperatives in 1946-47, and peas amounted to less than 10 percent of the 1946-47 volume. This is accounted for in a large measure by the fact that a former Pacific Coast cooperative was no longer operating as a cooperative in 1947-48. This one association had frozen more than 90 percent of the total volume of peas about 60 percent of the corn, and somewhat less than 10 percent of the green snap beans processed by cooperatives in 1946-47.

#### CONTAINER SIZES OF FROZEN PACK

The percentages of the principal frozen fruits packed in each container size are shown in table 7. For more than half the volume cooperatives reported freezing in the 1947-48 season no container sizes were designated. The data for the previous handbook on the 1945-46 and 1946-47 seasons are more satisfactory than for the 1947-48 season with

Table 6. - *Principal frozen vegetables: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1947-48*

Commodity	Cooperative pack		United States pack <sup>1</sup>		Cooperative pack as a percent of United States pack
	Number of pounds	Percent of pack	Number of pounds	Percent of pack	
Asparagus-----	186,828	2.8	10,737,171	3.4	1.7
Beans, green snap-----	1,916,025	28.5	30,910,825	9.8	6.2
Beans, lima-----	155,609	2.3	67,577,689	21.3	0.2
Broccoli-----	--	-	10,613,616	3.4	-
Carrots-----	785,730	11.7	2,904,551	0.9	27.1
Cauliflower-----	47,940	0.7	4,831,018	1.5	1.0
Corn - cut-----	1,727,874	25.7	26,559,146	8.4	6.5
Corn-on-cob-----	803,965	12.0	6,064,362	1.9	13.3
Peas-----	337,049	5.0	131,785,783	41.6	0.3
Rhubarb-----	203,975	3.0	1,537,566	0.5	13.3
Spinach-----	557,085	8.3	23,279,294	7.3	2.4
Total-----	6,722,080	100.0	316,801,021	100.0	2.1

<sup>1</sup>From "Frozen Food Pack Statistics: 1947," National Association of Frozen Food Packers.

respect to container size designations. This is due in a large measure to the fact that considerable correspondence was required for the first handbook in order to get the quantities of frozen fruits and vegetables accurately reported on the annual survey form. Therefore, when letters were written, every effort was made to get the data reported according to the major container-size groupings. Inasmuch as most cooperatives were properly reporting their frozen packs by commodities and volume in the 1947-48 season, no follow-up was made for container-size data.

Almost a third of the total volume of fruit packed by cooperatives was packed in the large institutional sizes, with barrels ranking next in importance and accounting for slightly over 7 percent of the total. The small retail pack ranked third, with almost 4 percent going into containers with a capacity of 1 pound or less. The small institutional pack with a capacity ranging over 1 pound through 10 pounds was least important and accounted for about 2 percent of the total.

When the volume for which no container sizes were designated is excluded from the analysis, the large institutional container was employed for almost 72 percent of the pack for which sizes were specified. Barrels took care of about 16 percent; retail containers about half as much, or 8.3 percent; and the balance of 4.2 percent was packed in the small institutional sizes.

The percentages of each of the principal frozen vegetables packed in the different container-size groups are shown in table 8. No size classification was specified for almost half of the total volume reported by cooperatives in the 1947-48 season. More than 27 percent of the total was packed in retail size containers of 1-pound capacity or less; about 8 percent was packed in the small institutional sizes over 1 pound

FIGURE 7

U.S. PRODUCTION OF PRINCIPAL FROZEN VEGETABLES, AND PERCENT PACKED BY COOPERATIVES, 1947-48

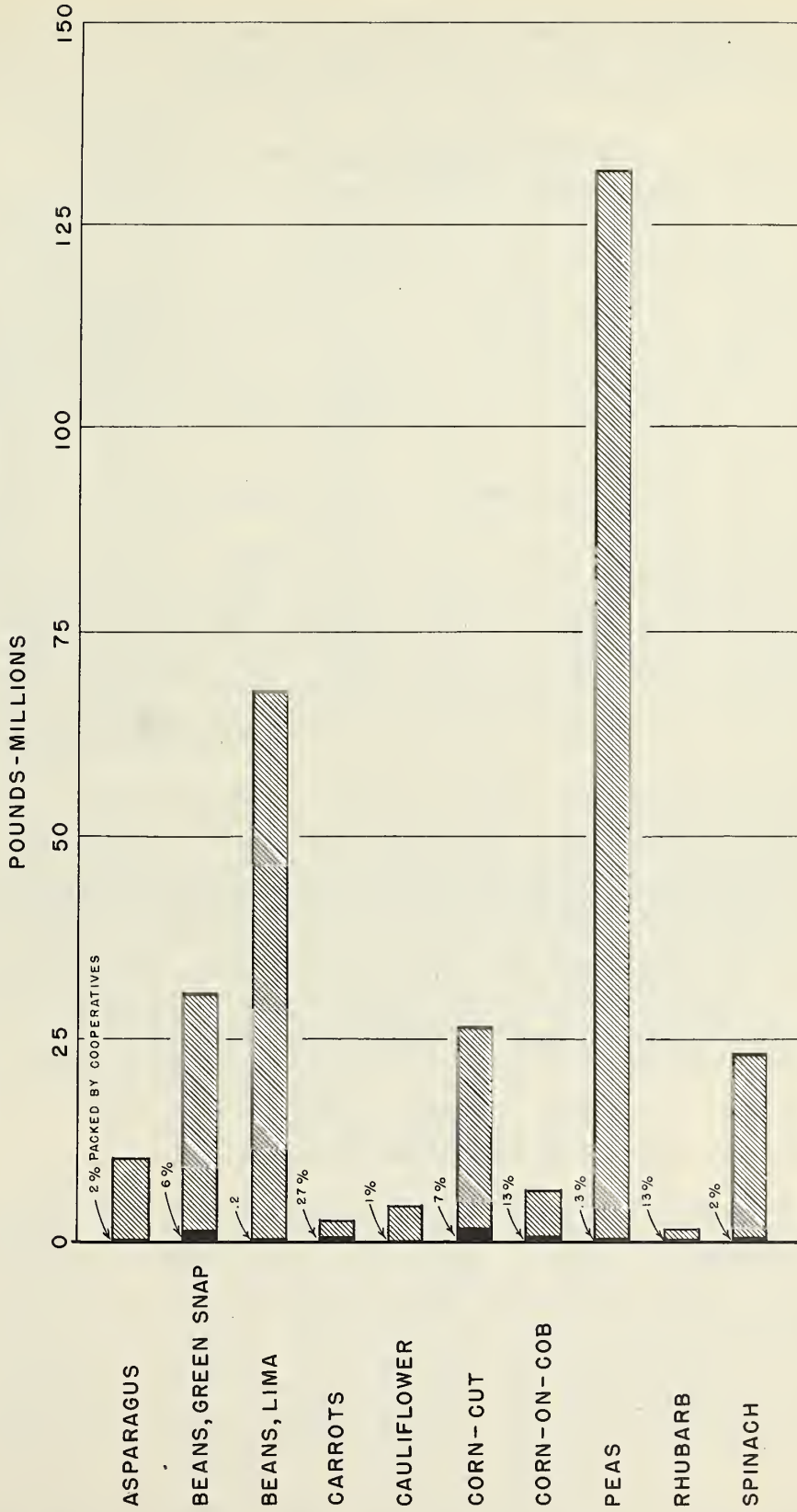


Table 7. - Cooperative pack of principal frozen fruits according to percentage packed in each container size, 1947-48

Commodity	1 pound or less	Over 1 pound through 10 pounds	Over 10 pounds	Barrels	Unspecified	Total	
						Pounds	Percent
Apples-----	-	-	100.0	-	-	6,953,488	100.0
Cherries, tart and sweet-----	+	+	30.3	9.7	60.0	9,877,387	100.0
Grapes and pulp-----	-	•	10.2	-	89.8	9,300,365	100.0
Peaches-----	3.4	-	95.6	-	1.0	219,000	100.0
Prunes-----	-	-	26.1	.6	73.3	778,691	100.0
Blackberries-----	-	1.3	33.4	3.5	61.8	3,876,578	100.0
Blueberries-----	-	-	77.9	-	22.1	256,700	100.0
Boysenberries-----	4.4	16.2	43.7	4.9	30.8	1,670,901	100.0
Currants-----	-	-	83.9	-	16.1	301,298	100.0
Loganberries-----	-	-	41.4	20.3	38.3	511,184	100.0
Raspberries, black---	-	-	55.8	10.0	34.2	1,135,810	100.0
Raspberries, red-----	2.6	2.3	12.1	13.3	69.7	9,986,723	100.0
Strawberries-----	13.5	4.0	20.3	10.5	51.7	13,648,714	100.0
Youngberries-----	-	-	70.9	-	29.1	122,748	100.0
Total-----	3.7	1.9	31.9	7.1	55.4	58,639,587	100.0

through 10 pounds; and 16 percent went into the large institutional sizes over 10 pounds.

When the volume for which sizes were designated is analyzed, with the unspecified group excluded, more than half of the vegetables, 53.4

Table 8. - Cooperative pack of principal frozen vegetables according to percentage packed in each container size, 1947-48

Commodity	1 pound or less	Over 1 pound through 10 pounds	Over 10 pounds	Unspecified	Total	
					Pounds	Percent
Asparagus-----	7.0	0.9	4.7	87.4	186,828	100.0
Beans, green snap---	45.3	10.9	-	43.8	1,916,025	100.0
Beans, lima-----	36.6	39.8	23.6	-	155,609	100.0
Carrots-----	-	8.6	91.4	-	785,730	100.0
Cauliflower-----	-	-	-	100.0	47,940	100.0
Corn-cut-----	7.1	5.4	-	87.5	1,727,874	100.0
Peas-----	81.2	5.5	13.3	-	337,049	100.0
Rhubarb-----	-	-	70.7	29.3	203,975	100.0
Spinach-----	49.2	-	-	50.8	557,085	100.0
Total-----	27.2	7.6	16.1	49.1	5,918,115	100.0

percent were packed in the small retail size containers. Almost a third, 31.6 percent, of the vegetables for which sizes were designated, were packed in the large institutional sizes, with the balance of 15 percent going into the small institutional sizes.

On an individual commodity basis, container sizes were specified for the entire volume of lima beans, carrots, and peas reported in 1947-48. About 75 percent of the lima bean pack was rather evenly divided between the retail and the small institutional sizes, with almost a fourth going into the large institutional sizes. For carrots and peas, however, the volume was restricted largely to one size group. More than 90 percent of the carrots were packed in the large institutional sizes and over 80 percent of the peas in small retail size containers of 1 pound or less.

### OTHER NONCITRUS FRUIT PRODUCTS

In addition to the canned and frozen fruits analyzed in detail in tables 3 and 5, cooperatives also processed a number of other noncitrus fruit products. These included almost a million cases of apple butter, jellies, and preserves; more than 2.3 million cases of noncitrus fruit juices, such as apple, cherry, grape, and pear juices, as well as cider and cranberry cocktail; and about two thousand cases of fruit puree, particularly grape and apricot.

Several million pounds of cherries were preserved in brine by cooperatives in the 1947-48 season. These were processed primarily for maraschino cherries. Two associations reported brining cherries the only processing operation they performed in the 1947-48 season. Six other associations whose major processing operations were canning, freezing, or both, also reported brining cherries in quantities ranging from less than 200,000 pounds to well over a million pounds per association.

Apple pomace was another noncitrus fruit product processed in 1947-48, although in a rather limited amount.

### CITRUS JUICES AND SEGMENTS

The total quantity of citrus juices and segments processed by cooperatives increased from 15.3 million cases in 1946-47 on the basis of 24 No. 2 cans, to approximately 17.5 million cases in 1947-48. Their production of juices amounted to almost 29 percent of the United States total (table 9 and fig. 8). The proportion cooperatives processed of all citrus products - juices, segments, and salad amounted to 27.7 percent of the total. This represents about the same proportion of the United States total of all citrus products that cooperatives packed in the 1946-47 season, when they processed 28.1 percent of the total.

On an individual commodity basis, cooperatives processed more than a third of all the grapefruit juice and lemon juice canned in the United





*The empty cans are put on the runway with forks, then go through the can washer and directly to the juice filler. Exchange Orange Products Co., Ontario, Calif.*

States in 1947-48. They also processed more than a fourth of all the orange juice and of all blended orange and grapefruit juice canned in 1947-48. Cooperatives canned 0.2 million cases of tangerine juice, including tangerine and orange blend, in 1947-48 compared with 0.3 million cases in 1946-47; their proportion of the total United States pack decreased from 26.0 percent in 1946-47 to 21.1 percent in 1947-48.

The quantity of grapefruit segments canned by cooperatives increased from 366 thousand cases in 1946-47 to 585 thousand cases in 1947-48, and amounted to 17.2 percent of the United States total in 1947-48 compared with only 6.5 percent in 1946-47. Cooperatives accounted for 14.7 percent and 7.5 percent, respectively, of orange segments and citrus salad.

Table 9. - *Principal canned citrus fruit juices and segments: Quantity of each packed by cooperatives as a percent of cooperative pack and of United States pack, 1947-48*

*Basis 24 No. 2 cans*

Commodity	Cooperative pack		United States pack		Cooperative pack as a percent of United States pack
	Thousands of cases	Percent of pack	Thousands of cases <sup>1</sup>	Percent of pack	
Grapefruit juice-----	5,992	34.3	17,449	27.7	34.3
Orange juice-----	7,056	40.4	27,308	43.3	25.8
Orange and grapefruit blended juice-----	3,393	19.4	12,369	19.6	27.4
Tangerine juice <sup>2</sup> -----	157	0.9	745	1.2	21.1
Lemon juice-----	175	1.0	492	0.8	35.6
Total juices----	16,773	96.0	58,363	92.6	28.7
Grapefruit segments--	585	3.4	3,400	5.4	17.2
Orange segments-----	17	0.1	116	0.2	14.7
Citrus salad-----	87	0.5	1,158	1.8	7.5
Total juices, segments and salad-----	17,462	100.0	63,037	100.0	27.7

<sup>1</sup>From "Canned Pack of Single Strength Citrus Fruit Juices and Segments - 1946-47 and 1947-48 Seasons," Fruit and Vegetable Branch, Production and Marketing Administration, U.S.D.A., March 15, 1949.

<sup>2</sup>Includes tangerine and orange blend.

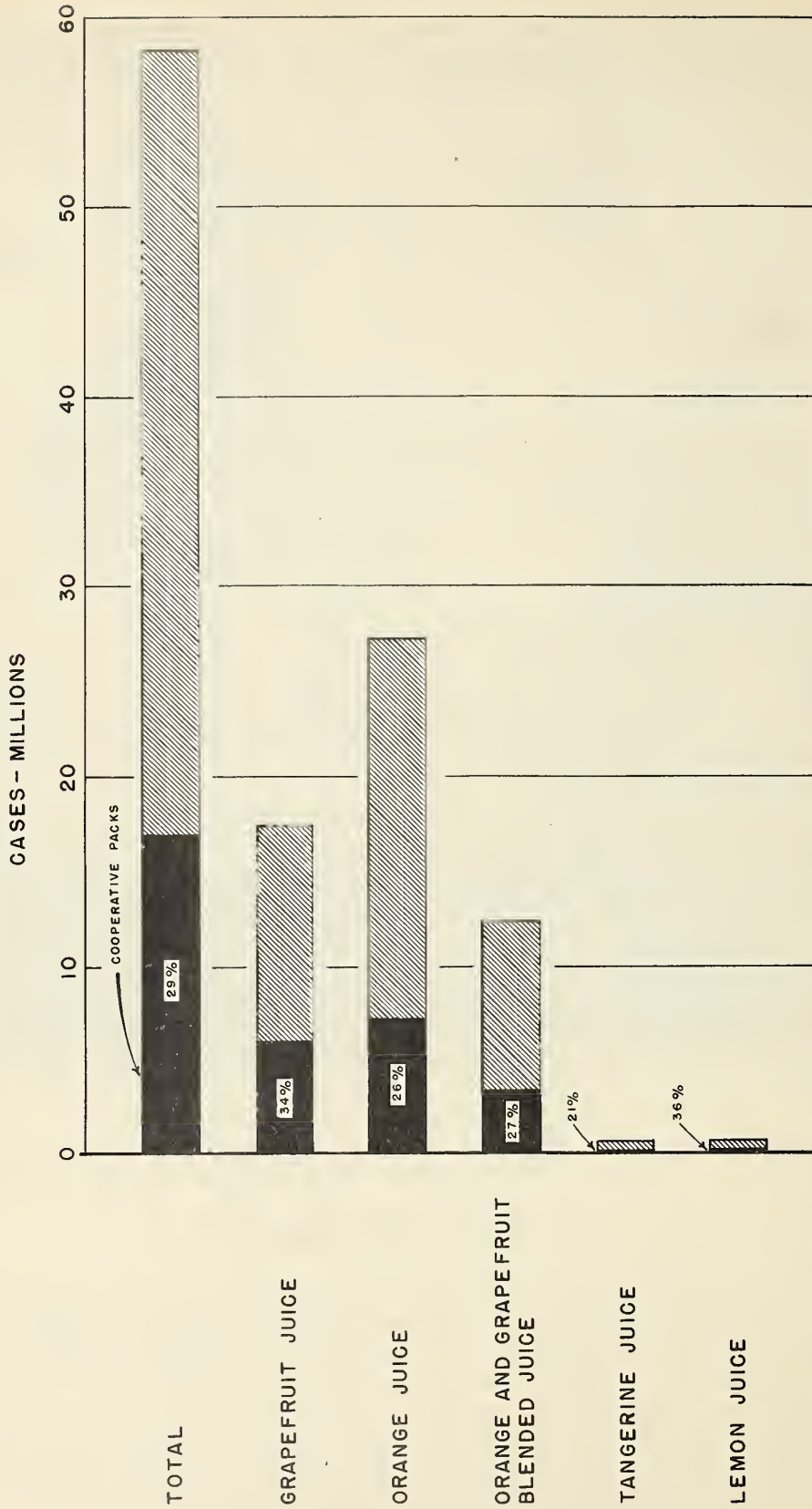
Orange segments are relatively unimportant in the total United States pack, representing less than 0.5 percent of all citrus products processed in 1947-48.

As a percent of the cooperative pack in 1947-48, grapefruit juice and orange juice reversed positions, with orange juice representing 40.4 percent and grapefruit juice 34.3 percent of the cooperative total. This compares with 32.9 percent for orange juice and 43.8 percent for grapefruit juice in 1946-47. Blended orange and grapefruit juice maintained a rather stable position in the cooperative pack, amounting to 19.4 percent in 1947-48 compared with 18.8 percent in 1946-47.

#### OTHER CITRUS PRODUCTS

Cooperatives processed large quantities of other citrus products in addition to citrus juices and segments shown in table 9. These included more than 2 million gallons of canned and over 300,000 gallons of frozen orange concentrate; well over 100,000 gallons of canned grapefruit and lemon concentrates; and several thousand gallons of frozen lemon juice, concentrate and natural. Other products included citrus oils, peels, pomace, and pectin. Byproducts processed for livestock feed included about 1.2 million gallons of molasses and approximately 27 thousand tons of feed pulp.

FIGURE 8  
 U.S. PRODUCTION OF PRINCIPAL CITRUS JUICES, AND PERCENT  
 PACKED BY COOPERATIVES, 1947-48



NOTE: BASIS 24 No. 2 CANS

SOURCE: U.S. DATA FROM "CANNED PACK OF SINGLE STRENGTH CITRUS FRUIT JUICES AND SEGMENTS, 1946-47 AND 1947-48 SEASON,"  
 FRUIT AND VEGETABLE BRANCH, PRODUCTION AND MARKETING ADMINISTRATION, U.S.D.A., MARCH 15, 1949

028521-8

## WINE PROCESSED

Twenty cooperative wineries reported operating in the 1947-48 season. Their total production amounted to somewhat less than 26 million gallons of wine and about 2 million gallons of brandy (table 10). This represented 25 percent of the United States production of wine and almost 8 percent of the brandy. Cooperatives accounted for more than a fifth of the total combined production of wine and brandy in the 1947-48 season.

These 1947-48 production figures represent a decrease in the quantity of wine produced by cooperatives, but an increase in the quantity of brandy processed. The approximate 26 million gallons of wine processed by cooperatives in 1947-48 compares with about 27.7 million gallons in 1946-47, and a total of 2 million gallons of brandy processed by cooperatives in 1947-48 compares with about 1.4 million gallons in 1946-47. This amounted to a decrease of about 7 percent in cooperative wine production; an increase of about 47 percent in cooperative production of brandy; and a net decrease in their production of both wine and brandy of between 4 and 5 percent compared with their 1946-47 production.

The percentage decreases for the total United States production are larger than those shown for cooperative production. United States production of wine dropped from about 165.3 million gallons in 1946-47 to slightly more than 103.4 million gallons in 1947-48, or a decrease of some 37 percent. United States production of brandy dropped from 45.3 million gallons in 1946-47 to 25.5 million in 1947-48 - a decrease of almost 44 percent. The combined production of wine and brandy in the United States dropped from 210.6 million gallons to 129.0, or a decrease of almost 39 percent, compared with a decrease of less than 5 percent in cooperative production.

Table 10. - Cooperative production of wine and brandy as a percent of California and of United States total, 1947-48

*In thousand of gallons*

Commodity	Cooperative production	Production in California <sup>1</sup>	Cooperative as a percent of California production	Production United States total <sup>1</sup>	Cooperative as a percent of United States production
Wine-----	25,859	95,222	27.2	103,439	25.0
Brandy-----	1,994	25,091	7.9	25,518	7.8
Total----	27,853	120,313	23.2	128,957	21.6

<sup>1</sup>From Twelfth Annual Wine Industry Statistical Survey, Part III, Wine Institute Bulletin No. 405, December 17, 1948.

## OLIVES

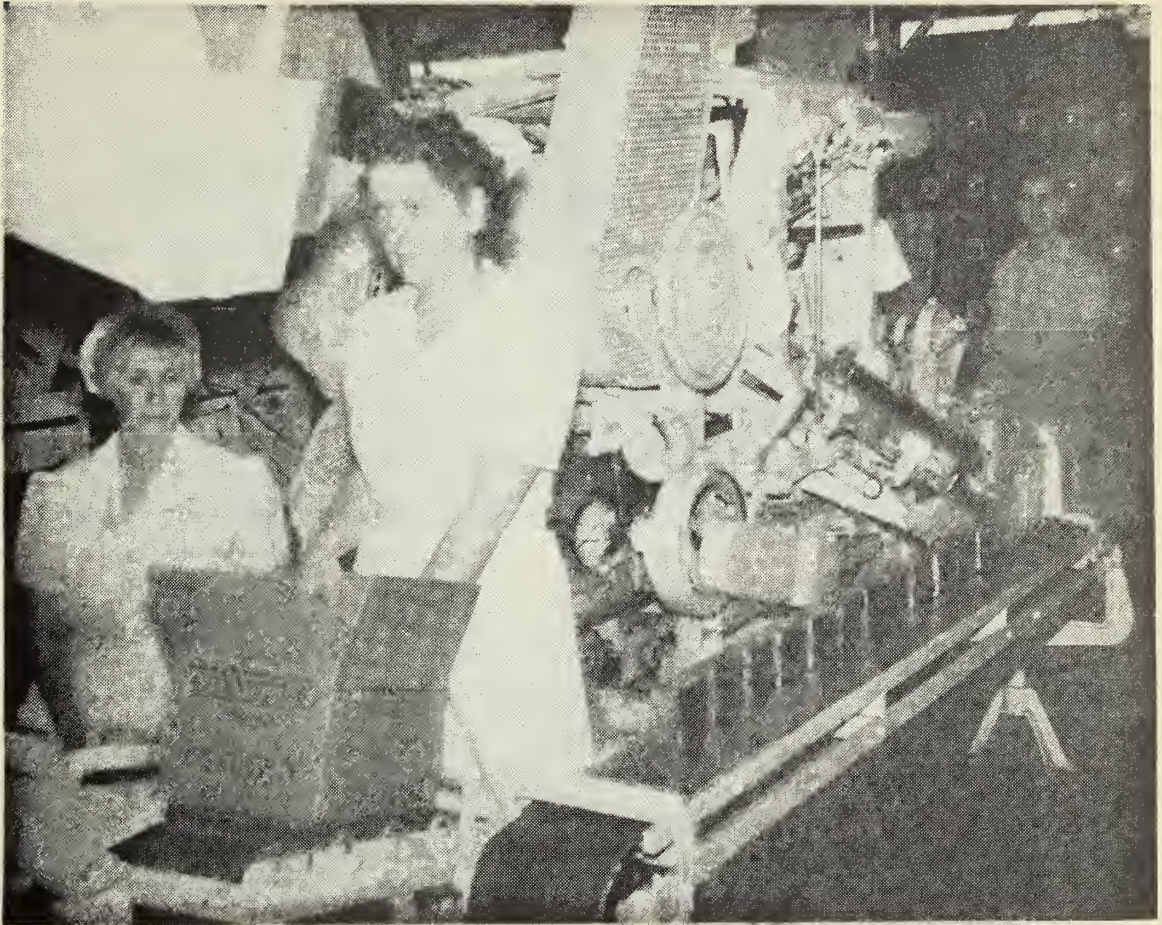
Four cooperative associations were canning olives in the 1947-48 season, and three of these were also producing olive oil. Another cooperative was processing olive oil, but was not canning olives. The total production reported by the four associations canning olives amounted to 308,728 cases (actual case basis). The United States total pack in 1947-48, as estimated in "Canned Food Pack Statistics: 1947" published by the National Cannery Association, was 969,000 cases. The cooperative pack thus represented about 32 percent of the total United States pack. In addition to the canned pack, cooperatives reported processing about 2,700 barrels of different types of olives which were not canned. The four cooperative associations engaged in processing olive oil in 1947-48 produced about 42,000 gallons of this product.

## DRIED FRUITS

The principal fruits which cooperatives reported drying in the 1947-48 season included apples, apricots, dates, figs, peaches, pears, prunes, and raisins. The combined total for all of these fruits dried by cooperatives amounted to about 167,000 tons (dried basis) in 1947-48. Dates are included in this total, although some reporting agencies do not classify them as dried fruits. This volume of 167,000 tons amounts



*To prevent slipping, adhesive on these newly labelled jars of ripe olives is allowed to "set" before the jars are placed in cases. Lindsay (Calif.) Ripe Olive Co.*



*Shipping cartons being filled with packages of Sunsweet prunes at California Prune and Apricot Growers Association, San Jose, Calif.*

to more than 28 percent of the total volume of these fruits dried in the United States in 1947-48. The total volume cooperatives reported drying in the 1947-48 season, represented an increase of more than 26 percent over the volume they reported processing in the 1946-47 season.

Prunes and raisins combined, were by far the most important of the fruits dried by cooperatives in 1947-48, amounting to more than ninety percent of the total processed by cooperatives. Peaches and apricots accounted for about 3 percent each; dates about 2 percent; and apples, figs, and pears were less than one percent each of the total cooperative pack in 1947-48.

#### TREE NUTS

Cooperatives continued to be a major factor in the processing of tree nuts in the 1947 season. The volume of almonds, filberts, and walnuts processed by cooperatives in 1947 is shown in table 11. Two associations,

Table 11. - *Tree nuts: Quantity of each processed by cooperatives as a percent of cooperative production and of United States production, 1947-48*<sup>1</sup>

Kind	Cooperative production merchantable unshelled		United States production merchantable unshelled		Cooperative production as a percent of United States production
	Thousands of pounds	Percent of production	Thousands of pounds <sup>2</sup>	Percent of production	
Almonds-----	39,800	31.7	58,400	35.9	68.2
Filberts-----	6,377	5.1	12,400	7.6	51.4
Walnuts-----	79,350	63.2	92,050	56.5	86.2
Total---	125,527	100.0	162,850	100.0	77.1

<sup>1</sup>Pecans are not included as no cooperatives are known to be processing them.

<sup>2</sup>From "Tree Nuts: Acreage, Production, Farm Disposition, Value, and Utilization of Sales, 1945, 1946, and 1947," Bureau of Agricultural Economics, U. S. Department of Agriculture, August 1948.

whose major processing operations are canning or freezing fruits and vegetables, reported marketing walnuts and filberts and their figures are included in the table. No cooperatives have reported marketing pecans during the past three seasons.

Cooperatives processed more than 68 percent of the total United States production of almonds (merchantable unshelled basis) in 1947 (table 11). They also processed more than half of the total production of filberts, 51.4 percent. The volume of walnuts produced by cooperatives, on a merchantable unshelled basis, was somewhat less in 1947 than in 1946, 79.4 million pounds compared with 80.1 million pounds. However, as a percent of the total United States pack, cooperatives accounted for a larger proportion than in 1946, 86.2 percent in 1947 compared with 79.0 percent in 1946. United States production had dropped from 101.4 million pounds in 1946 to 92.1 million pounds in 1947. Cooperatives processed more than three-fourths of the combined total United States production of all three of these tree nuts.

As a percent of the total cooperative production of these three types of tree nuts, walnuts were still in the lead with 63 percent of the cooperative total. Almonds accounted for almost 32 percent, and filberts contributed slightly over 5 percent of the total cooperative production.

#### OTHER PROCESSED HORTICULTURAL PRODUCTS

Six associations reported processing varying quantities of other horticultural products. These included several hundred thousand pounds of dried red peppers, several thousand tons of potato starch, and a sizable volume of dehydrated potatoes and potato flour.

FCA 1140-E CR&S  
4-8-49

BUDGET BUREAU NO. 40-R148.2  
APPROVAL EXPIRES 7-31-50

UNITED STATES DEPARTMENT OF AGRICULTURE  
FARM CREDIT ADMINISTRATION  
WASHINGTON, D. C.

ANNUAL SURVEY OF FARMERS' COOPERATIVES

Kindly fill in and return in the enclosed official, postage-free envelope.

Legal name of organization \_\_\_\_\_

Mail address \_\_\_\_\_ State \_\_\_\_\_

Kind of enterprise \_\_\_\_\_  
(Assembling, packing, canning, storing, selling, bargaining, etc.)

Members or shareholders (those entitled to vote for directors), number \_\_\_\_\_

Patrons (all selling or buying through the Association), number \_\_\_\_\_

Principal product handled \_\_\_\_\_ Others \_\_\_\_\_

Supplies handled \_\_\_\_\_  
(Containers, fertilizer, feed, seed, machinery, spray materials, etc.)

Services rendered members \_\_\_\_\_  
(Spraying, fertilizing, harvesting, thinning, etc.)

BUSINESS VOLUME LAST FISCAL YEAR. YEAR ENDED \_\_\_\_\_

Farm products sold (f.o.b. shipping point).....value \$ \_\_\_\_\_

By-products sold.....value \$ \_\_\_\_\_

Total farm products sold.....value \$ \_\_\_\_\_

Supplies sold (containers, fertilizer, etc.).....value \$ \_\_\_\_\_

Commissions (other than on above), interest, service charges, etc..... \$ \_\_\_\_\_

Total business for year..... \$ \_\_\_\_\_

Amount of check-off received if bargaining..... \$ \_\_\_\_\_

Signed \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

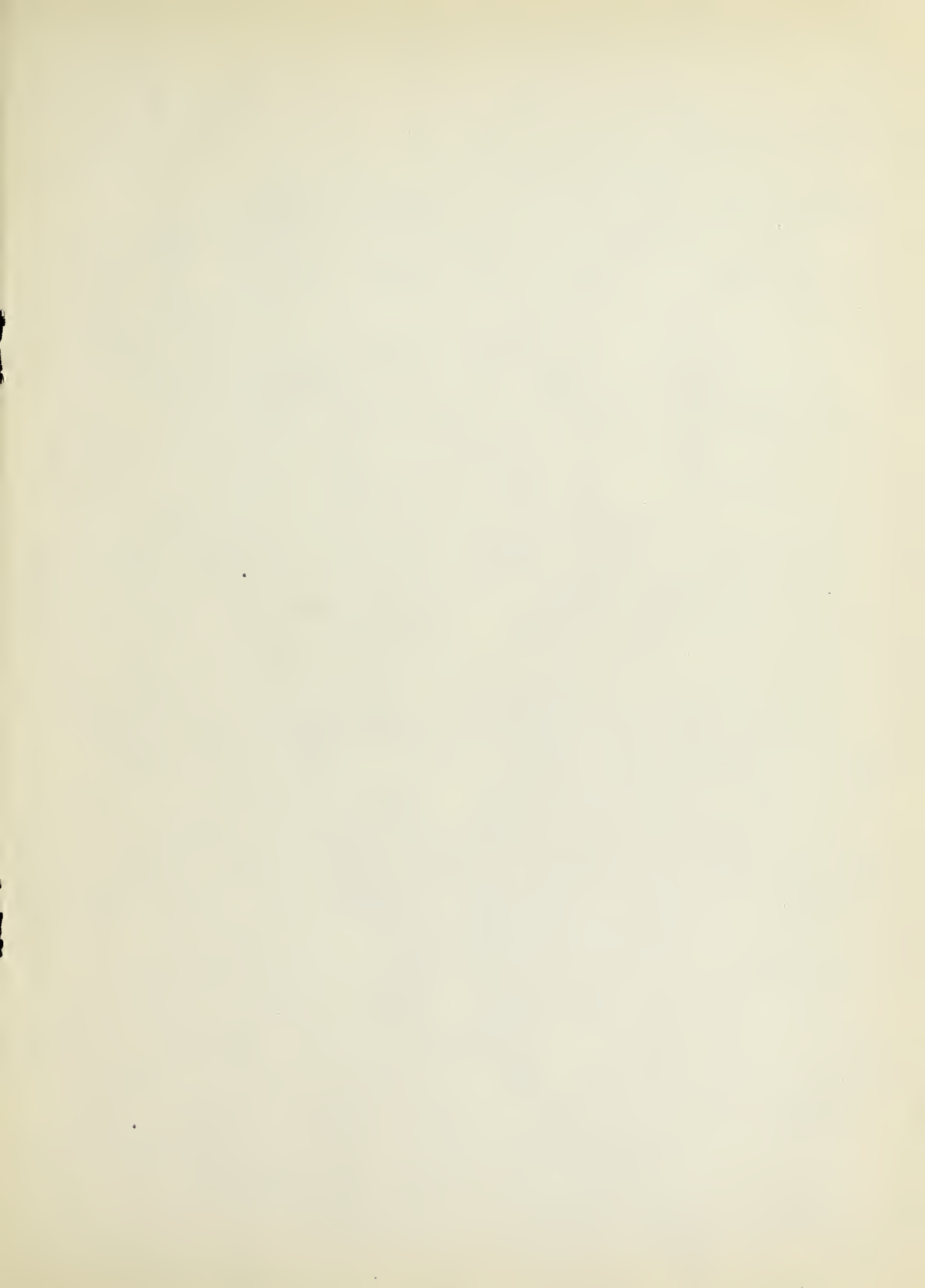
Please enclose copies of last annual report and latest financial statement, if available.



QUANTITY OF FRUITS AND VEGETABLES HANDLED, YEAR ENDED \_\_\_\_\_, 19\_\_\_\_.

If more convenient to supply information on an available summary or report, please attach and mail.

Please mark out processes not used by your co-op to provide space if needed.	Unit of measure (bushels, crates, barrels, lugs, pounds, tons, cases, of No. 2's, etc.)	Quantity or volume
<u>SOLD FRESH</u> (List commodities)		
<u>CANNED</u> (List commodities and specify whether whole, sliced, sections, juice, puree, sauce, etc.)		
<u>FROZEN</u> (List commodities and specify whether whole, sliced, sections, juice, concentrate, puree, etc.)		
<u>DRIED or DEHYDRATED</u> (List commodities)		



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