

Good fruit set vital in watermelons

NEWARK, Del. — Watermelons are a high value crop in Delaware, but they require extensive management for profit. University of Delaware extension vegetable specialist Ed Kee estimates about 2,000 acres of this popular fruit are grown annually in the state. He's been working closely with producers over the past few years in an effort to help them grow and market their melons more effectively.

"Most growers feel that if they can get good early fruit set, they'll stand a better chance for profitable returns," the specialist says. "When you analyze your yield per acre and relate this to the number of melons produced per plant, the need for good fruit set becomes even more obvious."

Because watermelon vines run together and overlap, it's hard to get a handle on just how many melons per plant are harvested in a commercial field. Estimates range from one per plant to three or four. "By setting up a hypothetical example on paper," Kee says, "you can start to zero in on the yield per plant in your own operation."

A spacing of 6 feet by 3 feet gives 2,420 plants per acre. If one 20-pound melon is harvested from each plant, that means a yield of 48,000 pounds an acre. At 8- by 4-foot spacing, or 1,361 plants per acre, the yield with one 20-pounder per plant is 27,220 pounds per acre.

The above illustration shows two things: first, that spacing can

affect yield, and second, that even one full-grown melon per plant can result in good yields at the closer spacing. "The hard question growers must ask themselves is whether it's realistic to expect one melon per plant, or one large and one smaller melon-or some other combination-at the various possible spacings," Kee says.

Understanding the factors which affect fruit set in watermelons will make such production decisions easier.

During the 1930s and 1940s researchers at several agricultural experiment stations across the country studied the factors affecting fruit set in this crop.

One thing they discovered was that fruit set depends on the number of leaves the plant is carrying. "Because the dry matter content of each watermelon is made up largely of carbohydrates, the plant needs a lot of leaves to develop fruit properly," the specialist explains. "Thus, one step toward good yields is to encourage rapid early growth. Of course, there's a danger of applying too much fertilizer and delaying flowering. But, all things being equal, it appears that the plant with the most leaves will set fruit soonest and grow out that fruit best."

In a related study, researchers showed that removing defective melons increased final yield. A growing melon tends to inhibit setting of other female flowers on

the vine. This means that if a misshapen fruit is present, setting of a subsequent normal one may be delayed for several weeks.

Another study showed that when the number of melons per plant was limited to two, the greatest returns were realized from the standpoint of earliness and total yield, Kee reports. When fruit production was limited to one melon per plant, the increased size did not compensate for decreased yield. "This doesn't mean that Delmarva growers need to control the number of melons per plant," he says. "But it does indicate how a watermelon vine sets, grows and compensates for developing fruit."

Scientists also found that more fruit is set during cooler weather or during the cooler parts of the day. Temperatures in the high 90s and over 100 degrees F are detrimental to fruit set. "This is somewhat academic because we can't control the weather, but with irrigation and other good growing practices we can help plants cope better with weather extremes," Kee says.

A more important factor influencing fruit set is competition for food material. This will affect set and development even more than environmental conditions.

"This competition probably exists between fruit and flowers already set," the specialist says. "It's also known that developing melons pull the bulk of their food from the leaves closest to them. This is important in terms of fertility

programs and other factors affecting the movement of nutrients within the vine. An obvious example is blossom end rot, or shriveled melons, a condition usually associated with dry soil and calcium deficiency."

Irrigating to maintain even soil moisture will help avoid this problem, as will proper liming to provide calcium in the soil. This nutrient is immobile inside the plant, so it won't move from distant leaves into those closest to developing fruit. A sidedressing of

calcium nitrate may be useful to prevent blossom end rot, Kee says. Pruning may also help if large numbers of shriveled melons occur.

For further recommendations on a fertility program for watermelons, he suggests growers consult the 1984 edition of the extension bulletin, "Commercial Vegetable Production Recommendations." Copies are available from county extension offices in Newark (451-2506), Dover (736-1448) and Georgetown (856-5250).

FFA's visit Trenton

NEW BRUNSWICK, N.J. — FFA Chapter Presidents and their advisors throughout New Jersey participated in the Chapter Presidents' Tour of Trenton on Feb. 23. This event was part of National FFA Week celebrated by nearly 450,000 FFA members nationwide from Feb. 18-25.

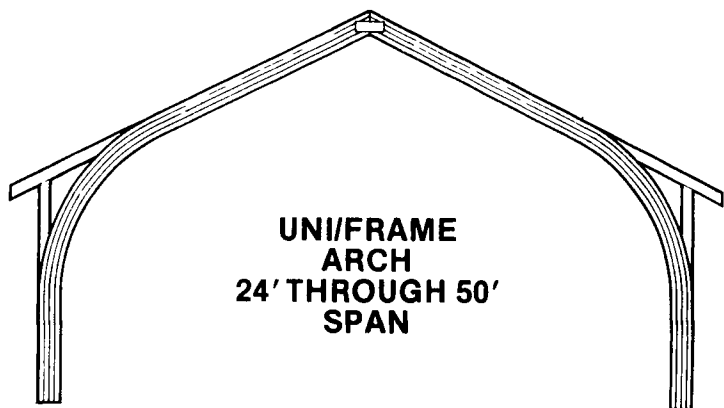
The tour consisted of visits to the Department of Agriculture Laboratories, the Farm Bureau and the State House. Students had the opportunity to speak with entomologists, chemists, seed and animal health specialists while viewing the practices and operations of the staff.

President Walter Ellis of the Farm Bureau and the Secretary of

Agriculture, Arthur Brown, discussed issues of New Jersey agriculture with the student leaders.

Gov. Thomas H. Kean met with the group and presented the signed Proclamation to the State FFA President, Steven Gruenberg, and his fellow State Officers. The Governor then answered questions raised by the FFA members.

This opportunity to tour Trenton and meet with state leaders was a unique and educational experience for vocational agriculture and FFA students who are preparing for careers and leadership positions in New Jersey agriculture.



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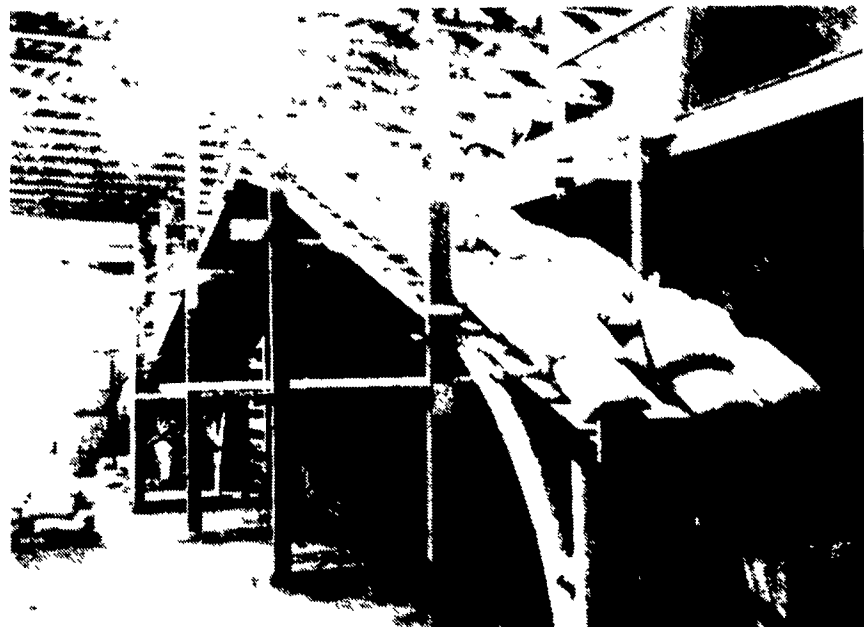
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