



Client:

Grow Green Industries
27141 Aliso Creek Road, Ste 235
Aliso Viejo, CA 92656

Project Description: Testing the Efficacy of eatCleaner Fruit + Vegetable Wash Spray and Powder in removing pesticide residue from strawberries

Experimental summary:

The removal efficiency of the fungicide carbendazim (CASRN 10605-21-7) and neonicotinoid imidacloprid (CASRN 138261-41-3) using EatCleaner Fruit and Vegetable wash was determined by QuEChERS and LC-MS/MS.

Experimental details:

Commercially available organic strawberries provided by the laboratory were spiked on the surface with 1 µL each of a methanolic solution containing 1000 mg/L of carbendazim (P-278S) and imidacloprid (P-596S) and the residual methanol was allowed to evaporate (approximately one minute), mimicking field application of these pesticides. Washing procedures after pesticide application were as follows:

Control: No washing. This was used as a control to determine pesticide loading.

Set 1: 30 second soak with deionized water, followed by another 30 second rinse with deionized water. This was the water rinse control.

Set 2: 30 second soak with solution prepared from EatCleaner Fruit and Vegetable Wash powder, followed by a 30 second rinse with deionized water.

Set 3: 30 second spray/soak with EatCleaner Fruit and Vegetable Spray, followed by a 30 second rinse with deionized water.

After washing, the strawberries were homogenized and the entire fruits were extracted using the AOAC quechers procedure. After cleanup, the extracts were analyzed by LC-MS/MS, comparing the recoveries of each experimental set of data (Sets 1, 2, and 3) against the control (unwashed) extracts.

Results:

All results were compared against the control strawberries with no washing for each extraction, n=3 for each sample set.

Sample group	Carbendazim loading (ng)	Carbendazim removal	Imidacloprid loading (ng)	Imidacloprid removal
Control	1000	0%	1000	0%
Set 1	1000	22%	1000	46%
Set 2	1000	95%	1000	98%
Set 3	1000	97%	1000	98%

Conclusion:

From the experimental data, both the EatCleaner Fruit and Vegetable Wash and Spray are greater than 95% effective at removing surface-applied imidacloprid and carbendazim from strawberries. Furthermore, both EatCleaner products are more effective at removing imidacloprid and carbendazim from strawberries than water alone.

Brandon Gee; Senior Project Manager
Weck Laboratories Inc.