

Jet Ag[®] Fogging Test

Jan Narciso, Ph.D.
Research Microbiologist
USDA/ARS/USHRL/CSPRU
2001 S. Rock Road
Fort Pierce, FL 34945
Office: (772) 462-5848
Cell: (772) 801-1155
jan.narciso@ars.usda.gov

Jet Ag[®] (Jet Harvest Solutions Longwood, FL)(26.5 Hydrogen Peroxide, 4.9% Peroxyacetic acid) can be applied via fogging at low concentrations of 3.5 fluid ounces of Jet Ag into humidified air per 1000 cubic feet of room volume to control the growth of non-public health microorganisms that may cause decay and/or spoilage on raw post-harvest fruits and vegetables during the post-harvest process. Using liquid peracetic acid solution to control decay and preserve fruit and vegetables has been well documented. Our goal was to extend the shelf life of fruits and vegetables by fogging the peracetic acid into a storage facility. The need to fog peracetic acid is necessary for several reasons. First, when there is no post-harvest process, second, when the fruit begins to decay during storage and thirdly when there is a need to reduce decay and/or spoilage organisms in the storage systems while fruit it continues to be in the storage system, i.e. large warehouse storage facilities.

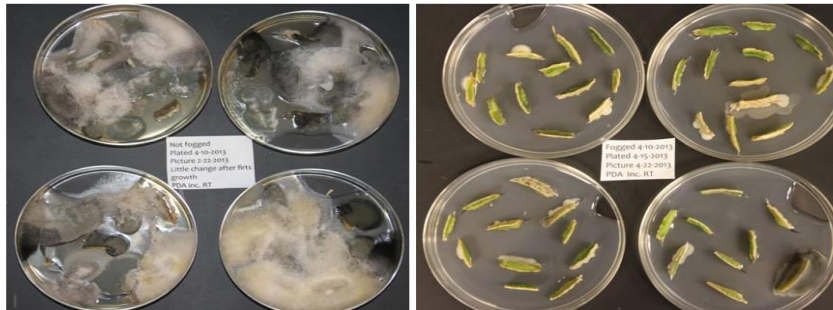
The following was a demonstration by the USDA, Ft. Pierce, FL to fog Jet Ag into secure fruit and vegetable storage system. Several boxes of naturally inoculated cantaloupe melons and tomatoes were placed into a cold storage room. The room was securely closed except for the fogging application unit. The Jet Ag[®] was applied into the storage facility over a four hour period. The Jet Ag[®] was allowed to circulate for 2 hours after the application and then the storage system was properly aired to ensure there is no odor characteristic of vinegar.

The results show a remarkable difference in treated and untreated in both the tomato and cantaloupe test. The pictures show the growth on the microorganism on the peel of the cantaloupe before and after the 4 hour treatment. The tomato test shows the untreated left for 5 days at 10C and the treated left for 5 days at 14C. The untreated tomatoes were soft and had white mold growing on the surface.

Jet Ag[®] has many qualities that make it an excellent material to control the growth of fungal and bacterial microorganisms. The Jet Ag[®] was effective at cold storage temperatures. Applying the Jet Ag[®] in a storage systems via fogging allows the produce company the versatility of managing their produce inventory.



Tomatoes before treatment (upper left) and at 10 C w/out fog for 5 days (lower left) and after fogging with PAA for 4 h, left 5 days at 14 C (lower right)



Growth of microflora on cantaloupe peel from fruit not fogged (left) and fruit fogged with PAA 4 h (right)