

Spark Plugs Fouled

(Continued from Page C5)

event for beef producers will feature breeding cattle sales, steer and heifer shows for junior exhibitors, more than 60 commercial exhibits, and an educational program focusing on the management of beef cows and calves. Thursday, Friday, and Saturday, March 28, 29 and 30. Penn State Ag Arena, University Park. Registration fees will vary.

Seedless Watermelons

Perhaps the most significant recent event in watermelon breeding is the development of seedless varieties for production. Although some people still prefer spitting out the seeds found in traditional watermelons, many others find it enjoyable to eat a watermelon without having to deal with seeds. In many cases, seedless watermelons are also sweeter than seeded watermelons.

The genetic technology to breed seedless watermelons was originally demonstrated in the early 1950s, although commercially acceptable varieties have only recently become available. Basically, unlike most organisms (including humans) which are "diploid" and have two sets of chromosomes, seedless watermelons have three. Thus, they are often referred to as "triploid" watermelons because of the three (hence "tri") chromosome sets.

Since they are sterile (seedless) and can't reproduce themselves, triploid seeds are obtained by making hybrids between diploid plants and "tetraploid" plants (i.e., those with four sets of chromosomes). This process is tedious and labor-intensive; thus the cost of triploid watermelon seed is often in the range of 25 to 30 cents per seed.

Although the chromosome imbalance in the triploid seedless plants does not seem to suppress the growth or development of the plant, it has a dramatic effect upon seed production in the fruit. The viability of both pollen grains and ovules are drastically reduced because of the abnormal chromosome movement that occurs during fruiting.

Since fruit set and fruit growth in all watermelons (both seeded and seedless) are dependent upon pollination of the female flower, viable pollen is an absolute necessity for seedless watermelon production. Diploid (seeded) watermelon plants must be planted among the triploid (seedless) plants in order that bees have a viable source of pollen for the

seedless plants. Once bees carry viable pollen to the flowers of the seedless plants, fruits start forming from the base of the female flower. The ovules within these fruit are not viable, so true seeds do not form despite the presence of viable pollen.

When seedless watermelons are cut open at ripeness, small white vestigial seeds are often seen. These result from the inviable ovules and are easily chewed and swallowed as part of the flesh. Researchers have grown seedless watermelons at the University of Maryland for two years. All varieties were germinated in the greenhouse and transplanted to the field.

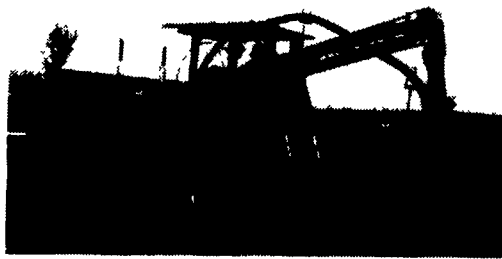
Poor germination has long been acknowledged as a problem with triploid watermelon seeds. Some seed companies recommend that soil or peat pots should be soaked thoroughly and drained 24 hours before planting, and that uniform high moisture and a 85 degree F. temperature should be maintained during the first 48 hours of germination. A fungicide should be used to treat seeds, and seed coats clamping around the emerging seedlings should be removed manually. Once about 10 percent of the seeds have germinated, the temperature should be lowered to 75 degrees F. Plants should be ready for transplanting to the field in three weeks and should not have more than three true leaves.

In addition to poor germination, Maryland researchers have observed some additional problems with seedless watermelons: hollow heart, poor internal color, and seediness. These defects ranged from nonexistent to severe, depending upon the variety and the season grown -- the presence of any of these defects detracted from the overall quality of the fruit.

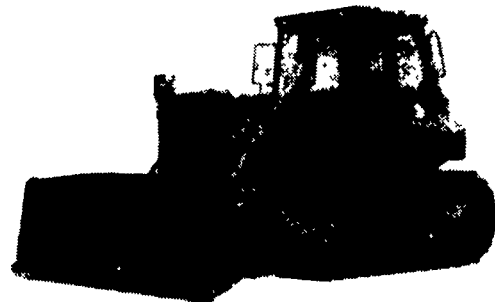
Seedless watermelons are still considered a novelty item in many areas, and production costs are high because of their special growth requirements. However, their profit potential is also high. The next few years should determine whether a consistent and profitable market for seedless watermelons will develop, and whether this market is separate from or competitive with seeded watermelons. Meanwhile, many vegetable seed companies (both foreign and domestic) are continuing their development efforts toward new varieties of seedless watermelons.

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