State's Productive Capacity

changes in supplies of feed grains, hay, and pasturage projected for 1955 on basis of trends

Trimble R. Hedges and Warren R. Bailey

The following article is the fifth of a series of reports based on a study of California's agricultural productive capacity, that can be attained by 1955, which was conducted by the California State Committee on Survey of Agricultural Productive Capacity. The Committee included representatives of the University of California, the United States Department of Agriculture, and State agencies.

California is a deficit area in the production of feed grains and hay.

Large quantities of grain—much of it as corn—must be shipped into the State from the Midwest and other surplus areas to support the livestock industry of California.

Net inshipments amounted to three-fourths million tons in 1950 when California's production—including wheat—was nearly two million tons.

The 1950 total production was divided approximately two thirds barley, one fifth wheat, and the remainder corn, oats and grain sorghum.

Despite an over-all deficit, large quantities of grain—particularly barley—are exported each year from California to Hawaii and other offshore points, and some is shipped to other states. Outshipments of barley in the 1950 crop year totaled nearly 600,000 tons. California food and industrial uses each year require some 650,000 tons of grain—about 400,000 of which is wheat.

Feed Grain

Much of California's feed grain is produced as a cash crop; it is not fed on farms where produced. Therefore, most of it goes through well-organized market and trade channels. Hence, facilities are available for rapid changes in shipments of considerable magnitude either into or out of the State. Grain stocks on farms usually are relatively low and carry-over from one crop to another is mainly in mills, warehouses, and terminal elevators. Stocks in all positions fluctuate relatively less throughout the year than in some other areas of the country. Carry-over of old grain bears relatively little relationship to total available supply during the ensuing crop year.

Net Supply

In this study net supply—of specified grains as estimated—represents production less seed required for planting the following crop. Supply was not adjusted in this study for differences in carry-in or carry-out.

Distribution of Grazing

	All grazing	
	1950	attainable
	per cent	per cent
Rotation cropland pasture (irrigated)	22.4	26.5
Other grazing on cropland	19.4	18.0
Total on crop area	41.8	44.5
Open permanent and woods pasture, and range in farms	43.3	42.2
Total on land in farms	85.1	86.7
Private land not in farms	8.7	7.8
Public land	6.2	5.5
Total on land not in farms	14.9	13.3
Total, all grazing	100.0	100.0

In the 1950–51 feeding season the total net supply of feed grains—including wheat—was 1,965,284 tons. Of this, 648,000 tons were used for food and industrial uses. This left 1,317,284 tons for feeding livestock and outshipments. This available total was some 746,116 tons short of the 2,063,400 tons needed for livestock in the 1950–51 feed year beginning October 1.

The 746,116 tons of needed inshipments represent net or the margin of inshipments over outshipments. Actual inshipments probably amounted to 1.5 million tons and outshipments amounted to about 650–750 thousand tons, considering barley exports.

Attainable Production

The 1955 attainable production of California feed grains—including wheat—is projected at 1,792,012 tons, about 9% below the 1950 season. The amount available for livestock is estimated at 1,144,012 tons, or 14% below 1950. Food and industrial uses are estimated at the same level as in 1950.

In contrast, the feed grain requirement for livestock in 1955 is projected at 2,295,800 tons, an increase of 11% over 1950. The amount needed from inshipments will be about 1,151,788 tons—an increase of 54% over 1950.

There are two reasons for a smaller aggregate 1955 attainable production of feed grains: *1*, the 1950 production was unusually high, and *2*, grain acreage will be reduced in 1955, largely as a result of expanded cotton acreage.

The needed increase in the 1955 supply of feed grains for livestock will be for feed-lot cattle—1,000,000 as compared to 650,000 in 1950—and more chickens, broilers, and turkeys. A minor increase is expected from a rise in the number and rate of feeding of milk cows.

Hay

California is a deficit hay producing state also, though to a much lesser degree than in feed grains.

Hay production and needs would nearly balance were it not for the alfalfa milled commercially. California's inshipments of alfalfa come largely from Arizona with small amounts from Nevada and Colorado. At times California ships hay to other states.

The amount of hay production attainable in 1955 was projected at 7,083,000 tons—some 11% above 1950. The amount needed by livestock in 1955 would also be up 11%. Thus production increases would be in the same ratio as require-

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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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DAIRY

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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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