

Homemade Cleaning Products

Lauren Weatherford, Extension Agent, Fayette and Nicholas Counties

Educational Objectives

1. Review a brief history of making cleaning products at home.
2. Increase knowledge of the environmental concerns, cost savings and allergens.
3. Identify the basic ingredients used in a variety of homemade products.
4. Provide resources to make your own cleaning products.

What is a Cleaning Product?

A cleaning product is a blend of specialty materials used to remove soils and stains from a surface and to restore the surface to its original condition.

Cleaning plays an important role in our lives. We clean to protect our health and prevent the spread of disease, as well as maintain the look and extend the life of our possessions.

All cleaning products have the same basic elements of effectiveness, called “cleaning agents.” Below is a list of the most common cleaning agents.



Builders	Adjust pH to optimize cleaning performance and suspend soils
Bleaches	Oxidize and remove soils to lighten the color of stains
Enzymes	Biological proteins that speed the breakdown of soils
Surfactants	Allow a product to wet surfaces, emulsify greasy soils and lift away dirt
Solvents	Organics that dissolve soils
Chelants	Bind with metal ions in solution (e.g., calcium and magnesium in soap scum)
Biologicals	Non-pathogenic microorganisms and associated enzymes that are useful in decomposing soil
Preservatives	Allow your product to remain useable for several months after purchase

– continued –

What is the History of Cleaning Products?

A soap-like material found in clay cylinders during the excavation of ancient Babylon is evidence that soapmaking was known as early as 2800 B.C. Inscriptions on the cylinders say that fats were boiled with ashes, which is a method of making soap. The ashes contain potassium and sodium hydroxide that react with the triglycerides in the fat to form soap. Soapmaking was an established craft in Europe by the seventh century. The chemistry of soap making stayed essentially the same until 1916, when the first synthetic detergent was developed in Germany in response to a World War I-related shortage of fats for making soap.

Commonly referred to as detergents, these are non-soap washing and cleaning products which are synthetically or chemically combined raw ingredients. Detergents have almost entirely replaced soap-based products laundering, dishwashing and household cleaning. In the 20th century, there were extensive advancements in the development of household cleaning detergents to which were efficient, cost-effective and easy to use.

1950s	Automatic dishwashing powders, liquid laundry detergent, hand dishwashing detergent, fabric softeners
1960s	Prewash stain removers, enzyme detergents
1970s	Liquid hand soaps, fabric softener sheets, detergent with fabric softeners
1980s	Detergents for cooler water washes, automatic dishwashing liquids, concentrated laundry powders
1990s	Super concentrated detergents, automatic dishwashing gels
2000s	Disposable cleaning wipes, premeasured dissolvable packets, natural options, spa scents



Why Make Cleaning Products at Home?

There can be many reasons why someone might want to make their own cleaning products, such as saving money, using less toxic and more environmentally-friendly products, and concerns about allergens and irritants. Homemade products leave out added water, coloring and fragrances which require more product per use. Also the ingredients used to make your own cleaners are often very low-cost. For environmental concerns, when you make your own products you lessen the amount of packaging and often reuse containers to store the cleaners. Using common natural ingredients reduces the use and waste of harmful chemicals, which also lessens opportunities for allergens and irritants.

Ingredients in Many Homemade Cleaners

The majority of store-bought cleaning products are derived from petroleum-based products, silicon and other chemicals. But most of us have the things we need in our pantry to make cheaper, less toxic and more environmentally-friendly cleaning products. The basic ingredients in many homemade cleaners are:

- Vinegar
- Lemon juice
- Rubbing alcohol
- Washing soda (can be found near the laundry detergent in most stores)
- Borax (also near the laundry section)
- Mild dish detergent
- Liquid bleach
- Baking soda
- Ammonia
- Water



Homemade Cleaning Recipes

Wood Floor Cleaner

- 1/2 cup of vinegar
- 1 gallon of water

Be careful not to let wood floors get too wet.

Window Cleaners

- 1/2 cup white vinegar, 1 gallon water (2 tablespoons vinegar to 1 quart water)
- 1/2 cup ammonia, 1 gallon water (2 tablespoons to 1 quart water)
- 1 tablespoon ammonia, 1 tablespoon vinegar, 1 quart water
- 3 tablespoons denatured alcohol to 1 quart water



All-Purpose Cleaner

- Mix 1/2 cup vinegar and 1/2 cup baking soda (or 2 teaspoons borax) into 1/2 gallon (2 liters) water. Store and keep. Use for removal of water deposit stains on shower stall panels, bathroom chrome fixtures, windows, bathroom mirrors, etc.
- 1 tablespoon ammonia, 1 tablespoon detergent, 2 cups water
- 1/2 cup ammonia, 1/3 cup vinegar, 1/4 cup baking soda to 1 gallon warm water

Laundry Detergent

- 1 bar (or 4.5 ounces) of shaved bar soap (a homemade laundry bar, Dr. Bronner's, Ivory®, ZOTE, or Fels-Naptha®)
- 1 cup of borax
- 1 cup of washing soda

Blend the mixture in a blender or food processor to create a powder that will dissolve easily even in cold water. Store in a sealed container with a small scoop. Use 1 tablespoon per load (or 2 to 3 tablespoons for large or heavily soiled loads).

Dry Carpet Shampoo

- 1/2 cup cornstarch, 2 cups baking soda, 4 to 5 crumbled bay leaves, 1 tablespoon ground cloves

Mix and shake into carpet. Let sit for an hour. Vacuum up.

Furniture Polish

- 1 part vegetable oil and 1 part lemon juice
- Apply, rub in and wipe clean.

Upholstery Spot Remover

- Club soda

Prewash Stain Remover

- 1 cup sudsy ammonia, 1 cup Ivory® dish soap, 6 cups water

Daily Shower Spray

- 1/3 cup rubbing alcohol, 1 cup water

Mix in a spray bottle and shake. Spray on. No rinsing required.

Pet Accidents on Carpet

- 4 tablespoons vinegar
- 2 cups hydrogen peroxide
- 2 tablespoons liquid dish soap
- 1 tablespoon lemon juice
- 2 tablespoons baking soda



Mix in 1-quart bottle.

Add water to complete the quart – about 2 cups. Spray on spot to neutralize (for odor control) and clean. Follow with plain water. Towel dry.

Laundry Stain Removal

Create a mixture of 1/3 cup water, 1/3 cup liquid detergent, 1/3 cup ammonia.

To use, spray directly on stain and let soak before washing in the washing machine as normal.



Activities

- Choose one or two recipes. Bring the ingredients and sample bottles. Have the participants make their own cleaning products to try at home.
- Bring a small dirty mirror. Use a commercial window cleaner and a homemade version. Compare the cleaning quality.
- Bring a window frame or small piece of polished wood. Have participants make their own furniture polish and then test its cleaning quality.

References

The American Cleaning Institute, *www.cleaninginstitute.org*.

Homemade Cleaning Products, DIY Network, *www.diynetwork.com/how-to/maintenance-and-repair/cleaning/homemade-cleaning-products*.

Cleaning on a Shoestring, Michigan State University Extension, *www.michigan.gov/documents/miseniors/HomeSkillsShoestring_265598_7.pdf*.

Homemade Non Toxic Household Cleaners, Utah State University Cooperative Extension, *extension.usu.edu/washington/files/uploads/Financial%20Management/Homemade%20Non%20Toxic%20Household%20Cleaners.pdf*.

Cantrell, Randall A., Griffin, Amanda, Homemade Household Cleaners, UF/IFAS Extension, FCS3319, October 2014, *edis.ifas.ufl.edu/fy1449*.

Gibson, Sharon M. S., Turner, Pamela R., Green Cleaning – Recipes for a Healthy Home, University of Georgia Cooperative Extension, HACE-E-73-1, Reviewed May 2012, *spock.fcs.uga.edu/ext/pubs/hace/HACE-E-73-1.pdf*.

Harris, Margaret, Clean and Green: Healthy Homes, Healthy People, Health with the University of Arkansas Division of Agriculture, Little Rock, MP492, *www.uaex.edu/publications/PDF/MP492.pdf*.

Hunsaker, Teresa, Homemade Household Cleaners, Utah State University Cooperative Extension, *extension.usu.edu/weber/files/uploads/Homemade_Household_Cleaners.pdf*.

Lemley, Ann, Waganet, Linda, Household Cleaning Products – What about Substitutes? Cornell Cooperative Extension, *waterquality.cce.cornell.edu/publications/CCEWQ-90 HouseholdCleaning Substitutes.pdf*.

2015

Programs and activities offered by the West Virginia University Extension Service are available to all persons without regard to race, color, sex, disability, religion, age, veteran status, political beliefs, sexual orientation, national origin, and marital or family status. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Director, Cooperative Extension Service, West Virginia University.

The WVU Board of Governors is the governing body of WVU. The Higher Education Policy Commission in West Virginia is responsible for developing, establishing, and overseeing the implementation of a public policy agenda for the state's four-year colleges and universities.

Trade or brand names used in this publication are for educational purposes only. The use of such product names does not imply endorsement by the WVU Extension Service to the exclusion of other products that may be equally suitable.

FH15-250

