CATTS: An Industry Perspective

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The California stone fruit industry first became aware of the Controlled Atmosphere/High Temperature Forced Air (CATTS) treatment as a possible methyl bromide alternative in 2000. This potential quarantine treatment could be a replacement for mandatory fumigations for exports to Mexico, Japan, British Columbia and other destinations. It also could be a less intrusive treatment compared to cold treatments and irradiation. In 2001 the industry funded USDA-ARS' initial project to research CATTS treatment effects on peaches and nectarines, with a focus on post-treatment fruit quality and mortality of Oriental fruit moth. The results were very promising. During 2002-2003 the project continued with additional varieties being submitted for quality testing and expanded insect mortality analysis.

In 2004 the project included sensory evaluations, testing of palletized boxes for uniform heating and expanded insect mortality testing. Preliminary results of the sensory testing were slightly lower for treated fruit compared to untreated fruit, but detections by the panelists were fairly subtle. It was concluded that differences of this magnitude, although noticeable to someone trained and skilled in food science, would likely not be noticeable to the average consumer. Also in 2004 a commercial chamber was used for some of the tests. The results showed the treatment achieved quarantine security against codling moth and Oriental fruit moth, but the variety of peaches used in the tests suffered quality problems from excessive heat. Industry concluded the box design for heat flow/ventilation should be reviewed and a new prototype chamber unit is needed that can ensure uniform and controlled heating.

In 2005 the project continued testing with a full pallet of fruit. Again the results were disappointing due to another problem with uniform heating, this time requiring 5-6 hours to obtain the specific temperature needed. Fruit heated in excess of 3-4 hours were found to have surface injury and turned mealy. Industry applied for and was awarded a Technical Assistance for Specialty Crops (TASC) grant from the Foreign Agriculture Service (FAS) to build a small prototype chamber. In 2006, due to a budget shortfall and a delay in the construction of the new chamber until fall, the industry withdrew direct funding for the project and opted to obtain grant funding for the project. That award came in August, 2006, which also included funds for the CATTS symposium.

As the 2006 season comes to conclusion, a seasonal review is required to determine the following:
1) Status of the construction of the small commercial type chamber;
2) Status of the 2006 project due to the late funding situation; and
3) APHIS involvement for development of potential protocols for those countries currently requiring MB fumigation.

Moving into 2007, the project needs to finalize box design and overcome heating issues. Final insect testing should be based on the target export market's work plan, such as Japan, which would be one insect of concern (codling moth) for one specific commodity (nectarines), or Mexico. Upon completion of the work plan-specific testing, an invitation to the targeted market's quarantine agency scientists would be issued for observation of potential protocol testing. APHIS support for this project will be critical in order to carry it into a protocol development phase. From 2008 to 2010 efficacy testing needs to be demonstrated and country-

to-country discussions/negotiations would be lead by APHIS, in collaboration with industry and regulatory partners. First shipments via the new protocol could happen as early as 2009 or 2010. After that, additional countries need to be targeted based on their quarantine pest list.