Higher plant populations can increase cauliflower yields

Robert A. Brendler

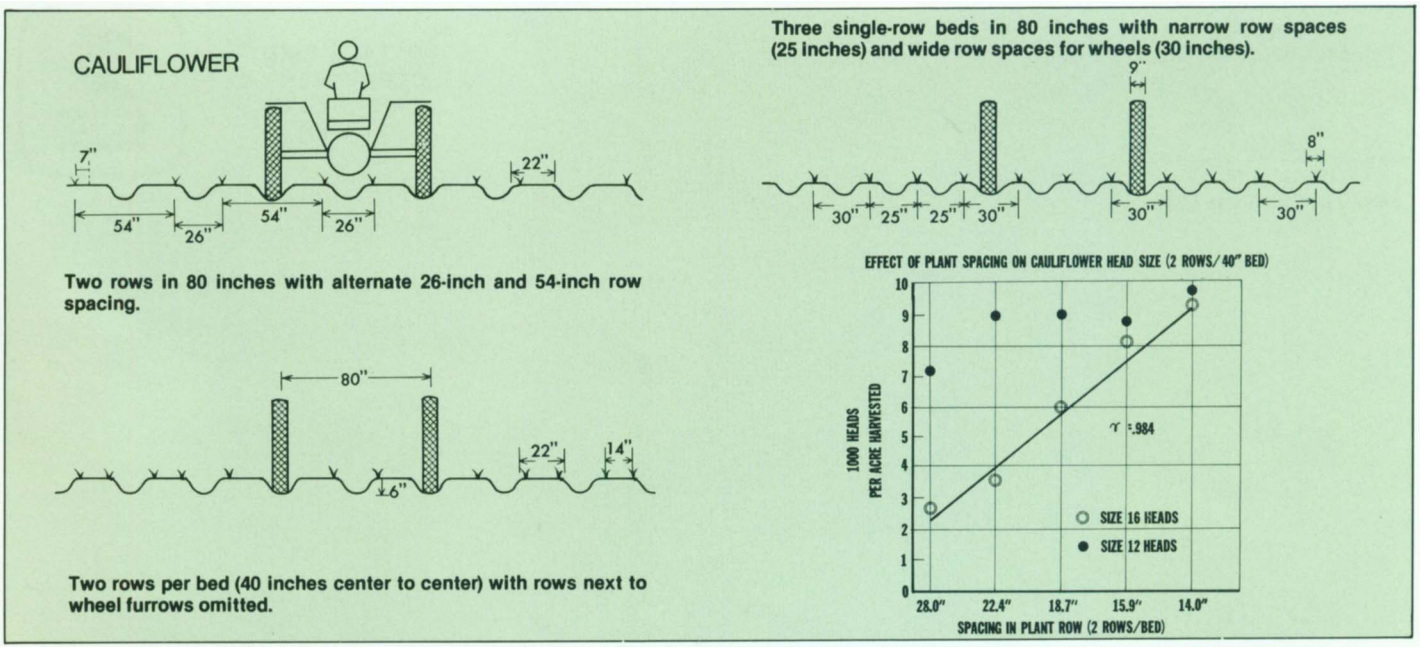
Cauliflower growers need high yields to justify high land costs. New spacing practices can increase yields by as much as 50 percent.

Determining the optimum row spacing for cauliflower on the Oxnard Plain in Ventura County has been a chronic problem. When plants are spaced 14 inches apart on standard 40-inch vegetable beds they appear crowded and their protective jackets may not be as large as desired. Since tractor and trailer wheels are spaced at 80 inches (to straddle two 40-inch beds) for most other vegetable crops, it is expensive and inconvenient to modify this spacing for cauliflower. When cauliflower is planted one row per 40-inch bed the land area and sunlight in the field are only about two-thirds utilized. A 50 percent increase in plant population would improve efficiency of land use and could be achieved either by making three single-row beds per 80-inch wheel width or by planting two rows per bed rather than one and adjusting plant spacing within the rows from 14 inches to 18 2/3 inches (figures).

The three row in 80 inches system requires special equipment for bed-shaping, planting, and cultivating. The two rows per 40-inch bed system (four rows in 80 inches) does not leave enough space across the furrows for tractor and trailer wheels at harvest time. This problem can be solved by not planting rows adjacent to those furrows where wheels will run at harvest time.

Two spacing experiments have provided information on the response of cauliflower to spacing arrangements. In both experiments, it was found that increasing plant population by as much as 100 percent over the conventional spacings had little or no influence on the yield of size-12 heads. The yield increase that occurred was found to be almost entirely due to increases in the number of size-16 heads. Even with twice the conventional plant population, the yield of size-20 heads was small.

Size-12 heads are desirable because of the market demand for this size and



because it costs less to cut and pack a small number of large heads than a large number of small heads. Head size in cauliflower is designated by the number of heads it takes to fill a package with 23 pounds of cauliflower. Sizes are mostly 12 and 16, but small amounts of sizes 9 and 20 are also packed.

The graph shows that the number of size-12 heads harvested per acre is only slightly influenced by the number of heads per foot of bed and that the number of size-16 heads harvested per acre is well correlated with the number of plants per foot of bed. Beds were 40 inches from center to center and there were two rows per bed.

It was found that nothing was gained by staggering plant locations as compared with plants placed straight across the bed from one another in plantings of two rows per 40-inch bed.

Cauliflower growers need high yields to justify the high rent they are paying for land where the climate is suitable for a long harvest season. Information developed in these spacing trials suggests that yields of size-16 heads can be appreciably increased without reducing yields of size-12 heads by increasing plant populations. Increasing plant populations by 50 percent or more over the conventional planting of one row per bed calls for extra expense, perhaps special equipment, and some inconvenience. However, many expenses such as land rent, seedbed preparation, and pest control are the same regardless of yield and higher yields tend to reduce harvest costs.

Robert A. Brendler is Farm Advisor, Ventura County.

ERRATA for May 1978, *"Eutypa* fungus causes grapevine dieback," p. 9:

Paragraph 2, reference to fig. 2 should be to fig. 3; reference to fig. 3 should be to fig. 2.

The two Grenache cordon branches in fig. 4 should be switched—the site on the right was inoculated with agar.