

# Cucumbers Need Careful Management

*Fred C. Harper*

Approximately a thousand acres of cucumbers for pickling were grown in central Arizona last year. For most of the half-dozen growers involved, cucumbers were a new venture, and they quickly learned several things.

For one thing, they discovered that there is a definite market for this lowly member of the cucurbit family — provided they can deliver the sizes and grades that processors require.

They found that cucumbers can fit nicely into the commercial vegetable production picture in central Arizona. Except for harvesting machinery, no special equipment is needed and the

crop to some extent can be handled in a fashion similar to cantaloupes.

Finally, they learned that the production of cucumbers requires very careful management, with precious little room for mistakes in judgment or timing.

In most instances, cucumbers are grown with once-over mechanical harvesting in mind. The crop also grows and matures rather quickly (45-75 days). Seemingly simple matters such as seed depth, plant spacing and weed control become critically important and can spell the difference between success and failure.

With respect to variety, some processors may indicate a definite preference. Others will not. Field trials and the experience of growers suggests that white-spined varieties generally

do better than the black-spined types because the fruit stays green slightly longer, thus extending the harvesting period.

Mariner, Explorer, Patio Pik, Triple Cross, Southern Cross, Premier, Pickmore, Early Pik, Bravo and Pioneer are among those varieties that seem well adapted to growing conditions in central Arizona.

In any event, it is important to make sure the seed mix contains a pollinator variety. Information pertaining to this should appear on the seed tag and, in some cases, the pollinator will be dyed a different color for easy identification. As a rule, it is safe to figure on a seeding rate of 4-5 pounds per acre.

In central Arizona, it appears that cucumbers can be planted from March 1 to April 20 and July 25 to September 15. To insure uniform emergence from spring planting, wait for a minimum average soil temperature of 55°-60°. (Test at 8 A.M. and again in mid-afternoon to arrive at an average temperature. Research work in Florida and Michigan indicates that plant

**Ted Szymanski, a custom harvester operator, plies his trade in a Chandler field. The machine harvests about one acre per hour, under normal conditions, as well (if not better) than a hand harvest crew.**

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populations from 200,000 to 400,000 per acre will give profitable returns.

Growers here still are experimenting, but at present, excellent results have been obtained with a plant population of 70,000-100,000 per acre. This amounts to 4-6 plants per linear foot of row, with two rows on a 40-inch center-to-center standard vegetable bed.

Uniform emergence and a uniform stand without skips is most important. Late emerging plants add nothing in the way of marketable fruit and in fact act like weeds in that they compete for water and fertilizer and complicate harvesting procedures. Skippy stands produce more variability in fruit sizes, which cuts down on the value of this crop.

Light, sandy soils appear to be best for early spring and late summer plantings, mainly because this type of soil tends to be warmer and thus promotes rapid emergence and early growth. Sandy soils also drain quickly, making it easier to remain on schedule when rain occurs during harvest.

Silty loams and sandy loams can be utilized to advantage for April and late July or early August plantings, since these soils hold moisture fairly well and remain relatively cool.

Regardless of soil-type, it is most important to prepare the seedbed in a fashion guaranteed to eliminate clods and permit planting to a uniform depth. Although Planet Jr. type planters can be used satisfactorily (if graphite is mixed with the seed in the hopper) the precision-type models generally are preferable. They give a

more uniform spacing, require less seed and eliminate thinning.

In field trials last year, Prefar, in a preplant application, did an adequate job of controlling grassy weeds with little or no injury to the cucumber plants. We may be able to use pre-emergence application of Dinoseb, in combination with the Prefar, for control of broad leaf weeds. To date, this material is not yet cleared for this use.

Several as yet unregistered materials show promise, but Alanap and Amiben (standard materials in the Midwest) have not proven effective in Arizona.

Soil analysis prior to planting and petiole analysis during the growing season have proven to be excellent management tools when it comes to fertilizer. As a rule, a planting with a population of upwards to 100,000 plants per acre will need approximately 100 pounds of actual nitrogen and 70 pounds of phosphorus to carry it through the growing season.

It appears best to apply all of the phosphorus and about half of the nitrogen prior to planting, with the remaining nitrogen going on as needed. If a cucumber plant is allowed to become deficient in nitrogen, while fruit is developing, an unusually high percentage of crooks and nubbs may result.

Where irrigation is concerned, cucumbers should be treated in a fashion similar to melons. That is to say, enough water should be provided in the beginning to effect germination and the development of a vigorous root system. At the same time, care

should be taken not to over-water during the early stages of growth.

Once the plants have reached the 2-3 true-leaf stage, soil moisture should not be allowed to drop below 50-60 percent of field capacity. It is important that the plants are not stressed for moisture from this stage on, or flower reversion will take place in most varieties. In the varieties grown for mechanical harvest, this means the flowers will revert to male, decreasing the potential number of fruit per plant. A good crop of cucumbers, maturing in 55 days, will require 3 to 4 acre feet of water. Cucumbers are reasonably salt tolerant, providing the water is not too salty and a good water management program is followed.

To insure adequate pollination, it often pays to supply at least one hive of bees per acre. Work in several states, including North Carolina and Michigan, has shown yield increases of 20 to 25 per cent from the use of bees.

Here in Arizona, leaf miners have been the major insect pest in fall plantings and white flies in the spring. However, mites, thrips, aphids and flea beetles could become troublesome on occasion.

Time of harvest depends largely on the processor and the size of fruit he wants. As a general rule, a field is ready to harvest with about 10 to 15 per cent of the fruit at least 2 inches in diameter. Presently, harvesting costs are based on tonnage with a minimum of \$60.00 per acre and yields on the average run 4 to 7 tons per acre.

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