

Standard Operating Procedure

FARM NAME _____

Doc.No. **2.69**

Title: **Policy for Washing Winter Squash Using Sanidate 5.0***

Effective Date: _____

Reviewed by: _____ GAP Coordinator, Date: _____

The use of hydrogen peroxide/ peroxyacetic acid (Sanidate) has been incorporated into postharvest washing of fruits and vegetables as an alternative to chlorine. This material has proven to sanitize while extending the holding capacity/shelf life of winter squash and pie pumpkins as well as other vegetables. The procedure is as follows:

1. After a curing period in the field (see SOP 2.62) harvested squash should be first washed(dipped) and scrubbed with potable water to remove any soil or debris from the field. Produce should then be sprayed with potable water to remove any remaining film and reduce turbidity of the sanitizing tank mixture.
2. The produce should then be dipped into a pre-cleaned water vat, tank or container that has been prepared with potable water plus Sanidate 5.0 to make the desired concentration. *(For example, Squash requires a 24-30 ppm PAA concentration. This is equal to .325 oz. or 1.95 tsp/5 gal of water. **Note:** Since winter squash is hard shelled like pumpkin, use the 40-60 ppm recommendation for winter squash. This is equal to .72 oz. or 4.35 tsp/5 gal of water.)*
3. Soak in the mixture for 30-45 seconds. When produce comes out, allow to drain and dry before packing (A fan may help to speed the process.) There is no need to rinse.
4. Use test strips to test for PAA concentration of the tank mix. PAA will not dissipate as fast as chlorine so concentration should remain constant even when organic material is introduced unless the solution becomes turbid.
5. Used dip tank water using Sanidate may be disposed in any suitable drain/septic system or dry sink/gravel catch. Do not dispose into or close to open source water such as streams or ponds.
6. Follow all label instructions for personal protective equipment.

1 Sanidate 5.0 Specimen Label, Biosafe Systems

2 Hadad, Robert, Extension Vegetable Specialist, Cornell Vegetable Program, and Cordelia Hall, Cornell University Cooperative Extension, "Farm Food Safety: Standard Operating Procedure for Washing Produce with a Peracetic Acid Solution," February, 2015.

Fresh Market / Raw Vegetables (Stor0x 2.0, SaniDate 5.0, SaniDate 12.0, and SaniDateFD)^{AA*}

VEGETABLES	PAA Concentration by Treatment Method (PPM)		
	Dump, Drench, Flotation Tanks, Flumes, or Hydrocoolers	Wash Spray Bar	Fog
Artichoke	40-60	60-80	80-200
Asparagus	40-60	60-80	80-200
Broccoli	40-60	60-80	80-200
Brussel Sprouts	40-60	60-80	80-200
Cabbage	40-60	60-80	80-200
Cauliflower	40-60	60-80	80-200
Carrots	24-40	60-80	60-80
Colery	24-40	40-60	40-60
Sweet Corn	24-40	60-80	60-80
Cucumbers	40-50	60-80	60-80
Garlic	40-50	50-60	50-60
Garden Herbs	40-60	60-80	80-200
Lettuce (All Types)	40-60	60-80	70-80
Leafy Greens	40-60	70-80	80-200
Melons (All Types)	40-60	60-80	80-200
Mushrooms	24-30	30-40	30-40
Onions (Green)	40-60	60-80	80-200
Peas	40-60	60-80	80-200
Peppers (All Types)	40-60	60-80	80-200
Potatoes (All Types)	85	100-200	100-200
Pumpkins	40-60	60-80	60-80
Radishes	24-40	40-50	40-50
Spinach	85	80-100	80-200
Sweet Potatoes	85	100-200	100-200
Squash (All Types)	24-30	30-40	30-40
Tomatoes	50-60	60-80	80-200
Turnips	40-60	60-80	80-200
Yams	85	100-200	100-200

Biosafe Systems, Produce Specific Rates and Usage

$$\text{Volume of sanitizer needed} = \frac{60 \text{ ppm PAA} \times 5 \text{ gal wash water}}{5.3\% \text{ PAA in sanitizer} \times 10,000}$$

$$\text{Volume of sanitizer needed} = \frac{300 \text{ ppm} \cdot \text{gals}}{53000 \text{ ppm}} = 0.0057 \text{ gals}$$

Now convert the amount of sanitizing product needed to teaspoons

$$\text{Volume of sanitizer needed} = 0.0057 \text{ gals} \times \frac{768 \text{ tsp}}{1 \text{ gal}} = 4.35 \text{ tsp}$$

*Cornell Cooperative Extension