

# Washing Clothes

A. Koester

EM 8358 • Reprinted July 1992



## Wash loads

Wash only full loads of laundry to get the most use from the water. Using too much water for the load is wasteful, but using too little may result in rewashing to get the clothes clean. To remove soil, clothing must move freely to break up soil particles and to be exposed to the water and detergent. The space that fabrics take up in the washing machine is more important than their weight. A double sheet weighs about 1 to 2 pounds and a pair of heavy coveralls weighs about 2 pounds. The sheet requires more washing space because it has more surface than the coveralls.

Learn to judge a full load by space required rather than by weight alone. In a top-loading machine, lift the lid and watch a specific item. It should change location within the machine during 10 seconds for efficient cleaning.

For best washing action, a load should consist of articles of different sizes. For example, a "white" load might consist of sheets, pillow cases, T-shirts, shorts, and handkerchiefs.

A family washload consists of a variety of fibers, fabrics, and colors. These might include terry cloth towels, household linens, sturdy fabric garments, delicate fabric garments, heavy work clothes, lingerie, wool sweaters, and diapers. Follow the care label instructions and use them as a guide when sorting various loads.

Washing clothes together just to make up a full load can result in all sorts of washing problems. For example, washing just one or two towels with a corduroy garment causes linting and wrinkling.

Sort clothes according to color, degree of soil, fabric, and surface texture (tendency to give or attract lint). If proper sorting produces only a small load of dark colors, for example, select the "low" water level to conserve water. Washing two small loads using the "low" setting will use approximately the same amount of water as washing the two together on a "high" setting and may eliminate potential cleaning problems.

## Machine capacity

Automatic washers are available in compact and full sizes. The full-size washers have either a standard tub or a large tub. The tub construction varies with different brands. All automatic washers have an inner tub, which holds the clothing being laundered, and an outer tub, which holds the water and the inner tub. The capacity of washers may vary from 9 gallons for front-loading machines to 19-25 gallons for top-loading machines.

## Water level settings and water use

If your washer has water-level controls, use them to adjust the water level to provide only enough water to allow the clothes to move easily. The total amount of water used in a wash and rinse cycle is as important as machine capacity. Standard-size top-loading machines on regular cycle, high water level use from 40 to 57 gallons of water per use. The same machines on low water level use about half as much water. Front-loading machines on regular cycle, high water level use 25 to 30 gallons of water. They also wash smaller

amounts of clothing in a load, so water efficiency is difficult to compare.

The water-level control may indicate unlimited choices between low and high, or it may allow choices of low, medium, or high. Adjust the amount of water to the size of the load to help save water. The manufacturer's literature will specify the amount of water used at various water level settings. Use the minimum water level for the items to move and turn over freely. Use the mini-basket if your machine has one. Adjust the water level to avoid crowding and over loading, which result in poor washing and rinsing and increased wrinkling. For single items or very small loads, hand wash in a basin of water.

## Wash cycles

Selection of the wash cycle depends on fabrics and finishes of the items making up the load. The differences among *regular* (or *normal*), *permanent press*, and *delicate* cycles are in the wash/rinse temperature, amount of water, agitation time, and spin speeds.

The basic recommendations are:

- Regular or normal cycle for all items except those needing delicate or gentle washing. Use regular or normal cycle when using an automatic dryer.
- Permanent press cycle adds water at the end of the wash cycle to gradually cool items before

Ardis Koester, Extension textiles and clothing specialist, Oregon State University.



rinsing. The permanent press cycle may use as much as twice the amount of water as the regular or normal cycle. It should be avoided to conserve water. Since manufacturers have reduced permanent press finishes on clothing, this cycle is less needed. Use this cycle only when clothing will be line dried.

- Delicate for garments such as lace-trimmed or sheer garments that need gentle washing procedures.

Check your washing machine instruction book carefully to determine which water temperatures, agitation times, and spin speeds are best for the items you have to wash. Compare the results of different cycles in terms of water saving, wrinkling, and whether ironing is required. *Avoid the permanent press cycle when water is in short supply.* Use of the delicate cycle, with less vigorous agitation and spinning and reduced water consumption, followed by air-drying garments on shaped hangers, can save both water and energy.

Pretreat heavily soiled articles to save water. Cycles available on some machines include the super-wash cycle which adds wash cycle time, drains out half the wash water, and refills with clean hot water. The pre-soak cycle is used for heavily soiled clothing, usually with enzyme pre-soak products. When the pre-soak time is up, the tub is drained and refilled with water and regular detergent. If clothing is heavily soiled so that extra cleaning is needed, it is

better to use the super-wash or pre-soak cycle than to use two full cycles, but the best option is to pretreat soil and remove it in one regular or normal cycle.

### Wash/rinse temperatures

Aside from water conservation concerns, the largest consumption of energy in home laundering is for heating of water. But before you change to cold-water washing, consider the alternatives:

- The temperature of cold water can vary from season to season. When water temperature is below 60°F, there is hardly any cleaning, regardless of the detergent. Wash water should be a minimum of 80°F. Wrap hot water pipes to prevent heat loss between the water heater and the washer. Measure the temperature of the water after the tub has filled.
- Detergents clean better in hotter water. Water temperature also affects the solubility of detergents, especially granular, nonphosphate, carbonate detergents. When using lower wash temperatures, dissolve powdered detergents in hot water before resetting the temperature selector. Alternatives include using a liquid laundry detergent, or a pre-dissolved granular detergent (cold water detergent).
- Hot water is best for removing oily and greasy soil, but there are reasons for using warm or cold water. These include color preservation, fiber content, and finishes such as permanent press.

- Warm water can be substituted for hot water if you are willing to pretreat soiled areas such as collars, cuffs, and underarms of shirts and blouses.
- Lower wash temperatures can cause bacteria to remain on fabric at the end of the wash cycle, so it's advisable to disinfect diapers, towels, bed linen, and clothing with a chlorine bleach or disinfectant.
- Use cold water rinses because they are as effective as warm water rinses.

### Laundry detergents and additives

As you adjust the water level in your washing machine, be sure to adjust the detergent concentration. The amount of detergent recommended varies between front- and top-loading machines. Be sure that you use adequate detergent for your water hardness, the amount of soil on laundry, and the size of the laundry load. For hard water, cooler wash temperatures, more soil on laundry items, or a larger load, increase the amount of detergent. If the laundry doesn't come clean, you may have to rewash it.

During and after illness in the family, and when using shared or commercial laundry facilities, it's best to disinfect towels, bed linen, and clothing. Liquid chlorine bleach is the most common and economical disinfectant, but use pine oil and phenolic-type disinfectants on garments labeled "do not use chlorine bleach."

THIS PUBLICATION IS OUT OF DATE  
For most current information, please consult the Extension Service catalog  
<http://extension.oregonstate.edu>

Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.



Oregon State University Extension Service offers educational programs, activities, and materials—without regard to race, color, national origin, sex, age, or disability—as required by Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. Oregon State University Extension Service is an Equal Opportunity Employer.