

FOOD PROCESSING INDUSTRIES

WATER USE EFFICIENCY IDEAS



GENERAL SUGGESTIONS

Ask your local water agency about rebates or financial incentives for water use efficiency.

Appoint a water conservation coordinator with the responsibility and authority for a water use efficiency program.

Make the plant manager and other employees aware of the water conservation coordinator's duties.

Conduct contests for employees (posters, slogans, or efficiency ideas).

Install submeters and read water meters regularly (daily, weekly) to monitor success of water use efficiency efforts and to help detect leaks.

Make it way for employees to report leaks.

SURVEY THE PLANT

A plant survey helps to identify areas where water is wasted or where water could be reused.

Identify all points where water is used, including hose connections, and determine the quantity of water used at each point.

Determine the capacity of each water-containing unit (washers, flumes) and frequency of emptying.

Identify major water lines and determine the quality, quantity, and temperature of water in each.

Determine the quality of each continuous discharge not yet being re-used.

Determine flow rates in floor gutters and whether the flows are adequate to prevent solids accumulation.

Review the information developed during the survey to identify the major water-using operations and review the water re-use practices.

Develop plans to improve re-use. Evaluate the feasibility of installing cooling towers. Study the potential for screening and disinfecting reclaimed water to increase the number of times it can be re-used

MAXIMIZE WATER USE

Install high-pressure, low-volume nozzles on spray washers.

Use fogging nozzles to cool product. Inspect nozzles regularly for clogging.

Adjust pump cooling and flushing water to the required minimum.

Determine whether discharges from any operation can be re-used in other operations.

Use conveying systems that use water efficiently, such as:

- handling waste materials in a dry state
- using conveyor belts for product transport - preference should be given to those that are easy to clean
- using pneumatic conveying systems wherever possible; and use flumes with parabolic cross sections rather than flat-bottom troughs.

Establish optimum depth of product on conveyors to maximize wash water efficiency.

Replace water-intensive units with alternatives.

Divide the spray wash units into two or more sections and establish a counter flow re-use system.

Use discharge water for flushing floor gutters.

Replace high-volume hoses with high-pressure, low-volume cleaning systems.

As equipment wears out, replace with water-saving models.

Handle waste materials in a dry state when possible.

AVOID WASTE

Equip all hoses with spring-loaded shutoff nozzles. Be sure these nozzles are not removed.

Tell employees to use hoses sparingly and only when necessary.

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Adjust flows from recirculation systems by controlling the rate of makeup water. You can:

- Install automatic valve on the makeup line.
- Close filling line during operation.
- Provide surge tanks for each system to avoid overflow.

Turn off all flows during plant shutdowns (unless flows are essential for cleanup). Use solenoid valves to stop the flow of water when production stops. The valves could be activated by tying them into drive motor controls.

CLEANUP PROCEDURES

Sweep or shovel solid materials from the floor instead of using hoses.

Provide enough receptacles for collecting solids. Empty the receptacles frequently to prevent odor and insect problems.

Inventory all cleaning equipment (such as hoses) in the plant:

- number and types of units provided
- frequency of operation

Make sure cleaning chemicals are being used correctly.

Control belt sprays with a timer to allow for intermittent disinfection.

EXTERIOR

Don't use water to clean sidewalks, driveways, loading docks, and parking lots. Consider using mobile sweepers.

Wash cars, buses, and trucks less often.

Avoid fertilizing and pruning that would stimulate excessive growth.

Remove weeds and unhealthy plants so remaining plants can benefit from the water saved.

Adopt a water budget irrigation schedule. In many cases, older, estab-

lished plants require only infrequent irrigation.

Limit landscaping additions and alterations. In the future, design landscapes requiring less water.

Install soil moisture overrides or timers on sprinklers.

Time watering to occur in the early morning or evening when evaporation is lowest.

Make sure irrigation equipment applies water uniformly.

Mulch around plants to reduce evaporation and discourage weeds.

Remove thatch and aerate turf to encourage movement of water to the root zone.

Begin a flexible watering schedule, watering only when needed.

Avoid runoff and make sure sprinklers water just the lawn or garden, not sidewalks, driveways, or gutters.

Do not water on windy or rainy days.

Water in winter only during prolonged hot and dry periods (during spring and fall, most plants need about half the amount of water that they need during the summer).

FOR FURTHER INFORMATION

And to request this brochure in an alternate format, contact:

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