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## WATER QUALITY ASSOCIATION PRESS RELEASE

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### **Studies show washing with softened water can significantly cut detergent use, energy consumption**

Clothes cleaned at 40 degrees lower, dishes washed with much less soap

LISLE, Illinois — Consumers can cut back on dish and laundry detergent use by 50 percent or more and lower washing machine temperatures from hot to cold just by using softened water, as shown by two new independent studies that were recently released.

“The benefits of softened water in people’s daily lives are significant,” said Peter Censky, executive director of the Water Quality Association. “These studies show how consumers can save money and energy by softening their water.”

The detergent savings studies conducted by the independent testing firm Scientific Services S/D, INC. of New York and funded by the Water Quality Research Foundation (WQRF) reveal that using softened water:

- In washing machines, can reduce detergent use by 50 percent and save energy by washing in 60°F cold water instead of 100°F hot water, achieving the same or better stain removal and whiter clothes compared to results in hard water.
- In dishwashers, with areas having very hard water, can cut detergent use by more than 50 percent after softening and get the same results.

The results show that softened water might not only save consumers money but could also be environmentally friendly, Censky said. They can reduce reliance on polluting fuels because of energy savings and help cut back on harmful detergents going into water streams. Censky emphasized that these environmental benefits, however, are not quantified in the studies.

Researchers used varying levels of hardness and several different name brand detergents in washing machines and dishwashers. It was found that significant savings was noted for all levels of hardness, even hardness as low as 5 grains per gallon.

The laundry study looked at stain removal, putting into the machines from half to the entire amount of manufacturers’ recommended levels. Water hardness ranged from none to 30 grains per gallon, and wash temperature was 60, 80 and 100°F. It was found that using softer water is better at removing stains than increased water temperature or more detergent being used.

ADD ONE

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Notably, softened water with the least amount of detergent and lowest temperature actually provide a higher degree of whiteness compared to increased hardness and both high temperature and large amounts of detergent. This was found to be true for all stains and all the detergents tested.

“Better performance and savings can be achieved with softened water,” the report’s authors conclude.

The dishwasher study included tests that removed difficult soils, in addition to evaluating spotting and filming. Researchers found that softened water using almost 30 percent less detergent cleans as well as water at 10 grains per gallon hardness level. That detergent savings rises to nearly 70 percent when comparing softened water with water at a 25 gpg level.

In dishwashers, the relationship between detergent and hardness was investigated with two consecutive wash-dry cycles for spot and film. One detergent was evaluated for five cycles to ensure that effects do not change with increased number of cycles.

The study also states that air drying as a way to save electrical energy was evaluated and is promising to provide better results when softened water is used rather than hard water.

The detergent savings studies follow research last year that looked at the energy savings that softened water provides when used in water heaters. According to WQRF funded testing conducted in 2009 by the Battelle Institute:

- Gas storage tank household water heaters operated on softened water maintained the original factory efficiency rating over a 15-year lifetime – versus as much as a 48% loss of efficiency in those operated with hard water.
- Indoor instantaneous gas water heaters (tankless heaters) operated on softened water maintained the original factory efficiency rating over a 15-year lifetime. Tankless water heaters operating on hard water failed after 19 days of testing.

Visit WQA for more information at [www.wqa.org](http://www.wqa.org). The Web site also has valuable information about water contaminants, how contaminants can be treated through filtration, manufacturers of certified water treatment products, how to support research projects through WQRF, becoming a member of WQA, as well as, contact information to locate local water professionals that are members of WQA. You can also contact David Loveday, director of communications, or Pauli Undesser, director of regulatory and technical affairs, at 630 505 0160.

*WQA is a not-for-profit association that provides public information about water treatment issues and also trains and certifies professionals to better serve consumers. WQA has more than 2,500 members internationally. WQA provides Gold Seal certification for products that remove a variety of contaminants. These products are tested according to independently developed standards of the highly respected ANSI (the American National Standards Institute).*