Title	Effect of high-pressure hot-water washing treatment on fruit quality, insects, and disease in apples and pears Part III. Use of silicone-based materials and mechanical methods to eliminate surface pests
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Abstract

Surface arthropods on pome fruits can cause export problems and disrupt commercial markets. Eliminating insects and mites on the packing line would be the last opportunity to provide for pest-free produce. In this study, an experimental packing line was used to evaluate techniques using different surfactant baths, pressurized water sprays, and styles of rotating brushes to remove field-collected and laboratory-reared grape mealybug, *Pseudococcus maritimus* (Ehrhorn) (Homoptera: Pseudococcidae), the diapausing two-spotted spider mite, *Tetranychus urticae* Koch (Acari: Tetranychidae) and the woolly apple aphid, *Eriosoma lanigerum* (Hausman) (Homoptera: Aphididae). The organosilicone Silwet L-77 was no more effective than a silicone-based food grade defoamer in aiding removal. Mechanical methods, such as the style of rotating brushes and pressurized sprays, were significantly effective in removing surface arthropods. No improvement in removal occurred when pressure was increased beyond 420 kPa. These techniques can be easily adapted to commercial facilities and will reduce the incidence of surface arthropods on marketed fresh fruits.