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California Prune Industry May Face Market Adjustment

S. W. Shear and George B. Alcorn

During the next few years the California prune industry will probably go through a period of difficult adjustment largely because of the poor and uncertain foreign market outlook. Demand for California dried prunes will have to be increased or bearing acreage and average production decreased before prices can be expected that, without government support, will encourage efficient growers to maintain most of the good prune orchards in the state. During the next few years prices and overall demand for California dried prunes will probably continue to be held down: 1. At home, by keen competition from very plentiful supplies of fruits and popular fruit products; 2. Abroad, by considerably lower commercial demand and imports for our prunes than prevailed before the war, particularly in European markets.

Prune orchards with old and low-yielding trees, producing fruit of poor quality and small size, will probably be unprofitable again as before the war. Owners of these poor prune orchards should, therefore, give careful consideration to replacing them with other crops to which their land is adapted and for which better returns might be expected in the long run than from prunes. However, growers with good-sized fruit probably should not replace their prunes with other crops unless they are convinced that by so doing they can increase their returns significantly during the next 10 or 15 years. There is some probability, although no absolute assurance, that reduction in prune acreage and production within the next five years may more than offset the expected low level of domestic demand and of decreased exports, so that the supply and demand for California prunes may come into balance at prices that will give efficient growers with good orchards as

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Beet By-products In Mixed Rations As Livestock Feed

The sugar-beet industry offers two important by-products to the livestock industry: sugar-beet tops and siloed beet pulp. Both of these by-products are recognized as important feed resources. Their utilization is of mutual interest to livestock raisers and sugar-beet growers.

Sugar-beet tops harvested and siloed or stacked may be successfully used for fattening cattle or lambs, wintering pregnant ewes, or feeding dairy cattle when fed in mixed rations, they yield 150 to 250 pounds of beef or lamb per acre, two or three times as much as when tops are pastured.

Siloed beet pulp contains 76.4 per cent total digestible nutrients on a dry basis. The addition of molasses to the siloed pulp has been found to improve feeding efficiency.

These large food resources, if properly used, not only might promote an increased production of animal products, but also might increase the productive and economic stability of the beet-growing and sugar-manufacturing industries. Results of research on means of conserving and utilizing these sugar-beet by-products are presented in a new bulletin published by the College of Agriculture. (See page 4).

Research On Granulation Of Valencia Oranges Shows Only Limited Control Measures Exist

E. T. Bartholomew, W. B. Sinclair and F. M. Turrell

Granulation of Valencia oranges is not caused by a fungus, a virus, or a bacterium. It is definitely related to the growth activity of the tree and fruit.

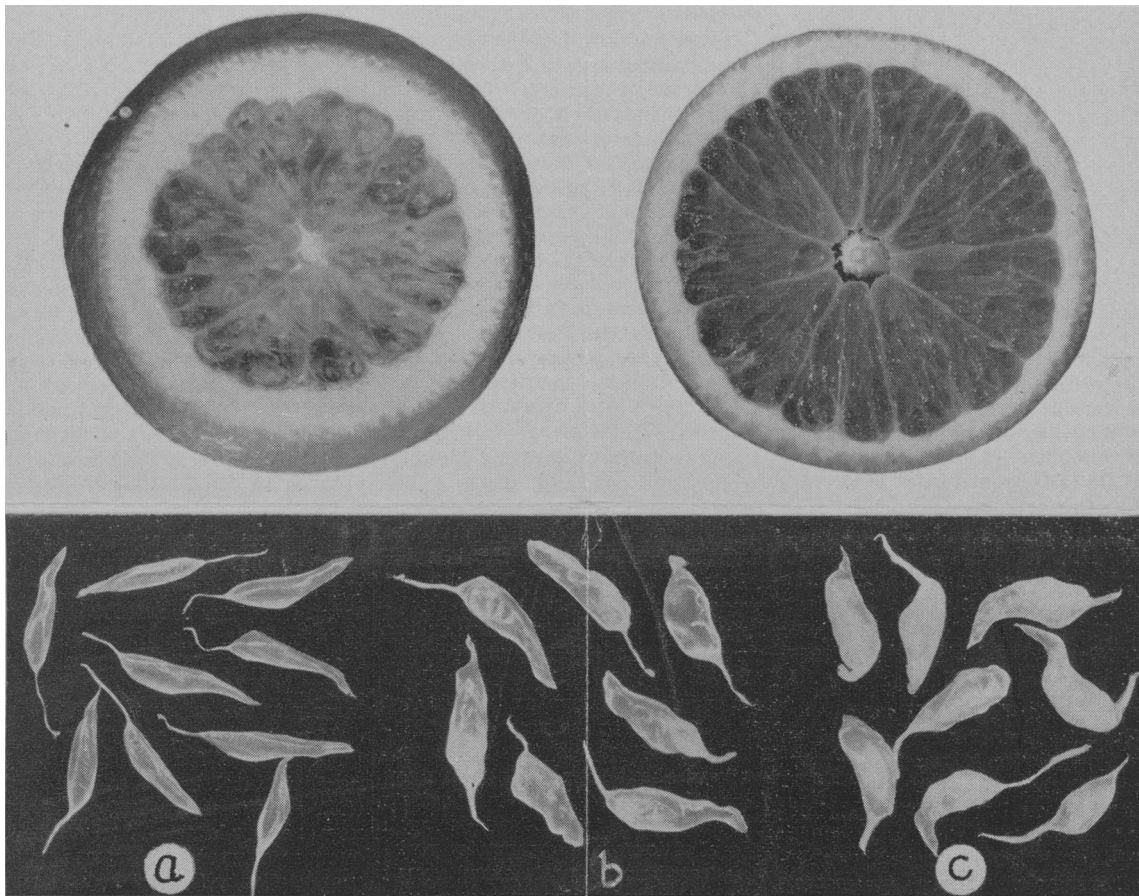
Since 1930 over 200,000 Valencia

Rough lemon rootstocks produced the most granulation—34% for the first, and 31% for each of the others—while Sampson tangelo produced the least—10%.

At Riverside a four-year average

In each case the percentage of granulation produced on the wet plots was a little over twice that produced on the dry plots.

Lime spray at 50 pounds per 100 gallons reduced the amount and sev-



Granulation in a Valencia orange. ABOVE LEFT: Granulation shown in a cross section of the stem end. ABOVE RIGHT: Cross section of the same fruit cut near the center, with no indication of granulation. BELOW: Showing (a) healthy juice sacs; (b) moderately granulated sacs; and (c) badly granulated sacs.

oranges—from approximately 2,000 trees in 75 groves—have been examined in studies to determine causes and possible means of control of granulation.

The cutting of a total of 61,900 fruits over a period of seven successive years showed the following percentages of fruits of different sizes to be granulated:

Fruit Sizes	Per cent granulated
100's	79
150's	54
200's	33
288's	18
344's	7

Over a period of nine successive years the cutting of 72,145 fruits showed 60 per cent to be slightly granulated, 25 per cent moderately so, and 14 per cent badly granulated.

Under these classifications slightly granulated fruits come within the tolerance limit set for high grade fruits. At least a large portion of the moderately granulated fruits can be shipped in an "off-brand," but badly granulated fruits have to be discarded or sent to the products plant.

Field Studies

Valencia orange trees were started on nine different rootstocks with buds from the same parent tree. Half of the trees were planted at Tustin, for the coastal area, and the other half were planted at Riverside, for the interior area.

At Tustin, a three-year average showed that the trees on Brazilian sour orange, trifoliate orange, and

revealed that the trifoliate orange and the Rough lemon were noticeably the two highest producers of granulation—37% and 24%, respectively—while C. E. S. 343 grapefruit produced the least—3%.

The average amount of granulation produced by all rootstocks was 26% at Tustin and 14% at Riverside. The percentages given here are relatively high because only large fruits were examined.

Some trees in a given grove constantly produce little granulation, others produce much granulation, while still others may produce little granulation one year and much the next.

Fruits on the north side of the tree are more likely to be granulated than those on the south side.

Freezing temperatures may cause an increase in the amount of granulation in some individual fruits but low temperatures are not the direct cause of granulation.

Scaly bark does not cause granulation. A scaly-bark tree that produces much granulation does so because it had done so previously.

Over a period of years the soil in certain "dry" plots was kept just above the wilting point in the fourth foot while adjacent "wet" plots were kept above the wilting point in the first foot.

After a time the water applications were reversed, the dry plots became wet plots and the wet plots became the dry plots.

erity of granulation about half. This treatment is not recommended because the treated trees lost excessive amounts of leaves during the fall winds.

During a period of seven years, oil sprays were found to augment the amount and severity of granulation. Their use should be avoided where possible.

HCN—hydrogen cyanide—tested at the same time, did not affect the production of granulation.

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Poultrymen May Have More Market Competition Ahead

E. C. Voorhies

California does not produce enough eggs to keep up with the demand.

We must ship in eggs from other states. This puts the local producer in a favorable position because he gets a better price, and the consumer gets better eggs. The top quality ones are no longer shipped to eastern markets. Our in-shippments, on the other hand, do not come only from the Western states, as formerly, but in increasing numbers from those farther east, mainly the Mississippi Valley.

People have now developed a taste for good eggs. This taste was encouraged by wartime emphasis on eggs as a protective food, plus the fact that meats were rationed and were relatively higher in price. The buyer still wants, and has the money to buy, good eggs. It is up to the poultryman to see that he gets them.

If the producer keeps the quality up, people will continue to eat more eggs. If quality drops, consumption and prices will go down.

Changed Market Conditions

If domestic consumption is lowered, the poultryman cannot count on foreign exports to take up the surplus. Europe, the chief wartime market, cannot afford to import eggs now, and we no longer have lend-lease and large military demands for them. During the war, large quantities of eggs were dried for overseas shipment. Dried egg production, largely carried on in the middle west, has now taken a big drop, which means more midwestern eggs for domestic markets. Good quality, continued good advertising, and good prices as compared to meat can help keep the demand for eggs at a high level.

Over a period of years, the number of shell eggs being held in storage has been going down. This is an advantage for the producer during the fall and winter months because his fresh shell eggs do not compete directly with the cold storage ones.

California now does not have a corner on new production methods. At one time, the state could send out eggs between October and February—the period of low production in other sections of the country. But poultrymen in other states, especially our chief competitors in the Mississippi Valley, have also developed improved management practices so that they do not have such big gaps between laying periods. This means that there is less difference between the year's highest and lowest egg prices. This

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Ladybirds, Lacewings, Parasites Tested As Long-tailed Mealybug Controls In California Citrus

Paul DeBach and C. A. Fleschner

The long-tailed mealybug, *Pseudococcus longispinus*, is a relatively recent pest of citrus and occurs principally in coastal areas of Orange, Los Angeles, and Ventura counties.

The first minor outbreak of the long-tailed mealybug was found on citrus in 1933 in the Rivera-Downey section of Los Angeles County. Parasites were introduced to combat this pest and it was generally thought they were keeping the mealybug in check.

In 1943 another build-up of the long-tailed mealybug occurred on citrus; this time in the Anaheim area of Orange County. This infestation

increased in area in 1944 and 1945 until perhaps 1,000 acres were infested to a greater or less economic degree.

Coastal areas of Ventura County were experiencing similar increases in long-tailed mealybug populations on citrus during this same period.

Studies Started

Studies started late in 1945 were designed to determine why the mealybug was increasing.

During 1946 and 1947 detailed population samples of the long-tailed mealybug and all its natural enemies have been taken monthly. At the

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Farm Income Reflected By Farm Real Estate Values—Surveys Indicate Suitable Use Of Soils

The following extracts are from addresses before the Annual Convention of the National Association of Real Estate Boards, San Francisco, November 11, 1947.

Sidney Hoos

Trends in farm prices and farm income have been reflected in farm real estate.

Farm land rentals which usually follow behind prices and income are at record levels. The lag between income and rentals means that when farm commodity prices and income decline, rentals will remain relatively high for a year or two, squeezing the tenants renting farms.

The improved financial position of farmers, in general, may be gleaned from the consolidated balance sheets of American agriculture prepared by the Department of Agriculture. In dollar terms, total farm assets have more than doubled since 1940. But over the same interval, real estate value has made up a smaller proportion of the total, although increasing absolutely. Financial assets accounted for about 9% of total assets in 1940, but almost 20% at the beginning of 1947.

Farm Mortgages

On the liability side of the balance sheet, farm real estate mortgages have declined from 12% to a little less than 5%. Non-real estate also declined. But equities increased from 81% to 92% of total liabilities. The figures cited pertain to the country in general; different relationships would apply to particular states, areas, and types of farms. Also, of course, there would be wide variation from farm to farm.

The country's present farm mortgage debt is estimated to be about five billion dollars, which appears not excessive in relation to the current income level. Following World War I, mortgage debt just about equalled the value of cash receipts from farm marketings, but at the beginning of this year mortgage debt was only 20% of the current cash receipts from marketings. Although the current mortgage debt might not be burdensome for the older, established farmers, the situation need not hold for recent and new purchasers.

Available information indicates that many of the new farm-land purchasers did incur relatively heavy debts. With respect to all of the farms bought in 1946, about one-third had debts totaling 50% or more of the purchase price, and about one-seventh were mortgaged for at least 75% of the purchase price. Similar percentages have prevailed since 1943, in spite of land values having increased 40%. A somewhat different but also significant measure of the farm mortgage situation is that farms which had a debt of 53% or more of the July 1, 1947 average purchase price, were in fact mortgaged for as much as the full value of the farm or similar farms in 1941. Or, a mortgage of 75% of current purchase price would be more than the full value of the farm only three years ago.

Mortgage Credit Sources

Reflecting the high level of farm net income and liquid assets in recent years noted earlier, sample surveys indicate that approximately half of total farm sales have been on a cash basis. To the extent that outside credit has been drawn upon to finance farm purchases, some significant trends have emerged. In comparison with 1941 when Federal Land Banks and Land Bank Commissioner acted as the source for 14% of the credit supplied, that source in 1946 accounted for 7%. Over the same period, 1941 to 1946, insurance companies decreased from 18% to 10%; but private individuals increased their contribution from 36% to 46%, and commercial banks increased their relative share from 12% to 27%.

The trends in national or regional totals and averages must be scrutinized in light of the specific situation in local areas in order to detect danger signals which are submerged in overall averages.

Sidney Hoos is Associate Professor of Agricultural Economics, Associate Agricultural Economist in the Experiment Station, and Associate Agricultural Economist on the Giannini Foundation, Berkeley.

R. Earl Storie

A soil survey constitutes an unbiased inventory of the soil resources of an area.

The soil type—the important unit of identification—is rated as to its productive capacity.

The soil type can be used for interpretation of fertilizer, soil amendment, irrigation, drainage, and other management data.

All this data can be used as a physical basis for land appraisal, land conservation—irrigation, drainage, erosion control—land development, land assessment, land management—agricultural, grazing, forest—watershed and flood control—highway and airport construction.

The following characteristics are those of importance from a land use standpoint and are considered in appraising a soil value for use:

1. Texture of soil; 2. Character of profile—depth to hardpan, bedrock, presence of claypan etc.; 3. Slope; 4. Drainage; 5. Toxic conditions—salts, alkali, lime, etc.; 6. Reaction—acidity or alkalinity; 7. Erosion; 8. Microrelief—mounds, hogwallows, etc.; 9. Fertility.

Field Study

The soil surveyor in the field observes surface characteristics such as the slope of the land, the microrelief, the nature of erosion, the type of native vegetation, the use of the land including the character and growth of crops, stoniness of the land, the surface drainage, and the evidences of any salt accumulation.

Holes are bored to a depth of three to six feet. The depths to bedrock, hardpan or claypan are determined. The texture structure and density of the various layers of soil are noted as well as the color and organic matter content.

Field tests are made for reaction—sweetness or sourness of the soil—lime content, and salt content.

Notes are taken of the drainage conditions. Samples are taken to the laboratory and tested for such things as organic matter content, nitrogen content, sand silt, and clay composition.

Fertility Studies

Important studies are carried on after completion of the field surveys and the naming of the soil types consist of green house and field tests for fertility.

This study involves actually applying nitrogen phosphorus, and potash to the individual soil types in order to determine their fertility level.

All fertilizer work should be interpreted in terms of the soil type so that the results can be recommended for other farms having the same soil types.

Productivity Ratings

An important work is the rating of each soil type according to its relative suitability and productivity for various crops.

For example, Yolo loam might be rated 100% for irrigated alfalfa on the basis of an eight ton yield, whereas another soil type yielding four tons per acre would have a productivity rating of 50%.

Soil types are rated in the same manner for grazing and timber production. This system of rating the productivity capacity of the soil type is known as the Crop Productivity Index.

The Storie Index Method of Rating Soils differs from the Crop Productivity Index in that the soil type is rated on the basis of assigning ratings to the soil properties such as texture, profile, slope, drainage, toxic conditions, erosion, fertility level, and microrelief. Under this system a soil having a rating of 100% is a perfect soil and of course has a wide range of use.

Such crop productivity ratings as well as soil ratings are now being published in the federal and state government soil survey reports and should prove of value to everyone interested in land utilization.

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California Prune Industry May Face Market Adjustment

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satisfactory returns from prunes as the best alternative crops adapted to their land.

Demand and price for California dried prunes are so dependent upon European markets that the problem of how to offset the expected loss of much of these regular export outlets, largely because of lack of foreign purchasing power, is of most vital concern to the prune industry. During the 1947-48 marketing season this loss is being offset by our government's purchases of about 66,000 tons under its recently inaugurated surplus-removal program for dried fruits. Presumably nearly all of these prunes will be shipped to war-impo- verished European countries. National and international economic and political conditions are likely to continue to be such that for some years further government and/or industry programs may be necessary if we are to maintain our foreign exports of prunes at prices that give growers anywhere near satisfactory returns. The uncertainty and rapidity of changes affecting the current and future export market make it essential that growers keep right up to date on related national and international developments.

It now appears that the California industry must look to Europe to take an average of more than 50,000 tons of its dried prunes a year if the market anywhere near adequate for the potential production of its orchards is to be found during the next few years. Such a tonnage is somewhat more than we shipped to Europe—much as lend lease—in recent years, but only about two-thirds of the 1934-1938 average. Total foreign outlets for more than 70,000 tons of California prunes a year will probably be needed during the next few years as compared with a prewar average of nearly 100,000 tons.

The probable outlook for domestic production, consumption, and demand for prunes in the United States appears much clearer than the export outlook. Acreage and yield data indicate that Pacific Coast dried prune production may average in the neighborhood of 180,000 tons during the next few years. By 1949 the population of the United States will be around 148 millions and could eat about 125,000 tons a year if the 1930-1938 rate of consumption again prevails of about 1.7 pounds per person through commercial retail outlets for all its uses as food. However, such a level of domestic consumption probably could not be maintained except at very low prices for prunes as compared with most fruits, as was the case before the war.

Even at very low prices compared with those for other fruits, neither domestic consumption nor exports of our dried prunes were increasing before the war. Domestic and export demand combined were not great enough to dispose of Pacific Coast dried prunes during the 10 years before the war except at such unprofitably low prices that acreage and production were declining rapidly. Commercial exports and foreign demand for our prunes will, for some years at least, be much less than before the war. Moreover, with prospects for a very plentiful supply of competitive fruits and popular fruit products, it will be a very difficult task to increase demand and per-capita consumption of prunes in the United States.

Reduced Postwar Exports

Much of our prewar regular commercial exports to Europe that were lost during the war have not been regained. Moreover, the prospects of holding the prune exports we have regained during the past two years, on a strictly commercial basis, are uncertain and discouraging. France, our largest prewar export market for prunes, which took about 20,000 tons a year from us during 1934-1938, has taken practically none since then. We are likely to regain little if any of our prewar prune exports of about 11,000 tons, to Germany and to countries that have since been drawn into the Soviet orbit of political and economic domination.

With a few exceptions, most of our

California Poultrymen May Have More Competition For Local Egg And Poultry-meat Market Demand

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leveling off of prices has been most noticeable in California. It is beginning to show up in other states as well. Egg production per hen is as high now in some states as in California.

Feed Still a Problem

Feed supplies—the biggest problem facing the producer—is the one he can do least about. The main product of the California poultry farm is eggs. The California poultryman is in a highly specialized business, as compared with his midwestern competi-

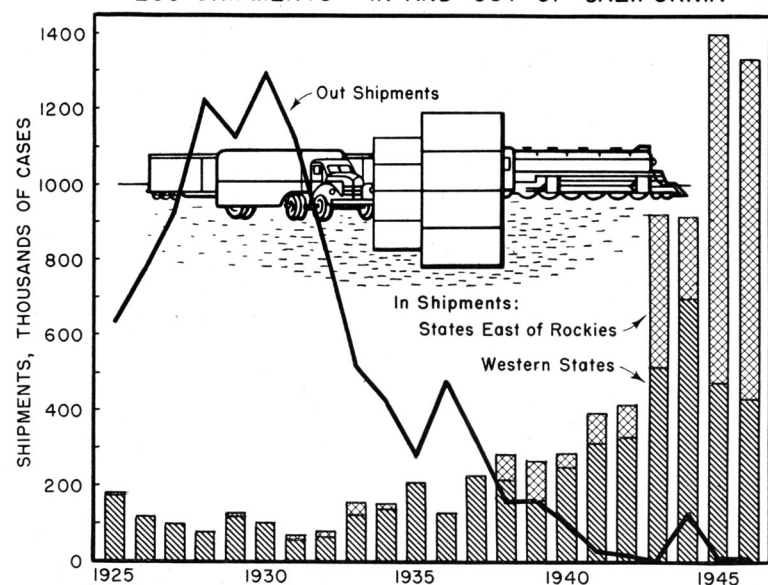
midwestern farmer, because he has specialized, but he pays more for feed.

Poultry-meat Production

The California farm poultryman is interested mainly in producing eggs. Any poultry-meat production on farms is usually a sideline.

This has resulted in an interesting situation. Fewer chickens now produce more eggs. If we were dependent upon farm chickens alone for our poultry-meat supply, there would not be enough to meet the demand, and

EGG SHIPMENTS - IN AND OUT OF CALIFORNIA



tor, who, in many cases, raises poultry as a sideline to his other farm crops. Unlike the midwesterner, the California man does not raise his own feed. He ships it in. During the past few years, grain and protein feed supplies have been scarce, and their prices have been high. Sixty per cent or more of the average poultryman's costs goes for feed. The local farmer produces better quality eggs than the

best prewar European markets have taken almost none of our prunes during the past two years chiefly because they lack the dollar exchange to spend for the more expensive foods, such as fruits. They have been forced to restrict their imports very largely to the cheaper foods in order to conserve their very limited dollar exchange for the purchase of products vital to the rebuilding of their industries. Their food imports now are very largely restricted to the cheaper sources of calories—chiefly grains, fats, oils, and some animal products.

Most of our prune exports since the war have been to the United Kingdom, Canada, Sweden, and Belgium. The very high prices we charged for our 1946 prune crop helped to restrict our exports to a total of about 73,000 tons, including prunes in salad, during the 12 months of September, 1946 through August, 1947. Europe took about 55,000 tons of this total. Of these Sweden took about 10,000 tons, Belgium nearly 7,000 tons and Canada nearly 12,000. The United States loan to the English last fall helped her to import about 32,000 tons of prunes from our 1946 crop. However, the United Kingdom, because of depleted dollar exchange, apparently will purchase very little dried fruit from us in the future, even at prices much less than those for the 1946 pack, unless we import considerably more goods from her and/or give her further liberal loans or subsidize our exports to her.

Prices

By November 5, packer's prices to growers for the 1947 crop were about 7½¢ to 7¾¢ basis for three-district French prunes. Basis prices were about 12¢ for most sizes in 1946, about 10¢ in 1944 and 1945 as compared with an average of about 2½¢ a pound for the prewar crops of 1934-1938.

For the prune crops of 1934-1938 California growers received an average of about 3¢ a pound for all varieties, qualities, and sizes and retail grocery stores in the United States received about 10¢. During the same period 50/60 processed French prunes

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per-capita consumption would be down. Such is not the case, because there has been a rapid growth, not only in California, but also in other specialized areas, of large-scale production of commercial broilers. The great rise in the number of commercial broilers has more than made up the deficit, and per-capita chicken consumption has actually increased.

For the future, there are two main considerations which must be taken into account in the broiler industry. First, the ever-present feed problem. The California broiler producer is in competition not only with the eastern producer, but also with the man who, in some sections, grows his own feed.

This brings up the second consideration—transportation rates. Any sharp rise in transportation rates might result in our having to decide which would be cheaper to ship in—feed, or dressed chickens.

In spite of the fact that some people have made profits from poultry-meat, there are more instances, to date, of a producer making a better living from eggs than from broilers.

Outlook

What the feed situation will be next year, no one knows. It depends upon the 1948 harvest and upon foreign export demands, and it is too early to make any predictions. Eventually, feed will become more plentiful, and prices will level out. When that will take place is anybody's guess.

Fortunately, the poultry industry can, when necessary, adjust faster to changes than can almost any other branch of animal husbandry.

The poultryman should keep an eye on the feed situation, and hold his business within reasonable limits.

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