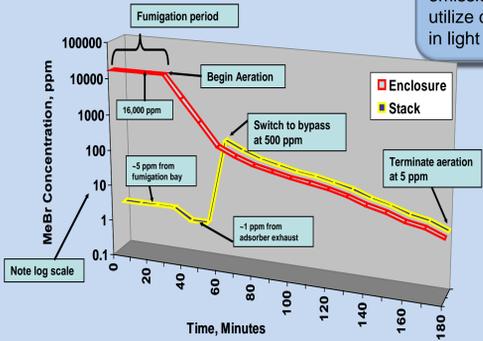




New Chemically Based Methods Which Reduce the Use Or Emissions of Chemicals As Alternatives to Methyl Bromide for Quarantine and Postharvest Pests



QPS Fumigations
Fumigations are developed to control quarantine and invasive insect pests of grapes and are often demanded by domestic and/or international regulation to guarantee pest-free security.



Low-Emission Fumigations
Eliminating, or reducing, atmospheric emissions allows the grape industry to utilize chamber fumigations for pest control in light of increasing air quality regulation.

These two projects in the Commodity Protection and Quality Research Unit in Parlier, California seek to maintain foreign and domestic markets for fresh and dried fruits and tree nuts while reducing or eliminating environmentally harmful pesticides and their residues. Of particular importance is the development of phytosanitary treatments for insect pests that may otherwise pose a barrier to trade.

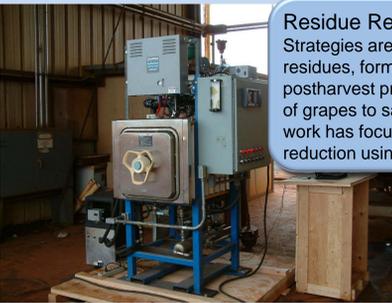
Vacuum Treatments
Application of low pressures, or vacuum treatments, in low cost, flexible PVC containers to disinfest product of postharvest insects shows promise for tree nuts, and may also be adapted for use with stored raisins.



TRADE BARRIERS



Residue Remediation
Strategies are developed to remove residues, formed during production and postharvest processing, from the surface of grapes to satisfy MRL limits. Recent work has focused on fungicide residue reduction using ozone-based fumigations.



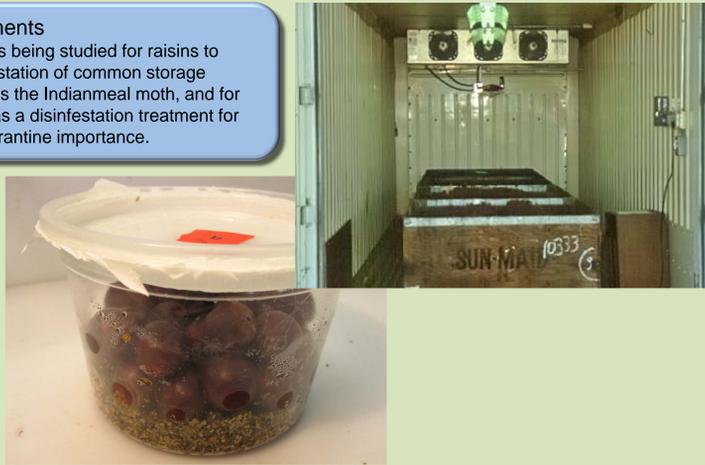
Chemical Dips, Dunks, & Sprays
Insecticide and fungicide applications are developed to preserve grape quality, which can be impacted by infestation and/or the spread of pathogens.



Systems-Based Treatments
This approach looks at the cumulative efficacy of postharvest processing elements on pest removal.



Cold Treatments
Cold storage is being studied for raisins to prevent reinfestation of common storage insects such as the Indianmeal moth, and for fresh grapes as a disinfestation treatment for insects of quarantine importance.



Radio Frequency Heat Treatments
RF treatments heat product to insecticidal levels much quicker than conventional heat treatments, resulting in short treatment times while maintaining good product quality.



Biological, Behavioral, and Physical Control as Alternatives for Stored Product and Quarantine Pests of Fresh/Dried Fruits and Nuts

