

# Water Saving in Industrial Plants

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(Highlights taken from [www.spray.com](http://www.spray.com))

## **Nozzle Wear - a Leading Cause of Water Waste**

- One often undetected source of water waste is nozzle wear
- Some processors elect to change out spray nozzles annually.
- Annual cost of water savings can be equivalent to 50 - 70 %.

## **Evaluate Nozzle Type and Material**

- You may find that changing nozzle type or nozzle material may minimize waste and wear especially if spraying solutions with abrasives or sugar slurries.
- For aluminum abrasion resistance ratio is 1
- Hardened stainless steel resistance ratio is 10-15. Nozzle material must be selected carefully.

## **Explore Reducing Spray Pressure**

- Although it is not always possible, decreasing pressure, which will slow the liquid velocity through the orifice, may help reduce the orifice wear/corrosion rate. Reducing pressure and flow can also help reduce moisture in the air that can contribute to bacteria growth and/or distribution.

## **Add Line Strainers or Change to nozzles with Built-In Strainers**

- In many applications, orifice deterioration and clogging are caused by solid dirt particles in the sprayed liquid. This is particularly common in systems using continuous spray water recirculation. Strainers, or nozzles with built-in strainers, can trap larger particles and prevent debris from entering the nozzle orifice or vane to significantly reduce wear. In higher flow applications, automatic self-cleaning strainers with large filter areas capture most contaminants and flush them away without interrupting the process using minimal water.

## **Consider Automation**

- Most food processors have tanks, vats and vessels to clean. Often, these are cleaned manually by workers equipped with hoses. Tanks are also often cleaned by filling them with a cleaning solution, draining and then refilling for rinsing. Depending on the tank size, these cleaning methods can use hundreds of gallons (liters) of water every time the tank is cleaned.

## **Automated tank cleaning offers many benefits:**

- Faster cleaning
- More thorough cleaning
- Reduced use of costly chemicals
- Reduced disposal costs
- Improved worker safety
- Reduced labor costs and maintenance downtime