

WITH THE DEVELOPMENT of a commercial machine for once-over harvesting of cucumbers for pickling, studies have been directed to obtain information on cultural practices necessary for a single machine harvest. Previous work on canning tomatoes emphasized the effectiveness of scheduled plantings (*California Agriculture*, Vol. 19, No. 4; April, 1965) for a single harvest.

Date-of-planting studies were made at Davis with pickling cucumber varieties SMR-58 and Spartan Dawn. The experience with tomato varieties for machine harvesting proved that planting could not be scheduled by simply following calendar dates. Soil temperatures affected the time required for seed germination and emergence of seedlings. As with the tomato, identification of a definite size or physiological age of the cucumber seedling was the goal of this study and ended in selection of the first true leaf as the indicator (see photo).

The development and growth of the cucumber seedling from emergence to the first true leaf (fully expanded) stage is also shown in photos. A major factor in the time required for this development is the temperature of soil and atmosphere (assuming soil moisture and nutrients are optimum for growth). Using the fully expanded first true leaf as an indicator offers the most accurate calculation for subsequent planting dates.

When the plants in a date of planting reached the first true-leaf stage, this determined the next date of planting. Thus, when the seedling development of the first planting (May 17) reached the first true-leaf stage, a second planting was made. This occurred on June 1 (see photo with four dates of planting). The number of days required for growth of cucumber seedlings of the variety SMR-58 from emergence to harvest varied from 43 to 55 days, as shown in the table. A September 3 date of planting was too late to mature during the normal season. The average daily soil temperature at the two-inch depth during the period of May 17 to September 15 was from 80° to 91°F. Spartan Dawn was three to four days earlier maturing than SMR-58.

DATE-OF-PLANTING STUDY
Variety SMR-58, Davis, 1965

Planting date	Emergence	First true leaf	Harvest	Days from emergence to harvest
May 17	May 22	June 1	July 16	55
June 1	June 7	June 15	July 26	55
June 15	June 21	June 27	Aug. 3	43
June 25	June 30	July 6	Aug. 12	43
July 9	July 14	July 19	Aug. 26	43
July 20	July 25	July 31	Sept. 11	48
Aug. 2	Aug. 6	Aug. 12	Sept. 24	49

PLANTING DATES

for mechanical harvesting of cucumbers

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Top photo below, development of cucumber seedling from cotyledon, left, to first fully expanded true-leaf stage. Center photo, close-up of cucumber cotyledon, left, and first fully expanded true-leaf stage, to right. Bottom photo, stages of development for different cucumber planting dates: No. 4, May 17; No. 3, June 1; No. 2, June 15; and No. 1, June 25.

