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The Conservation Balancing Act: Part IV. In the Kitchen[1]

Virginia Peart[2]

The Situation

Conservation is everybody's business. The big questions are: When? How much? What do I have to give up? The answer may be to get into **The Conservation Balancing Act.**

The kitchen is a place for food preparation. The role of sanitation is important here. Raw foods, especially meats contain microorganisms that can produce toxic substances. Dirt and sometimes chemicals used in the production of fruit and vegetables should be washed off. Food poisoning is possible when foods become contaminated.

Cleanliness is essential in the kitchen. This means special care in refrigerating foods and for cleaning and disposing of food wastes. Food is cooked to make it more palatable and in some cases safe for consumption. Food waste and spills attract insects rodents that can carry disease. Florida winters are too mild to kill insects and mildew and molds each year, so the habit of cleanliness to protect against insect and mold infestation is especially important.

What about **The Conservation Balancing Act** in the kitchen? Can we have all of the benefits water provides and still conserve water and the energy to heat water?

Water and Energy Facts for the Kitchen

Look at Table 1 **to see how much water might be used in the kitchen today.**

Your home equipment and methods may not be the same as the examples, but the examples can serve as reliable guides for conserving both water and energy.

In the Table note the amount of water for each use and the number of times used in a week.

Pre-rinsing dishes is indicated for twice a day. For using a dishwasher a family may rinse dishes for breakfast or lunch, put them in the dishwasher and wash the day's dishes altogether after dinner. Using the rinse and hold cycle twice a day can use less water than hand rinsing. (1820 gallons per year vs. 3640 gallons hand rinsing.)

Consider: The dishwasher uses only hot water and that means energy use as well as water use for a rinse and hold dishwasher cycle. For using a rinse and hold cycle, the annual cost can be $2.68 with a gas water heater and $20.22 with an electric water heater. If you hand rinse dishes with warm or hot water you are also using heating energy.

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2. Virginia Peart, former associate professor, Housing, reviewed by Nayda I. Torres, professor, Family and Consumer Economics, Department of Family, Youth and Community Sciences, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

Hand washing dishes under a stream of warm water is costly. Look what it might take for just heating the water.

The most effective water saving activities in the kitchen are stopping drips and leaks and not running water when not being used. However, just changing from the most wasteful ways in Table 1 (pre-rinsing, dishwasher washing, disposer use, washing vegetables and cooking) to the most conserving can provide water and energy savings shown in Table 2: A total of $49.69 with an electric water heater and $35.65 with a gas water heater. No benefits lost. ***Now that's a real Conservation Balancing Act!***

Your Conservation Balancing Act

Avoid Waste

Water is used often when you work in the kitchen. The uses are important to keep your kitchen and foods sanitary and safe, but water and energy waste can be cut.

- Keep a bottle of cold drinking water in the refrigerator to save running water to get it cool. (In Florida in the summer, it won't get very cool anyway.)
- Stop drips and leaks.
- Turn off water, when not actually using.

Heating Water

- Conserve water and energy for cooking or making beverages by **not** using hot tap water. Hot tap water can contain minerals, like lead and other contaminants dissolved from solder and other solvents in water pipes.

  Note: Water systems from homes built before 1986 can have lead solder in joints. For drinking and cooking, run cold water about 1 minute before use to flush out dissolved lead. Never use hot tap water for cooking or making beverages, if you suspect that lead-based solder has been used.

- Save energy when heating small quantities of water. When heating less than about one quart of water, the microwave oven is quickest and uses the least energy. For over a quart, a teakettle would be quick and would save energy.

Preparing Food

- Wash produce and vegetables in a pan of water or in a partially filled sink rather than under running water.
- Do not thaw frozen foods under running water. The most energy efficient way is to plan ahead and thaw foods in the refrigerator. For short-time thawing, a microwave oven will be quick.

Cooking

- Keep the water you pour off vegetables after you cook them in the refrigerator. Once a week use all of the residue as soup stock. Save water, minerals, vitamins.
- Use only the amount of water necessary to cook foods such as vegetables and stews. You will preserve nutritional value as well as save money.
- Cook foods over low heat in pans with tightly fitted lids to reduce evaporation of liquid.
- Use a pressure cooker to save water, time, and energy.
- Use leftover fruit juices for drinking and making gelatin salads.

Washing Dishes

Preparing for dishwashing. Watch how you prepare dishes for either hand or dishwasher washing. Think of how to use less water in pre-rinsing. Here are some suggestions:

- After the meal scrape food waste off dishes with a rubber spatula before food sets.
- Avoid unnecessary rinsing of dishes that go into the dishwasher. Scrape or wipe with paper napkins from the meal to pre-clean before hand or dishwasher washing.
- When hand pre-rinsing dishes, use cold water. Avoid energy waste.

- Put water in pots, pans, etc. to soak when food is removed. Loosen soil by standing. Always put cold water in bowls with flour mixtures like bread or cake. Hot water cooks the flour and makes it difficult to remove.

For dishwasher washing. Pre-rinsing dishes with the "rinse and hold" cycle can use less water than pre-rinsing at the sink under running water. It depends on how many dishes must be pre-rinsed. Remember, the dishwasher pre-rinses in water from the water heater and takes energy.

- Wash full dishwasher loads whenever possible.
- Use the shortest cycle necessary. If dishes are lightly soiled, as from a dessert party, they may clean well in a short cycle.
- Save energy when dishwashing. Most dishwasher manufacturers recommend 140°F water for best results. If you don't have a lot of greasy food left on dishes, you might get good results with cooler water. Try 120°F setting on your water heater. If 120°F water doesn't work well, set the thermostat higher.
- Select air dry for dishwasher drying to save energy (and the water required to produce energy). If you have hard water, leave dishwasher door closed during air drying to let water drip off and not dry on causing spots.

For hand dishwashing. Put dishes and silver in sink and fill with just enough water to cover. Add detergent. Wash glassware first when water is cleanest. Silver next. Then dishes followed by cookware. Partially fill second sink or a large pan with hot water. Rinse dishes by dipping them into the hot water. Then dry with a towel or in a dishdrainer.

To get warm water for washing dishes, etc., turn on hot water first, then add cold water as needed. You get warm water more quickly and save water.

Disposing of Food Waste

To use water efficiently with disposers: Use a full flow of cold water when grinding food waste. Allow cold water to run for 30 to 60 seconds after grinding to flush all waste from the drain line. Follow disposer manufacturer's directions to use only the right amount of water.

Cleaning the Kitchen Floor

Wipe up spills. A drop of water wets dirt and makes it stick. Food and beverage spills dry and can become gummy. Wiping up spots when they occur and regular sweeping in the kitchen can keep your floor looking clean longer and you may be able to wash the floor less often and with less effort.

> *Remember: When you save water, you are saving the energy to produce that water. When you save energy, you are saving the water required to produce that energy.*

THINK EFFICIENCY -- Say YES to safety and cleanliness in the kitchen, but save water and energy. You will save money, too.

Table 1.

Avoiding Kitchen Water and Energy Waste						
	For One Person		Family of Four		Cost Per Year -- $	
	Times Per Day	Gallons Per Year	Water	Waste Water	Energy w/ Elec. Water Heater	Energy w/ Gas Water Heater
Pre-rinsing Dishes						
Cold Water						
5 gal	14	3,640	$3.64	$6.55		
3 gal	14	2,184	$2.18	$4.15		
Dishwasher						
Regular Load -- 12 gal	7	4,368	$4.37	$8.30	$48.51	$6.41
Short Cycle -- 8 gal	7	2,912	$2.91	$5.53	$32.34	$4.28
Rinse & Hold -- 2.5 gal	14	1,820	$1.82	$3.46	$20.22	$2.68
Hand Dishwashing						
Under running water						
16 gal	20	16,640	$16.64	$31.62	$92.40	$12.22
With Pans of Water for Washing and Rinsing						
6 gal	20	6,240	$6.24	$11.86	$34.65	$4.58
Disposer						
6 gal	10	3,120	$3.12	$5.93		
5 gal	10	2,600	$2.60	$4.94		
Washing Vegetables						
5 gal	7	1,820	$7.28	$13.83		
2 gal	7	728	$2.91	$5.53		
Cooking						
.5 gal	7	182	$0.73	$1.38		
.2 gal	7	73	$0.29	$0.55		

Table 2.

Conserving Kitchen Water and Energy					
	Cost Per Year -- $				
	Gallons Per Year	Water	Waste Water	Energy w/ Elec. Water Heater	Energy w/ Gas Water Heater
Using wasteful ways, you might use	13,130 gals	$19.14	$35.99	$48.51	$6.41
Conserve kitchen water & energy use	8,467 gals	$0.90	$20.71	$32.34	$4.28
And you can save each year	**4,633 gals**	**$18.24**	**$15.28**	**$16.17**	**$2.13**