

## **Cold Water Washing and Detergent FACT SHEET**

**Prepared by Megan Udoeyop**

**with support from Green Institute Staff funded by the U.S. Department of Energy**

Washing clothes in cold water is a simple, low-cost measure that conserves the money and energy otherwise spent to heat the water. This fact sheet outlines consumer concerns, market trends and studies - cited with sources - on the effectiveness of detergent in cold water washing as well as the environmental toxins found among common brands' ingredients.

### **FINDINGS**

- Chemists under pressure from consumers, legislators and Wal-Mart are creating detergents that work well in cold water, use less volume of water than in the past and contain fewer materials that are hazardous when they go down the drain. Companies producing products tend to comply.
- Washing in cold water saves energy. An ad of Proctor and Gamble, the makers of Tide coldwater claim that if everyone in New York City washed in cold water for a day, it would save the amount of energy equal to that needed to light the Empire state building for a month.
- It is better for the clothes because it retains the colors of the fabrics.
- Protein stains such as blood, eggs and so on can only be removed with coldwater because hot water sets stains in the fabric.
- Washing in coldwater with cold water detergent saves money.
- Typical American household does nearly 400 loads of laundry per year.

### **ISSUES**

- There are still harmful chemicals in most detergents. Wal-Mart singled out 20 chemicals harmful to the environment that it wants the Companies who manufacture its products to avoid using.
- Detergents impact the water system and this impact depends on the amount of water needed to neutralize each dose of a product.<sup>1</sup>
- There is a lot of pressure from consumers and government to sell efficient, healthy and sustainable products.
- A lot of detergents do not have natural, renewable soaps in them.
- Only enzyme-based detergents in cold water can take out stains.

- Most detergents are not biodegradable, or free of petrochemicals and phorus. Each source of ingredients, whether natural or conventional, has its own set of impacts that need to be managed effectively in order to solve the problem.<sup>2</sup>
- Most detergents also contain optical brighteners, which are environmentally-persistent.<sup>3</sup>
- Companies do not focus enough on taking the most hazardous chemicals out of detergents.<sup>4</sup>
- Washing in cold water is not as effective as washing in hot water.<sup>5</sup>
- Washing with cold water makes it easier for bacteria and viruses to spread. More bacteria and viruses remain on clothes and in the washer after cold wash cycles are completed.<sup>6</sup> Washing in hot water does result in a greater reduction of virus.<sup>7</sup> E. Shaheen at the Clorox Company estimates that only 5% of all home laundering in the United States is currently done with hot water.
- Coldwater detergent does not dissolve well in warm and hot water. Purchase of a regular detergent would be required.

## CONCLUSION

- Detergent companies have taken a great step forward in trying to support consumer efforts to save energy and on costs but there is still a lot to be done when it comes to environmental impact, bacteria virus retardation and the overall cold water washing effectiveness.

## SUGGESTIONS

- Do not underload or overload the washer. Washing with full loads in the machine uses less energy per pound of laundry.
- Wash clothes in cold water whenever possible.
- Otherwise use warm or hot water. Use hot water for heavily-soiled and grease-stained clothes or to kill dust mites, germs and bacteria.
- Pre-soaking can help clean clothes that have to be washed in cold water more thoroughly.
- Pre-treating stains and longer wash times can also help clean clothes that have to be washed in warm or cold water.

- Make sure cold water is not below 60 degrees Fahrenheit because clothes will not get cleaned very well.
- Use load size control if possible because energy use varies with the amount of heated water used.
- Reduce the hot water temperature setting on the water heater. This, in turn, will save energy with your washing machine.
- If possible, replace conventional washer with a high efficiency model that has the Energy Star Symbol and the highest MEF (Modified Energy Factor). These washers save a lot of water and use 25 gallons or less per cycle. H<sub>2</sub>Ouce.org estimates that high efficiency clothes washers reduce the average volume per load by 40% overall.
- Choose a horizontal axis front loading washer as these types of washers use less water.
- Check the energy guide labels which tell how much energy is used by that model washer.
- Make sure that the machine has plenty of choices for energy conserving wash and rinse cycles.
- Choose a machine that has faster spin speeds which consequently mean low moisture content and hence, reduction in energy required for drying.

<sup>1</sup>When the foamy water mixed with detergent goes down the drain, thousands of liters of water are required to treat it before it is safe to reenter our water system.

<sup>2</sup>Ecover makes its products from plant and mineral based ingredients that biodegrade quickly and completely as opposed to petrochemical ingredients that take longer and might not do so completely. In addition, there is no possibility of oil spills or flaring gasses with crop production. On the other hand, there may be some problems with plant based materials such as fertilizer and pesticide usage that you don't encounter with petrochemicals.

<sup>3</sup>The presence of optical brighteners due to their persistence in treated sewage effluent is now such a common occurrence that measuring the fluorescence of water is being used as a cheap way of detecting sewage contamination of waters, both freshwater and seawater.

<sup>4</sup>The only thing Detergent Companies are doing now is reformulating and repackaging the same old chemicals in detergents.

<sup>5</sup>Hot water boosts the cleaning power of any laundry detergent. For most clothing, the hotter the water, the cleaner the clothing will be.

<sup>6</sup>The possibility of dissemination of viruses and *Enterobacteriaceae* can be controlled by the homemaker washing in the hottest permissible or available temperature and using a long vigorous cycle followed by drying in an automatic dryer.

<sup>7</sup>Hot water is closer to the temperature required to kill viruses and bacteria than cold water is.

## **BIBLIOGRAPHY**

Sevier Laura. "Is the 'Cleaner Planet Plan' just greenwash?"  
Ecologist; Sep 2009, Vol. 39 Issue 3, p12-12, 1p.

Sevier Laura. "Is the 'Cleaner Planet Plan' just greenwash?" &  
Ecologist; Sep 2009, Vol. 39 Issue 3, p12-12, 1p.

David Santillo. Senior Scientist at Greenspace Research Laboratories.

David Santillo. Senior Scientist at Greenspace Research Laboratories.

"Microbial Disinfection by Hot Water Still Rules". Sep, 2009.  
<http://www.Articlesbase.com>

Wiksell, Joanne Clarquist; Pickett, Mary S. & Hartman, Paul A. "Survival of Microorganisms in Laundered Polyester-Cotton Sheeting" in Applied Microbiology; Mar 1973, Vol. 25 Issue 3, p431-435, 5p.

Gerba, Charles P. & Kennedy, Denise. "Enteric Virus Survival During Household Laundering and Impact of Disinfection with Sodium Hypochlorite" in Applied Environmental Microbiology; July 2007, Vol. 73 Issue 14, p4425-4428, 4p.