

Postharvest Fruit Treatment

FDA regulations specify any food crop to which a nonexempt chemical is added after harvest must be so labeled. The container that goes to the retailer must contain words such as, "These peaches treated with (name of chemical) to prevent rotting."

Postharvest fungicide treatment is important in preventing fruit rot development during storage and in the marketing channel. Good postharvest treatments will insure the consumer of a highly desirable product.

HYDROCOOLER TREATMENT

Fruit in bulk bins should be hydrocooled as quickly as possible before placing in cold storage. The hydrocooler water should contain one of the chlorine-generating products at 100 ppm to kill spores and fungal mycelium on the fruit surface. This treatment will sterilize the fruit surface but provides no residual fungicide protection. A Supplement Label must be in hand to use these materials.

Material Rates for 100 PPM in 1000 gal

Agclor 310 (12.5%)	0.75 gal
Household bleach (5.25%)	1.8 gal
HTH Chlorine (65%)	1.33 lb

NOT MIX BOTRAN, OR ROVRAL WITH THESE MATERIALS.

PACKING LINE TREATMENT

During the packing operation, fruit should be sprayed with Rovral 50WP using 2 pounds per 100 gallons of solution, with or without wax. One hundred gallons of spray should treat 200,000 pounds of fruit. If growers possess Botran 75WP with a label for postharvest use, add 1/3-1/2 pound of Botran to the solution.

POSTHARVEST PEACH SKIN DISCOLORATION AND ITS CONTROL

Skin discoloration (also known as inking, ink spot, black spot, streak, or purple spot) is a disorder of peach which has been observed in New Jersey for more than 20 years. No disease-causing organism can be isolated from affected fruit. The initial symptoms are development of burgundy-colored areas within the red flesh of the peach. These areas eventually turn purplish-black or ink color.

Research conducted at Clemson University, University of California, and Rutgers University has shown that any operation which causes a peach to rub, roll, or physically abrade against another peach can result in discoloration.

Inking has also been triggered by iron (in excess of 10 PPM) in the hydrocooler and dumptank water, leachate from latex-rubber drying rollers, excessive brushing or vibration, ammonia, and fungicide sprays.

Research to date has resulted in these suggestions for control:

Avoid any operation that causes excessive vibration, rubbing, or rolling; reduce operations that cause bouncing from the orchard to the packing house.

Keep field bins, held outside the packing house prior to hydrocooling, in a shaded area out of sunlight.

Remove "field heat" as soon as possible. Fruit temperatures out of the field, can range from 75F to 95F. Remove field heat with a hydrocooler rather than attempting to remove it with a ventilated cold room.

Keep hydrocoolers and dumptanks as clean as possible. Excessive iron in treatment water can cause discoloration. Failure to clean hydro coolers and dumptanks properly can result in high levels of rust in the water, thus increasing discoloration. Drain and refill with fresh water on a regular basis.

Maintain the pH of water in hydrocoolers and dumptanks between 6.5 and 7.0. Water at a pH of 4.0 to 6.0 has caused problems with discoloration. Proper pH also reduces iron availability.

Check equipment for a loss of ammonia. Leaks in the refrigeration system can also stimulate inking. Peaches can be affected by ammonia at levels under 1 PPM--below levels that emit an odor.

RECOMMENDATIONS FOR WATER TREATMENT

1. Chlorine is preferred as a sanitizing agent in hydrocoolers and dumptanks. If the levels are maintained at 100-200 PPM of chlorine, good postharvest control will result. Chlorine levels of 120 PPM have shown excellent results in the reduction of Discoloration. There are many chlorinating systems available from various packing house equipment manufacturers.* They have:

a. Gaseous chloride systems that monitor chlorine levels and automatically dispense chlorine gas into the water.

b. Liquid sodium hypochloride systems that also monitor chlorine levels and automatically dispense liquid chlorine into the system.

c. Powdered sodium hypochlorite (Ag Clor 311*) for use as a chlorinating agent.

d. There is a supplemental label available from your County Agricultural Agent for the use of HTH swimming pool chlorine as an additional source of chlorine. It is important to remember that the

supplemental label must be in the grower's possession before use.

2. To keep iron insoluble, maintain the pH of the water between 6.5 and 7.0. If the water is acid, less than pH 6.0, then a buffer should be added to raise the pH to 6.5 to 7.0. Your County Agricultural Agent can provide specific recommendations based on the pH of your water.

3. Drain and refill the water in the hydrocooler and dumptank on a regular basis--daily, if possible. Be sure to remove all dirt, leaves, and other debris after draining.

*Sources of chlorinating chemicals and equipment may be obtained from your County Agricultural Agents.