



Everywhere It Matters.™



TSUNAMI™ REDUCES  
**99.9%**  
**OF DANGEROUS  
PATHOGENS**  
IN FRUIT AND VEGETABLE  
PROCESSING WATERS

**TSUNAMI: Oxidizing Agent Program**  
**THE QUICKEST ROUTE**  
**TO THE CLEANEST PRODUCE**



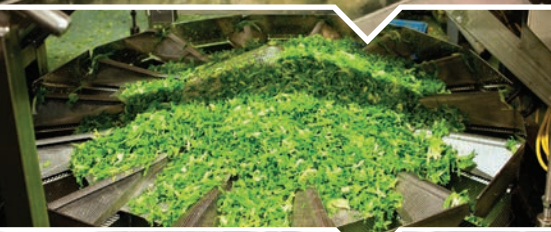


# In the produce business, FOOD SAFETY is your first priority.

Tsunami™ 100 is the only EPA-registered antimicrobial water additive product on the market that dramatically reduces pathogens in process water.

\*EPA registration #1677-164

Tsunami reduces  
**99.9%**  
of Escherichia coli O157:H7;  
Listeria monocytogenes  
& Salmonella enterica  
in fruit and vegetable processing waters



## SPECIALIZED PRODUCT – BROAD APPLICATIONS

Tsunami products are specially formulated for the flume systems in fruit and vegetable processing plants, providing kill of a variety of species.

- **Completely soluble** in water – helps eliminate potential off-gassing in heavily soiled systems
- Effective across a **broad pH range** – no need to acidify
- **Taste neutral** – will not impart any odor, taste or discoloration to end products
- **Environmental implications** – will not place extra demands on wastewater systems (e.g. pH excursions and effluent concerns related to chlorine byproducts)

**FRESH CUT  
GREENS SHELF  
LIFE EXTENSION**

with TSUNAMI 100:

collard  
& kale

**7-8  
additional days**

mustard  
& turnip

**1-2  
additional days**



# Solution Stories

Tsunami is an easy-to-use, cost-effective solution designed to help maximize operational efficiencies and improve product quality.

## 1. IMPROVED AIR QUALITY DUE TO INSOLUBILITY IN FLUME WATER

Improved the overall air quality at a Western food processor by entirely eliminating the threat of off-gassing and odor concerns.

## 2. CONSISTENT DOSAGE FOR MICROBIAL CONTROL

Tsunami has low reactivity with organics and soils in the wash water, maintaining a consistent dosage for microbial control.

Percent Total Available Chlorine or Peracetic Acid Remaining in Water 10 Minutes After Adding 10% (wt.) Cut Vegetable

Vegetable	Total Available Chlorine Remaining	Peracetic Acid Remaining
Cauliflower	75%	93%
Onion	27%	88%
Potato	37%	94%
Carrot	70%	100%
Lettuce	70%	96%
Green Pepper	65%	93%
Celery	75%	93%
Broccoli	70%	93%
Cabbage	70%	87%

## 3. IMPROVED PRODUCT QUALITY

Thanks to Tsunami™ 200, a food processor drastically reduced yeast, mold, coliform and total plate counts, resulting in significantly improved finished quality of its further processed potatoes.

## A SIMPLE, COST-EFFECTIVE SOLUTION

- Tsunami has low reactivity with organics and soils in wash water, maintaining a consistent dosage for microbial control
- Tsunami is ready to feed directly from the shipping container – no pH control, precursor chemicals or on-site generation equipment necessary

## IMPROVED OPERATIONAL EFFICIENCIES



PRODUCTIVITY

**Reduced labor** and water usage due to a cleaner flume



PRODUCT QUALITY

**Improved product quality;** less spoilage and rejected product



WASTE

**Reduced use of ancillary chemicals** (e.g. acid, defoamer, waste treatment additives)



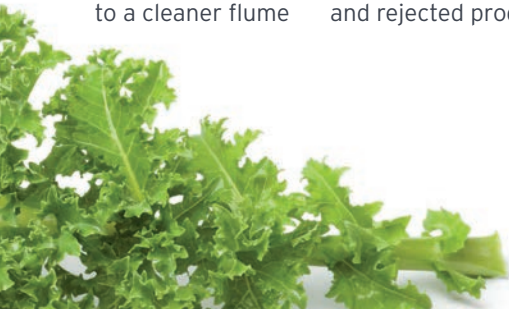
## SEAMLESS OPERATIONS:

# The Tsunami Control System

The Tsunami Control System is designed to monitor and consistently control Tsunami 100 in wash water systems.

### Features and benefits include:

- Proportional control for tighter process control
- Set point or range of control
- 4-20 mA output for data recording
- General alarm relay output
- Flow switch included with alarm and shut down under "loss of flow" condition





Improve product quality, drive efficiencies and reduce water usage when you implement the Tsunami program.



# Raise the food safety bar with Tsunami



## Product Overview

### Tsunami 100:

- Reduces the pathogenic and spoilage microorganisms in flume and wash water systems
- May be applied in all major **transport, storage and washing operations**, flumes, chillers/coolers and wash vessels
- Is the **only EPA-registered antimicrobial water additive product** on the market that reduces pathogens in process water

### Tsunami 200 (antimicrobial food additive):

- **Reduces spoilage** organisms including yeast, mold and bacteria on processed fruit and vegetable surfaces, and also reduces significant numbers of pathogenic bacteria on processed fruit and vegetable surfaces
- May be used in a variety of further-processed fruit and vegetable applications
- **Significantly reduces pathogenic and spoilage microorganisms** on processed fruit and vegetable surfaces, including those that can occur via cross contamination

Note: Tsunami 100 and 200 are not for use as hard food contact surface sanitizers.

TO LEARN MORE VISIT OR CALL:  
[WWW.ECOLAB.COM](http://WWW.ECOLAB.COM) 1.800.392.3392