NECTARINE QUALITY FOLLOWING A FORCED-AIR HEAT TREATMENT FOR FRUIT FLY DISINFESTATION

David Obenland, USDA-ARS, Horticultural Crops Research Lab, Fresno, CA 93727

Heat treatment is an effective and relatively rapid means of insect disinfestation and, although it can be damaging to some fresh commodities, may represent a viable alternative treatment to fumigation with methyl bromide. The response of each commodity to heat, however, must be carefully evaluated in order to ensure that market quality is not adversely affected by the treatment.

In the 1997 growing season 9 cultivars of California nectarines were evaluated for their tolerance to a forced-air heat treatment designed to disinfest fruit of Mediterranean fruit fly. This treatment consisted of heating fruit over a period of 4 hours or longer until the seed surface temperature had reached or exceeded a temperature of 47.2°C for at least 10 minutes. The fruit were then removed from the treatment chamber, stored at 1°C for 2 weeks, plus an additional 2 days at 23°C, after which the fruit were evaluated for quality characteristics.

In general, treated fruit showed few marked differences from the non-heated controls. Treated fruit sometimes had a slightly higher incidence of surface blemishes, although in those cultivars affected, the blemishes were relatively minor. Coloration of the skin was not altered, although in some cases the inner flesh was slightly browner in treated fruit than the controls. Panelists were unable to distinguish treated fruit from controls in regard to taste. No differences due to treatment were noted in soluble solids, or acidity. A noticeable change due to treatment, however, was a delay in softening.

Results from this study suggest that California nectarines are fairly tolerant of forced-air heat treatment and that this treatment could potentially be an alternative to fumigation with methyl bromide as a disinfestation treatment for Mediterranean fruit fly.