MARKET QUALITY IN DISINFESTED FLOWERS, FOLIAGE AND PROPAGATIVE MATERIAL

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Hot- air and water can be effectively used to disinfest flowers, foliage, and propagative materials of insects (ants, aphids, mealybugs, scales, whiteflies, thrips) with no effects and positive effects on vase life and propagative quality of many plant species. Hot water treatment at 49°C (120°F) for 10 to 12 min improved the postharvest quality of certain cut flowers and foliage by extending vase life, preventing bract abscission and reducing geotropism. The vase life and quality of most species of Heliconia were not affected or positively affected by hot water; Dracaena, Cordyline and palm foliage were also not affect or positively affected by at hot water at 49°C for 12 min. Immersion of red ginger flowers (Alpinia purpurata) in 6-benzylamino purine (BAP) after hot water treatment further extended the vase life. Propagative cuttings including Anthurium, Cordyline, Dracaena, Gardenia, and Plumeria, immersed in hot water at 49°C for 10 min followed by indole-3-butyric acid (IBA) basal treatment stimulated rooting and shoot production in 78% and 80% plant species tested, respectively.

Certain cut flowers were more susceptible to heat injury during cool, rainy seasons. Conditioning flowers in hot air at 39-40°C for 2-4 h before hot water treatment eliminated seasonal phytotoxicity, but increased mealybug survivorship. Probably, heat shock proteins in flowers, foliage and mealybugs were produced by conditioning in hot air; these induced heat tolerance. Commercials shippers in Hawaii have adopted the hot- air and water treatments for producing pest-free, high quality flowers for export.