

**PPQ Deputy Administrator's Outstanding Achievement Award
Submission Form**

Name, Address, Job Title and Organization, and Phone Number of Nominee

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Brief Narrative of the Achievement

During November 2005, Treatment Quality Assurance Unit (TQAU) personnel (Wood) conducted a methyl bromide treatment review of grape fumigations in Chile targeting *Bervipalpus chilensis* (Chilean false red mite). Questions raised with International Services personnel (Luis Fuentes) at that time was whether mealybugs (Pseudococcidae) might survive in grape exports to the United States after being fumigated at Ports of Entry for *B. chilensis* at the schedule rate of 4 pounds for 2 hours at 40-49 F (T 101-j-2-1). The mealybug issue was of concern because the treatment targeting it (T 104-a-2) requires a higher minimum temperature (60-69 F) than does the mite schedule. Further, TQAU had earlier performed a data literature review and determined that the original treatment schedule for *B. chilensis* was based on a small scale efficacy trial using only ten red mites at a minimum temperature of 48-50 F. Although the data were minimal, the treatment had been used successfully for more than 40 years. Thus, based on discussions with IS, the minimal treatment and the requirement for higher temperatures for mealybug treatment efficacy compared with that of the mite, TQAU decided to conduct a quality assurance review

The quality assurance review was conducted In January, 2005 by TQAU in the Port of Wilmington, Delaware working closely with Plant Protection Quarantine (PPQ) (Kitzmiller, Moore, Johnston) to validate and certify quarantine efficacy of the methyl bromide fumigation treatment in traditional temporary enclosures at the lower treatment temperature (T 101-j-2-1). Post fumigation inspections were performed by PPQ (Moore, Johnston) to confirm that the target pests were being adequately controlled.

Surprisingly, the results of these inspections indicated that *B. chilensis* survived the methyl bromide fumigations. The few mealybugs found were dead. Normally, such obvious failure of a quarantine treatment would have resulted in an immediate closure of the U.S. import market for Chilean grapes. However, realizing the potentially devastating effects market closure would have had on the economies of both countries, TQAU quickly mobilized CPHST capabilities to conduct impromptu fumigation trials at the ports of entry in an effort to develop an emergency treatment schedule under which Chilean imports might continue. The trials resulted in short delays for several days while sampling and fumigation testing (Barak, Myers, and Wood) were being conducted. Within the ports of Philadelphia, PA, Long Beach, CA, and Wilmington, DE, eight pallets of grapes were provided by the receivers and owners of the product and methyl bromide fumigations were conducted (Farmer, Wood, Moore) on these at increased exposure times and temperatures to determine a specific combination that might provide quarantine security. The trial fumigations continued during offloading of two vessels until an effective modification was developed. Results of the trials demonstrated an effective emergency treatment of 3 hours exposure instead of the normal 2 hour exposure. In Chile, similar testing (Fuentes, Cohen) using certified chambers demonstrated an appropriate treatment of 2.5 hours (for chamber fumigations). Post treatment sampling and inspections were done on all United States (Salantri, Maller, Johnston) and Chilean treatments 48 hours post fumigation to guarantee quarantine security.

The quality assurance finding of live actionable pests post treatment, the substantial modification to the treatment, and the long-standing but unresolved concerns about methyl bromide sorption and penetration into and through packing materials pointed out the need to develop a permanent methyl bromide treatment that all concerned parties could embrace. Thus, the USDA (Zettler), the Association of Chilean Exporters (ASOEX) and Fundacion para el Desarrollo Fruticola (FDF) worked collaboratively to design four research studies to be conducted in Santiago, Chile and to be financed by ASOEX.

Did the achievement go beyond the scope of daily duties?

This unique initiative was the first time PPQ examined methyl bromide-fumigated commodity post treatment to verify quarantine effectiveness of the treatment. Specifically, the finding demonstrated that the approved treatment did not provide quarantine security to the target pest. This accomplishment exceeded the original intent of the objective which was to determine if imported grapes contain live mealybugs post fumigation and if the treatment used for mites is adequate to control mealybugs. The impromptu research and quick, unified USDA response allowed the Chileans and U.S. fumigators and receivers to continue movement of imports valued at more than 500 million dollars annually. Further, this was accomplished with only short (54 hours maximum) and temporary delays. The logistics of developing the emergency treatments while continuing trade facilitation and stakeholder communication was directly dependent upon transparency and established lines of communication between PPQ field, (Kitzmilller, Farmer and Kaae) Eastern Region (Holman), HQ (Thomas and Sosa), CPHST HQ and laboratories, and International Services (Cohen).

Industry and government to government meetings, organized through PPQ HQ (Thomas, Sosa), were held in both Philadelphia, PA and Riverdale, MD to discuss the logistics of the newly developed treatment and sampling protocols and to receive feedback regarding these emergency protocols. The meetings included the Chilean Sanidad Vegetal (SAG), the Chilean Export Association (ASOEX), U.S. receivers, shippers, brokers and the four U.S. fumigation companies.

The cost incurred by APHIS was limited to travel costs to and from the ports. All cooperative research planned by USDA, ASOEX, and the laboratory of Fundacion para el Desarrollo Fruticola (FDF) will be funded by ASOEX. Developing the methyl bromide sorption and penetration components in the research protocol exceeded original expectations because, although these variables had been discussed as unknown entities impacting the fumigation treatment, testing was not planned until live mites were identified post treatment on the grapes. This achievement emphasized the need for unified quality assurance reviews of all treatments because packing materials, sorption, commodity densities, varying accepted industry practices and a myriad of other variables continue to change and slowly erode the initial buffer (margin of error) built into each treatment.

Did the achievement demonstrate a successful outcome? Did the achievement have a significant impact?

Rather than closing the import market to Chilean fruit, the rapid development of the emergency treatment demonstrated that movement of imports, with little or no interruption, could continue to the local markets for consumption. The impact of this event was significant. For example, Chile exports over 45,000,000 cases of grapes to the United States every year. The wholesale value of these grapes is \$15.00 per case. Ten of the fifteen dollars are returned to Chile to cover the cost of the product, its packaging and shipping, etc. This equates to a value to the Chilean economy of \$450,000,000. The other five of the fifteen dollars go to the United States for similar associated costs of unloading, fumigations and logistics of transportation to the local retail outlet. This equates to \$225,000,000 dollars for the domestic economy. Thus, developing an alternative to market closure saved Chile and the United States approximately \$675,000,000 in direct costs alone.

How did the achievement relate to the mission?

Development of the fumigation treatments protected the U.S. grape and citrus industries from a potentially devastating quarantine actionable pest not currently established in the United States. The flow of Chilean import trade and the effects to receivers, buyers and consumers were minimally hindered (54 hours maximum) during development of the treatments. The largest benefit was that the treatments allowed domestic grape and citrus orchards to remain free of this actionable pest, a fact that will continue to foster and support export trade to other countries. Also, development of these treatments contributes to the preservation of the global environment while meeting numerous safeguarding elements including the following: D-30, D-25, D-33 and I-42. Finally, communication was paramount to this achievement. APHIS personnel from Western Region, Eastern Region, HQ, CPHST and International Services quickly mobilized and worked together

as a team to facilitate trade while developing a quarantine treatment that protects American agriculture.