will float off the top with the pulp. Watermelon is one of the few wet-processed fruits that has some exceptions to the rule that good seed sinks to the bottom. There are a few varieties that have a high percentage of good quality, low-density seed that may float on the water surface. When washing seed of these cultivars it is easier to wash the seed by pouring the fermented mash onto a ¼" hardware cloth screen and spraying the surface of the screen with a water spray from a hose to force large pieces of mash through the screen. This leaves clean seed on the surface of the screen. Seed that is not well filled out is removed primarily by air-separation rather than washing. The air separation step is especially important for varieties that have low-density seed (seed that tends to float during the washing process).

Seed yield:

There are approximately 175 to 300 seeds per ounce, depending on the variety of watermelon. The Federal Germination Standard for commercial melon seed is 75%. An acre of watermelon plants will yield on average, 200 to 250 pounds of seed, which is equivalent to 4.6 to 5.7 pounds per 1000 square feet.

DISEASES AND DISEASE MANAGEMENT

Disease prevention and control strategies:

Many fungal diseases are encouraged by high humidity, use of overhead sprinklers (especially late in the day leaving moisture on leaves), poor sanitation and failure to remove crop residues, use of disease contaminated seed, failure to use a minimum three-year crop rotation, and improper soil pH. Crops should be located where the early morning sun can quickly evaporate the morning dew. Use of cereal crops in the rotation scheme gives significantly better control than rotation with non-cucurbit vegetable crops. By late summer/early fall, crop residues should be removed as soon as possible and composted. Seeding a winter cover crop helps to eliminate weeds and insects that harbor disease. Generally recommended cover crops are annual or winter rye. The latter does a better job of drying out the soil in the spring. Clover makes an excellent winter cover crop if started soon enough to get established, and can often be sown with a thin seeding of a buckwheat nurse crop that is later killed by frost. Finally, and perhaps foremost, be a good crop manager and scout frequently for signs of disease. Check with your organic certifier to determine what treatments are approved for control of fungal diseases.

Remember that the most successful strategy for dealing with disease is to use resistant varieties. The most progress has been made with cucumbers, where sources of resistance have been found for most of the major pathogens (Robinson and Decker-Walters, 1999). In the discussion of diseases below, specific open pollinated varieties with resistance to certain diseases have been cited. These recommendations come largely from Robinson and Decker-Walters (1999).

Grafting as a means of disease control:

Grafting susceptible scions onto resistant rootstock can be very effective, and has been practiced in Japan and Korea for over 50 years (Robinson and Decker-Walters, 1999). Vegetable grafting is also practiced in some Mediterranean and European countries.

In the late 1970's I was successful in grafting peppers onto tomatoes and vice versa. The experiment was conducted on 18 to 24" tall, potted plants growing indoors under a combination of natural and artificial light. Though the procedure was successful, the experiment was discontinued after about 6 to 8 weeks because it was too late in the season to set the large plants outside. Because the grafts were performed on medium-sized plants, rather than on seedlings, differences in growth habit between the tomato-pepper grafts might have caused structural problems later in the season. Nevertheless, the results were intriguing, especially because these were grafts of two different genera. It is worth repeating this experiment at different developmental stages (seedlings and mature plants), allowing the grafted plants to grow for a longer period of time.

Grafts involving two different cultivars of the same species can be useful for conferring insect and disease resistance. Some people are surprised to learn that vegetables can be grafted, but I found vegetable grafting easier than grafting fruit trees. The basic procedure that I used is fairly simple. A