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A PROJECTION OF CALIFORNIA AVOCADO ACREAGE AND PRODUCTION TO 1977

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The purpose of this paper is to provide information on the future trend of California acreage and production. Projections of bearing acreage and production potential were made for four varietal groups for the five-year period to 1977. The projections shown in tables 1 and 2 were based on specific assumptions regarding future new acreage planted, acreage losses, and estimates of yield per acre in 1977. While these assumptions were developed after an evaluation of all available relevant information, it should be noted that these projections will become reality only if the assumptions are valid. An acceleration in acreage loss due to the ravages of root rot or higher than anticipated new planting could modify these projections in either direction.

Projection Method

The production potential for the industry in 1977 for the four varietal groups (Fuerte, other fall and winter, Hass, other spring and summer) was developed in the following manner:

As a base, the bearing and nonbearing acreage in 1969, as reported by the California Crop and Livestock Reporting Service, was used. Estimates were then made of expected new plantings during the years 1970 through 1973. It was assumed that while new plantings would occur in 1974 and beyond, these trees would not be of bearing age during the projection year 1977, New planting estimates were based primarily on reports from avocado nurserymen on the number of avocado trees which they expected to have for sale. The base acreages in 1969 plus the estimates of new acreage were then adjusted for acreage loss due to factors such as root rot, urbanization, etc. The projected bearing acreage in 1977 was then combined with estimates of yield per acre of the four varietal groups to arrive at a projected production potential in 1977 (see tables 1 and 2).

New Plantings

Estimates of new plantings were based primarily on information developed in a survey of avocado nursery stock. This survey, made in March 1971, collected information from twelve nurserymen out of a total list of sixteen growing avocado trees for commercial planting. It is estimated that the included nurserymen produce 90% or more of the total production of avocado trees. Nurserymen were asked how many avocado trees they would have available for sale in 1971, how many in 1972, and in 1973. It should be

recognized that the estimates for 1972 and 1973 are less reliable than the current year because of the possibility of making future changes in production plans. The survey indicated 355,602 trees available for sale in 1971, 411,400 trees in 1972. and 454,900 trees in 1973. The varietal composition of the trees available for sale in 1971 was 62% Hass variety, 27% other fall and winter varieties, 6% Fuerte variety, and 5% other spring and summer varieties. For projection purposes (table 1) tree numbers were converted to acreage on a basis of a 70% survival rate and tree numbers per acre as follows: Hass - 110; Bacon - 135; Fuerte - 110; Zutano - 120.

Acreage Loss

It was assumed that the average rate of acreage loss for the industry during the seven year period 1970 to 1977 would amount to 1,214 acres per year or a total of 8,500 acres. Available information on past acreage loss, while incomplete, indicates average acreage loss close to 1,000 acres per year. The magnitude of future acreage loss due to root rot and the pressures of urbanization is difficult to estimate.

Yield Per Acre

Appropriate estimates of yield per acre of bearing acreage by the four varietal groups in 1977 were made in order to project production potentials in 1977. The estimates used were: Fuerte — 5,200 Ibs. per acre; other fall and winter varieties — 6,500 Ibs. per acre; Hass — 7,500 Ibs. per acre; and other spring and summer varieties — 7,000 Ibs. per acre. These estimates are not intended to represent the yield of good commercial orchards but were selected to represent average yields for total state acreage used in the projections. Historical data indicate average yield per acre for the period 1965-66 to 1969-70 was 5,100 Ibs. per acre for Fuertes; 5,901 Ibs. per acre for other fall and winter varieties; 6,894 Ibs. per acre for Hass variety; and 6,062 Ibs per acre for other spring and summer varieties.

Summary

The projections based on the stated assumptions indicate that bearing acreage of California avocados will move from the current 18,000-acre level to the 23,000-acre level in 1977. Total production would rise from the 100 million pounds annual production potential to the 150 million pound level by 1977. As in the past, crops from year to year could vary significantly above or below this production potential level. Using past relationships of year to year variation in crop size, 1977 production could range between 85 million pounds and 200 million pounds,

An important shift in the varietal composition of the crop is also indicated. The production potential for the Fuerte variety is indicated to drop from the 51-million-pound level to the 34-million-pound level in 1977. Other fall and winter varieties will increase in volume from the 11-million-pound level to the 28-million-pound level. A significant increase in the Hass variety is indicated with a production potential moving from the 32-million-pound level to 80 million pounds in 1977. Other spring and summer varieties will

increase slightly in volume from the 10-million-pound level to 12 million pounds in 1977.

This prospective increase in total production in the industry during the next five years and particularly the shift to larger Hass crops have important implications to the industry. All marketing agencies and industry groups should continually evaluate their operations in light of this changing industry situation.

TABLE 1. CALIFORNIA AVOCADOS – A PROJECTION OF BEARING ACREAGE TO 1977

Variety	Bearing acreage 1969 (1)	Non-bearing 1969 (2)	New acreage planted 1970 (3)	1971 (4)	1972 (5)	1973 (6)	Total columns 1 - 6 (7)	Acreage loss 7 yrs. 1970-1977 (8)	Estimated bearing acreage 1977 (9)
					– acres –				
Fuerte	9,869	492	100.0	119.9	175.0	187.7	10,944	4,500	6,444
Other fall & winter	1,898	1,102	500.0	601.7	749.8	894.7	5,746	1,500	4,246
Subtotal	11,967	1,594	600.0	721.6	924.8	1082.4	16,690	6,000	10,690
Hass	4,671	2,408	1200.0	1349.9	1471.9	1608.7	12,709	2,000	10,709
Other spring & summer	1,600	200	100.0	91.3	102.1	126.3	2,220	500	1,720
Subtotal	6,271	2,608	1300.0	1441.2	1574.0	1735.0	14,929	2,500	12,429
All varieties	18,038	4,208	1900.0	2162.8	2498.8	2817.4	29,725	8,500	23,119

Column 1 & 2 – Source, California Crop and Livestock Reporting Service, Sacramento.

Column 4, 5, & 6 – Based on survey of trees available for sale by nurserymen, 70% survival rate and average planting distances.

Column 8 – Based on industry estimates – loss of 1214 acres per year.

Column 9 – Column 7 less Column 8.

TABLE 2. CALIFORNIA AVOCADOS – A PROJECTION OF PRODUCTION TO 1977

Variety	Average production 1966-1970 (1) mil. lbs.	Estimated bearing acreage 1977 (2) acres	Estimated yield per acre 1977 (3) lbs.	Estimated production potential 1977 (4) mil. lbs.
Fuerte	51.2	6,444	5,200	33.5
Other fall & winter	11.2	4,246	6,500	27.6
Subtotal	62.4	10,690		61.1
Hass	32.2	10,709	7,500	80.3
Other spring & summer	9.7	1,720	7,000	12.0
Subtotal	41.9	12,429		92.3
Total all varieties	104.3	23,119		153.4

Column 1 – Source: California Crop and Livestock Reporting Service, Sacramento.

Column 2 – From table 1.

Column 3 – Industry estimates.

Column 4 – Column 2 X Column 3.

Note: Using a 1977 production potential of 153.4 million pounds and past relationships of year to year crop variation, the 1977 crop could range between 85 and 200 million pounds.