

TABLE 2—CLIPPING DATA COMPARISONS FOR ALFALFA SEED TRIALS

Treatment No.	Date clipped	Per cent yield			3-year average
		1959	1960	1961	
1	None	91	96	89	92
2	4/4		94	94	94
3	4/10	99	94	95	96
*4	4/20	100	100	100	100
5	5/2		93	82	88
6	5/16	84	84	89	86
7	6/1	56	74	84	71
8	6/16	29	31	68	43

* The yield of No. 4: 1959, 646; 1960, 1258, and 1961, 1339 pounds/acre.

however, in 1959 all dates from April 10 through April 20 were equally favorable. It would be expected with more years of data that the favorable period would be roughly April 10 to April 25. The drop in production of stands clipped after May 1 was too high to risk a later clipping date.

Early clipping

Clipping too early also has its drawbacks. First, there must be time after spring begins to clean out weeds and volunteer seedlings. This is done most effectively after spring rains are over, or in late March or early April. Second, based on chalcid emergence data, alfalfa clipped back from April 15 to April 25 would miss better than 93 per cent of the overwintering chalcid emergence. Seed pod formation on these stands would start about May 20 to June 1, and suitable pods for chalcid egg deposition would be available June 4 to 15. In 1961 overwintering chalcid fly emergence was over on June 9, resulting in less than 7 per cent of the overwintering brood being present to infest the early developing seed pods.

Chalcid infestation

The chalcid infestation in per cent of seed destroyed in 1959 was 23.8, 1960—12.4, and 1961—6.4 per cent. In 1961 there was no clear cut increase in chalcid injury exhibited on the various cutting back dates. In previous years the later dates, May 15 to June 16, showed higher chalcid damage. Plant populations resulting from within-row thinning, row-widths and skip-row plantings did not influence the chalcid infestation as measured by seed damage.

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Kapareil, a new small-kernel almond variety, may be the answer to demands of manufacturers of candy bars for small-sized nuts—an almond industry marketing problem that has existed for many years. Because of the need for such a variety, Kapareil is being released now by the California Agricultural Experiment Station for unrestricted propagation. The variety has consistently produced a high percentage of the desired sizes in different seasons, from different test plots. The tree shows promise of effective use in orchards although certain undesirable characteristics have been recognized. These and long-time productivity can best be analyzed with commercial plantings.

Kapareil was tested under the number 18-24. It resulted from a cross made in 1951 between Nonpareil and Selection 24-6. The 24-6 selection was the seedling from a cross of Eureka × A5-25 (Nonpareil × Eureka). The original seedling tree of Kapareil is growing at Davis. Most records have been taken from a tree that was top-worked in March, 1953, at the Wolfskill Experimental Orchard, Winters. Initial selection of this promising seedling was made from 1955 nut samples and confirmed in 1956. In spring 1957, field test plots were established in principal almond growing counties by topworking mature trees. Samples were obtained from these trees in 1959, 1960 and 1961. During the winter 1959-60 several commercial test plantings of Kapareil were established utilizing June budded nursery-grown trees. At the same time test plots in which Kapareil limbs were grafted into mature Nonpareil trees were established in three locations.

Tree characteristics

Trees resemble Nonpareil in growth habits except that they tend to produce smaller diameter shoots and more lateral branches on new growth. Average size of mature trees has not been determined but probably will be no larger than the size of Nonpareil trees and may be smaller. Kapareil blooms profusely and begins to bloom at a young age. The time of bloom is the same as Nonpareil or two or three days before. In hand-pollination tests the variety cross-pollinates readily with Nonpareil, Mission (Texas) and Davey. Individual trees have been productive. Comparative yields with other varieties on an acreage basis are not available. Hulls dehisce like those of Nonpareil but begin to open as much as a week earlier. Harvesting dates of different plots have varied

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from shortly after the first of August to near the first of September. Normally harvesting should be just prior to Nonpareil.

So far no evidence of bud-failure (crazy-top) has been observed on any tree although it is probably too early to be certain that symptoms will not appear. Specific tests on bud-failure susceptibility are underway.

Kapareil is not compatible with Mariana 2624 rootstock.

Nut characteristics

The shell is paper thin and with a shelling percentage of about 70. In samples examined so far the seal of the shell along the suture varies from well closed to quite open, depending on season and area. This characteristic may be a disadvantage and





-a new small-kernel almond variety for confections

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in certain cases may result in partial loss of kernels at harvest and increased incidence of worm damage. However, worm damage counts in recent samplings have not been greater than for comparable Nonpareil samples.

Kernel characteristics

Kernels resemble those of Nonpareil in appearance and shape very closely, differing principally in size. Whereas Nonpareil kernels usually fall within the range of 20 to 30 per ounce, Kapareil has consistently produced a high percentage of kernels 30 or more per ounce. Few double or defective kernels are produced. Taste tests conducted by candy manufacturers have rated Kapareil equal to or better than Nonpareil when roasted and combined with chocolate. Preliminary tests indicate that kernels of the same size of the two varieties can be mixed and handled together in candy bar manufacture.

Use of the variety

Since experience with Kapareil planted on a commercial scale is lacking, a grower should use some discretion during this initial period of commercial trial. The following are suggestions on the use of Kapareil in orchard planning.

1. As a pollinizer of Nonpareil. Suggested combinations would be as follows: in a two variety combination, one row of Kapareil with two rows of Nonpareil; in a three variety combination, alternate every other row of Kapareil with another pollinizing variety making one row of Kapareil in every six.

2. Grafting into Nonpareil. Preliminary tests indicate that a pollinizing limb of Kapareil can be satisfactorily grafted into Nonpareil trees. Experience with the

Nuts and kernels of Kapareil almond are pictured at top of page and a tree in bloom at bottom, left. Photos above show shape of nuts and characteristic separation of shell at suture.

procedure is limited but where used we suggest that one secondary limb be Kapareil.

3. As a temporary interplant. Using Kapareil as an interplant among trees of other varieties permanently spaced is a way by which early volume production could be obtained by the industry with a minimum of risk to individual growers. One procedure would be to interplant trees of Kapareil throughout the orchard with the intent to remove them at some

time in the future. Another procedure would be to use a combination of varieties as interplants such that two complete orchard arrangements are planted together, one involving Kapareil, the other utilizing standard varieties. The decision as to which combination will be retained permanently would depend upon their comparative behavior in that particular orchard.

Since such orchard arrangements have been utilized little with almond, any planting of this type should be worked out with the aid of local Farm Advisors in each county.

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DISTRIBUTION OF PROPAGATING WOOD

Distribution of propagating wood from the University of California will be handled by the FOUNDATION PLANT MATERIALS SERVICE, UNIVERSITY OF CALIFORNIA, DAVIS, CALIFORNIA. A fee will be charged for this propagating material to cover cost of handling.

The primary source of scion and budwood is the original seedling tree. Indexing tests for possible virus diseases were started with this tree in 1960. Secondary sources of scion wood are trees propagated by buds from the original seedling tree onto seedling peach or almond rootstocks. Propagating wood from both sources is available from Davis during winter, 1961-62, but in limited quantities. Requests will be received until February

25th after which allocation will be made on an equitable basis.

Additional propagating wood exists in secondary sources away from Davis. Individuals should contact their local Farm Advisor for location of these and make their own arrangements.

IT IS RECOMMENDED THAT NO SCION OR BUDWOOD BE TAKEN FROM TREES OTHER THAN THOSE GROWN ON SEEDLING PEACH OR ALMOND ROOTSTOCKS. THERE IS SOME DANGER THAT TEST PLOT TREES, WHICH ARE MAINLY GRAFTED ONTO MATURE ORCHARD TREES, MAY HAVE BECOME INFECTED WITH VIRUS DISEASES FROM THE UNDERSTOCK.