

A random mating population of 200 4-way plants was grown for increase in a greenhouse ground-bed in 1981. Because all 4 inbred parents were gynocious, it was necessary to apply 250 ppm silver thiosulfate,  $\text{Ag}(\text{S}_2\text{O}_3)_2$ , to induce development of enough staminate flowers to accomplish pollination. Two additional cycles of mass selection for fruit type were completed in the greenhouse before the population was released and distributed to United States seedsmen.

### Disease resistance

The parent inbreds, although selected for diversity in origin and fruit type, were homozygous for resistance to the 7 diseases listed in Table 1. Based on greenhouse and field tests conducted after the final cycle of mass selection, WI 2843 was uniformly resistant to all of the diseases listed, except powdery mildew (PM). (The resistance to

anthracnose, downy mildew, and powdery mildew was confirmed in field tests by E.V. Wann at the U.S. Vegetable Lab., ARS, USDA, Charleston, S.C.) There was segregation for 2 levels of PM resistance, the intermediate type of inbred GY 14, and a nearly immune reaction characteristic of WI 1983. Only WI 1589 is resistant to bacterial wilt, and only WI 1895 is resistant to target leaf spots. Therefore, in addition to the homozygous resistances listed in Table 1, WI 2843 segregates for resistance to bacterial wilt, *Erwinia tracheiphila* (E.F. Smith) Holland and target leaf spot, *Cornynesporea cassicola* (Berk & Curt) Wei. (Greenhouse resistance to target leaf spot confirmed in field exposure tests by J.O. Strandberg at the Univ. of Florida Research and Extension Center, Sanford, Fla.). With appropriate screening and selection procedures, resistance to the latter 2 diseases can be established in addition to the 7 for which only field selection should be necessary.

### Description

The breeding population WI 2843 is homozygous white spined (*bb*), nonbitter (*bibi*), gynocious (*FFMM*), and indeterminate (*DeDe*). Fruit will vary from about 2.7 to 3.2 length/diameter ratio with both fine and coarse spines (Fig. 1). The prevalence of gynocious types will require early applications of  $\text{Ag}(\text{S}_2\text{O}_3)_2$  in the field or vegetative propagation of selected plants so that they can be self pollinated. Interior structure of fruit varies enough to provide an opportunity to select desired types.

### Availability

Seed of WI 2843 from a hand-pollinated greenhouse increase may be secured by addressing requests to J.E. Staub, USDA, ARS, Dept. of Horticulture, Univ. of Wisconsin, Madison, WI 53706.

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## 'Kochba' Almond

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'Kochba' is a high yielding, semi-hard shelled, well-sealed cultivar of almond, with an attractive light colored kernel.

### Origin

'Kochba' almond (*Prunus dulcis* (Mill) D.A. Webb syn. *P. amygdalus* Batch), named after the late J. Kochba, was derived from a cross between 'Greek' and 'Nonpareil' made by the author and J. Kochba in 1967 at the Division of Fruit Tree Breeding, Volcani Center Bet-Dagan, Israel. The tree was selected in 1972 as seedling Bet-Dagan 52/67-12, no. 53. It was distributed in 1974 for test plantings as trees budded on almond seedling stock. In one location, 'Nemaguard' peach also was used as the rootstock. The original seedling fruited for 6 consecutive years. Five harvest yields have been determined on the grafted trees. Additional trees on bitter almond have fruited for 2 seasons.

### Description

The tree is medium sized (smaller than 'Samish' and somewhat larger than 'Ne Plus Ultra'). It has a tendency for drooping branches and is somewhat difficult to train. Over 80% of the fruit is borne on spurs. The flowering period is earlier than 'Ne Plus Ultra' and later than 'Um el Fahm' (also known as 59/4). Kochba also can serve as a pollinizer for the 2 main cultivars grown in the country.

The shells are semi-hard and completely sealed, with nearly full retention of the outer cork. They are fairly light colored, some-

what asymmetric, and have numerous pores (Fig 1). The shelling percentage (kernel weight/in shell weight) is about 51%. The kernels are oblong ovate and relatively flat (less than 8.5 mm thick), smooth, with a light colored seed coat resembling 'Nonpareil', but they are less elongated, of larger than medium size (63/100 g) and fairly uniform. The kernel has a width/length ratio of over 60%. Double kernels are 8% on the average. The kernels have a good flavor. The rate of infestation by the carob moth, *Ectomyelois ceratoniae*, is very low.

Yields of the trees on almond seedling rootstock have been 30% higher than those of 'Ne Plus Ultra'. The 5 year average was (kernel yield) 1700 kg/ha. 'Kochba' has also outyielded all other advanced selections in the plot with the exception of one.

### Availability

Budwood will be available by 1986 from the Division of Fruit Tree Breeding, ARO, The Volcani Center, Bet Dagan. An Israeli patent is pending.

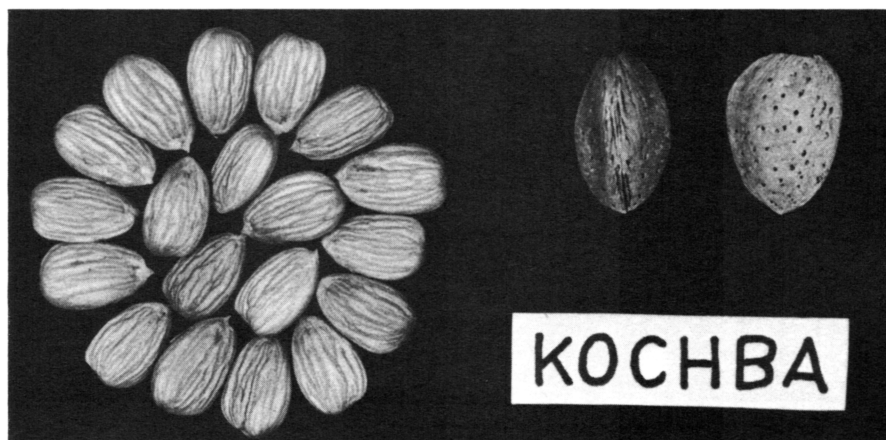


Fig. 1 'Kochba' almond kernels and unshelled nuts.

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