

## Fruit and vegetable canning industry

# Market Structure Changing

as result of supply pressure and increased competition

Food canning is California's leading peacetime industry and fruits and vegetables represent the largest segment of that industry. California packs as many as 100 types of canned foods, and has an output of over 220 million cases annually, equal to about one third the total food canning output of the United States.

California is virtually the nation's sole supplier of canned apricots, figs, fruit cocktail and cling peaches, and supplies important proportions of the canned sweet cherry, pear, asparagus and spinach packs. Also, two thirds of the nation's canned tomato and tomato products are packed in California.

The growth of California's production of fruits and vegetables for canning has occasioned the development of special techniques for intensive cultivation procedures, and handling skills. Employment and income for farmers, farm workers, and allied industries have been generated. Some 100 thousand canning workers are employed at a seasonal high; more than 600 thousand tons of tinplate from the nation's steel mills are used in the manufacture of five billion tin cans; glass factories supply more than one billion jars; and close to a million miles of labels cover the 200 million can and glass containers—equivalent to 100 thousand freight cars—shipped by public carriers to domestic and export markets.

The size and complexity of the California fruit and vegetable canning industry create difficult problems—weather, ever-changing technology, choice of crops and varieties, and mounting costs—for the growers who find themselves in a highly competitive activity. The canners are experiencing rising costs of operations, fluctuations in annual volume of product, pressure to adopt cost-reducing and product-improving methods, introduction of new products, uncertainty as to unsold inventories, competition for markets and undefined profit-making position. Canning is a highly speculative business, with a low rate of return compared to some lines of manufacturing.

While the problems of growers and canners have been increasing, aids in guidance for decision-making have been improved by data-compiling and reporting sources—industrial and governmental—which provide many necessary statistics. University research studies also include economic-statistical and analytical information useful to canners, growers, and distributors, as guide-posts to current and prospective developments.

### Location of Canneries

The fruit and vegetable canning industry includes specialized industries built around one or more crops. Growers often specialize in one or several related crops, while the canners process and sell a group of products. Fruit growing for canning is heavy on the Pacific Coast and California is dominant, but vegetables grown for canning are widely distributed.

The location of canneries generally follows the geographical distribution patterns established by the producing areas. In the producing areas the canneries tend to cluster in locations determined by availability of labor, raw product, water, waste disposal, and cannery supplies, whether the canning plants are those of small independent canners or are part of a multiple-plant, national operation. Both types of plants are characteristic of the market structure of the industry. There are a relatively limited number of large national canner-distributors—marketing highly promoted brands through chain store and independent outlets—with strategically located multiple canneries. Numerically, there are more smaller or independent canners—packing and selling their own brands which are not nationally advertised and distributed—who pack for the private labels of national, regional, and local chains and for voluntary buying groups and independent wholesalers.

In California, fruit and vegetable canning plants cluster in the three major areas of Stockton-Modesto, San Jose-

Oakland, and Sacramento. Each area has readily available supplies of raw product; sugar; water; waste disposal facilities; cans; fiberboard cartons; labor; and the transportation facilities of rail or ship as well as truck-trailer over a highly developed highway system.

### Growth and Change

Consumer acceptance of conveniently packaged foods—pioneered by the canning industry—plus population and income growth resulted in the rapid development of the canned fruit and vegetable industry during the past half century. However, a slowing of the rate of development and the highly competitive and speculative aspects of the industry have caused many canning companies to expand product lines to promote growth, or to integrate activities for greater stability. Both actions are attempts to raise and regularize the average level of long-term profit margins.

Consumption of processed fruits and vegetables has shown a relationship to population growth, national income and distribution to relative food prices; and to household attitudes and habits. While the total poundage of foods consumed

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#### CALIFORNIA AGRICULTURE

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able potassium content but not from soils with high levels of available potassium. Crop uptake of cesium-137 was inversely correlated with the level of available potassium in soils.

The addition of stable cesium amendments to soils was ineffective in reducing cesium-137 uptake even when applied at levels that were toxic to the plant.

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## BORER

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gave a measure of control when treatments were spaced at monthly intervals.

The past four seasons' work on peach tree borer suggests that Thiodan, Endrin, or Dieldrin applied as trunk sprays will control the Western peach tree borer on apricots and, probably, on cherry, almond, peach, and prune.

When Thiodan, Endrin, or Dieldrin is used, extreme care must be taken to avoid contamination of fruit. Pump pressure must be reduced and a coarse spray nozzle used. Under no circumstances should a blower-spray be used. Hand spraying, with careful attention to confining the sprays to the tree trunk, offers the most readily controlled application.

What effect sprinkler irrigation may have on deposit of the toxicants is an important factor to be determined in further studies on trunk sprays to control the Western peach tree borer.

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*The above progress report is based on Research Project No. 806.*

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## FRUIT HANDLING

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ing from L-3 to bins with a one mile haul would involve bin methods and savings of: at an output rate of 100 lugs per hour, use of Method B-3 and an hourly savings of about \$1.85; with an output rate of 200 lugs per hour, Method B-1

and savings of about \$4.00 per hour; with an output of 300 lugs per hour, it would be Method B-2 and a savings of about \$6.45 per hour.

The savings shown by the table are strictly applicable only when operating conditions, variable cost rates, equipment investment, and allocation rates are as specified. However, considerable changes in these factors would be possible without important shifts in the relative cost of the various methods.

Investment costs and carrying charges for containers depend on construction details, but run 35%–65% less per unit of fruit handled with bins than with lugs. When container and handling costs are combined, bins are the more economical container throughout the range of operating conditions considered in this study.

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*The foregoing article is based on a detailed report to be available from the Giannini Foundation for Agricultural Economics, 207 Giannini Hall, University of California, Berkeley 4.*

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## MARKET STRUCTURE

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has stayed relatively stable over the years, shifts among products are evident, and recent trends indicate a strong consumer preference for processed convenience foods.

Technological improvements developed to satisfy consumer preference for convenience foods emphasize the need for the fruit and vegetable canning industry to be progressive and dynamic—with new or improved processing techniques, cost-saving methods and specialized markets as in the cases of baby foods and dietetic products—to compete for consumer preference. Changes in marketing-sales-distribution organization and merchandising operations are being sought by some processors to strengthen their marketing position in the canning industry.

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## Industry Structure

A changing market structure confronts the canners of fruits and vegetables. The onetime prevalent independent wholesalers have been widely replaced by large scale organizations buying directly from canners for chain stores, voluntary cooperative buying groups, and wholesaler-retailer teams.

The competitive nature of the canners market is being restructured with altered bargaining relations. Some canners have turned to integration and merger and to improved and varied product lines as a means of meeting new and prospective market structure developments.

In efforts to protect and enhance their position, many growers have turned to cooperative bargaining associations and cooperative canning and to marketing order programs—under state enabling legislation—to regulate grade, size, quality and volume marketed and to increase demand through promotion and advertising.

From grower to retailer, the fruit and vegetable canning business has undergone significant changes and further change is in prospect. New and different market structures and institutions, technological developments, modifications in consumer attitudes and preferences require the canning fruit and vegetable industry to be alert and progressive to achieve further growth and development.

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## Market Demand

A current problem is the expanding farm output of fruits and vegetables for processing, because of increases in acreage and in yield.

Technological improvements in the canning industry seem able to meet the pressure of the increasing raw product supply while introducing increased canner case-yield per ton for some products. But break-even production capacities and break-even product prices are being edged upward because of external developments. Canners and growers operate between supply pressure and cost pressure, and unit-cost reducing technology is needed by both growers and canners.

The demand for processing fruits and vegetables is directly related to the demand on canners—at the f.o.b. level—for the canned product. There is a strong tendency for the season average price of the canned product—for the marketing year, on an industry-wide basis—to be related to certain economic-marketing influences: the quantity of canned product sold; the level of national disposable income; and the level of prices of competing products. The interaction of these influences is highly significant in determining the industry-wide seasonal average f.o.b. prices received by canners.

The uptrend in national income has tended to raise the f.o.b. demand for

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## MARKET STRUCTURE

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canned items, while the increasing supply has tended to depress the f.o.b. market price. Selling competition—in products, grades, sizes, quality, price and terms of sales—is strong among canners and is an integral part of the canning fruit and vegetable industry.

The heightened competition among f.o.b. sellers of canned fruits and vegetables affects farmers, canners, distributors and consumers. The changing impacts result in varying distribution of benefits and burdens.

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