

# Homemade soap — it's easy to make, high in quality, and you can even make a living with it

By Robert Jones

There was a time when families had to make their own soap because commercial soap was outside the family's budget. But many who remember those days also remember homemade was sometimes harsh on their skin. The reason it was was that one of the ingredients in soap is lye—a harsh alkali. For that reason a lot of people won't make soap today.

But even though homemade soap doesn't have to be harsh, it does have to be made with potassium hydroxide or sodium hydroxide, harsh alkalis commonly called lye. But soap won't contain lye in the finished product if it's been *saponified* properly.

*Saponification* is the chemical reaction between a fat and an alkali. When the fats react with lye, they create a third product, and that's our soap. Grandma's lye soap was only harsh when it contained too much unsaponified lye.

At the turn of the century a family got its lye by leaching water through wood ashes. At best, the concentration of potassium hydroxide in the resulting lye water was questionable making it uncertain how much fat to add. My grandmother said she could tell if the lye water was the right strength by using the wing feather pulled from her favorite goose. She would pour the lye water into a 30 gallon cooking pot and heat the solution. Next, she would touch the feather to the heating lye. If the feather dissolved, the lye was strong enough to dissolve pig fat. If not, the lye water needed to be boiled down more before the fat was added. The type of fat she used to make soap was pig fat, commonly called lard.

Although they lived off the land they had to have a "cash crop" to pay for things like taxes, salt, flour, and sugar. They did this by raising hogs and selling smoked hams. The left over scraps from the butchering process were dumped into boiling lye water and stirred until all lumps dissolved and a creamy pudding-like texture was obtained. If the saponifying fats became too thick, more lye water was added.

About a day and a half later, when the mixture had turned to soap, it was ready to be poured into wooden boxes and set aside to cure for a few more days in the barn. If she was out of soap, she would use some of it immediately. And sometimes, she used the soap she'd made as a food supplement for the hogs in the harsh winters of central Arkansas.

But I now know why her soap was sometimes harsh, and today we can make better soaps because we have more pure and refined products to pick from. Thanks to the Pennsylvania Salt Mfg. Co., Lewis Lye was introduced in the 1930s as a standard for sodium hydroxide. They later sold the company to Red Devil which now advertises it solely as a drain cleaner.

## An early soap recipe

But in its early days, Penn Salt sold Lewis Lye as an improved flake form of sodium hydroxide for soap making. A booklet was available on soap making as well as other uses for the household, livestock, and dogs. I have searched high and low for a copy or a reprint of this booklet but to no avail. However, I did strike gold a few months back. While looking for nuggets of gold at a local flea market I found and purchased a can of Penn Salt's Lewis Lye, circa 1947. Eureka! What a find, and the cost was comparable to that of a can of lye drain cleaner found in local grocery stores today. One man's trash is another's pearl.

Needless to say I saved the can and used the contents to make nine pounds of soap. I used 30 percent coconut oil and 70 percent tallow and, just before pouring, I added a fragrant oil and white soap dye. This makes up my display when I teach soap making at the local Frontier Days and at special crafts events.

The inset on page 59 shows the soap recipe as it appeared on the can.

Before you try this recipe, please read as much as you can about soap making. Also, bear in mind that the caveat that appears in the recipe, against using glass, was before the widespread use of heat resistant glass such as Pyrex®. The heat resistant glasses used today would be fine to use.

As you can see, this recipe, which appeared on a can, was common knowledge in 1947. Today it is known only to a few. But even though soap making is simple, remember, you will have to work with sodium hydroxide. As the old saying goes, "In the hands

of children, it is **DANGEROUS.**" It is caustic and a poison. Now that I have scared you and you know the dangers, I want to say, it is really quite easy to work with. Once again, though, **be careful.** Always add lye to cold water and never add water to lye. When lye and water react, an *exothermic* reaction takes place—meaning heat is generated—and the resulting solution heats up to about 210° F. Mix the lye solution first and allow it to cool while you heat up the fat or oil. In the beginning, make only small batches. Once your technique and confidence grow, then multiply your recipe and efforts.

Safety should always be your first concern. Rubber gloves, safety glasses, and drop cloths are always a good idea. Vinegar works well to neutralize spilled lye. Work in a well ventilated space. When the lye is mixed, it will heat up and give off fumes. Under ideal conditions, mix it under a range hood that vents to the outside. Lye is caustic and corrosive if spilled or allowed to get on the skin, but don't panic. Simply rinse with vinegar. Vinegar can also be used to clean your equipment before you put it away for next time. Be sure to use pots, spoons, and molds reserved for soap making only. The lye will eat into these surfaces, making them unsuitable for cooking.

## Tools

What you will need for soap making probably already exists in your kitchen and storage shed. Since lye is corrosive, use plastic, glass, unchipped enamel, or stainless steel. One wooden spoon is sufficient, but if you

have two, use one for the lye solution and one for the fat or oil. A large heat-resistant measuring cup with spout, one large capacity mixing pot, a professional grade test thermometer that measures between 0° and 220° F, and the safety equipment already mentioned are also needed. Other equipment would include a good kitchen scale that measures in ounces and a mold large enough to hold the saponifying mixture.

*Here's the soap recipe as it appeared on the can of Penn Salt's Lewis Lye that I found at a flea market.*

### Penn Salt's Lewis Lye Soap Recipe

*For a prize winning recipe for a hard soap, clean all fats by bringing to a boil in an equal amount of water, with stirring. Remove from fire, stir and add one quart of cold water for each gallon of liquid. Remove fat from top when firm. One can Lewis Lye, 2½ pints Cold Water, six pounds Fat (tallow, lard or combination of tallow and lard); this makes nine pounds of soap.*

*Slowly add lye to cold water; stir until dissolved (never use glass, stoneware or aluminum vessel); melt fat, let it cool to correct temperature, as shown in table below for fat used.*

|                                |                |                            |
|--------------------------------|----------------|----------------------------|
| <i>Sweet Lard or Soft Fats</i> | <i>85° F.</i>  | <i>Lye Solution 75° F.</i> |
| <i>Soft Rancid Fat</i>         | <i>100° F.</i> | <i>Lye Solution 80° F.</i> |
| <i>½ Lard and ½ Tallow</i>     | <i>110° F.</i> | <i>Lye Solution 85° F.</i> |
| <i>All Tallow</i>              | <i>130° F.</i> | <i>Lye Solution 95° F.</i> |

*Pour Lye solution into melted fat in a thin steady stream with slow, even stirring. (Too rapid pouring or stirring causes separation.) Continue slow stirring for 10-30 minutes until the texture of thick honey. Pour into wooden or heavy cardboard box lined with damp cotton cloth and cover with old blanket or rug to retain heat. Let stand 24 hours. Remove, cut into bars and place so air can reach them. Keep in dry, even temperature two weeks. Aging improves soap, the longer the better.*

Molds can be as simple or as complex as you would like. As mentioned in the recipe, a cardboard or wooden box lined with a wet cotton cloth will work. However, since 1947 plastic molds have become much more common. I would recommend lining these boxes with a plastic bag. If the bag has any printing on it be sure it does not come in contact with the soap because the ink will transfer to the soap. If that happens don't worry; just wipe it off the soap with a damp cloth.

Other molds could include plastic soda cups that carbonated beverages come in. Be sure not to use wax paper cups. The wax will saponify with your soap and you will have to pull off the paper. Any vacuum-formed plastic shape may be used such as the ones that a box of chocolates come in. They seem to be everywhere today. Many companies actually sell molds specially formed for soap making. The shapes are anything from squares, rectangles, circles, and hearts to sea shells and sea horses. They work great, especially if you want to make a homemade hard-milled soap.

## Hard-milled soap

Commercially made hard-milled soap is produced under high heat and extruded into bars. The advantage is that hard milled soaps last longer and have a nicer texture than simply mixed and poured soaps. On a small scale you can make hard milled soap that approximates the commercially made soap. I make it by first making and pouring my soap into a rectangular mold that is three inches wide by ten inches in length. A mold this size is large enough to hold a mixture of one quart of oil, one

pint of water, and 4.2 ounces of lye. I allow my soap to cure for two to three weeks, then I take the brick of soap and shred it with a cheese shredder. I pour the shavings into a large pan and add an equal volume of water. If the water is hard, I add two teaspoons of borax to soften it.

I slowly heat the mixture, stirring it as I do to prevent burning. (If you have to use high heat when working at the stove, you had better use a double boiler.) This reheating of the soap dri-

ves out the air and makes the soap denser and longer lasting just like commercially hard-milled soap.

When the melted soap has a creamy texture pour it into molds. If you want to make goat's milk or cow's milk soap, add two teaspoons of dried milk and stir it in just before pouring. This is also the time to add any fragrances or colors.

When firm, slice the soap into bars. It is ready to use as soon as it cools because it has saponified earlier. By the way, if you make hard-milled soap, this is the perfect time to use the plastic vacuum-formed soap molds mentioned earlier.

## **Making a living with soap**

During the latter half of the 20th century many farm residents moved to the cities for better paying jobs, higher standards of living and to take part in the Great American Dream. Their children are now realizing that a more simplified and self-sufficient life style is better.

Soap making can be the rock on which to establish a back-to-basics lifestyle and you don't have to move back to the farm either. Studies show that home-based businesses are increasing by leaps and bounds. According to *Soap Making Today*, a quarterly newsletter catering to small scale soap makers, the average home-based business earns \$50,250 a year. Home business benefits include tax breaks and one minute commutes to work in blue jeans and sweat shirts. Making soap is a great craft idea and it makes a wonderful gift, but have you ever thought that you might be the next major soap manufacturer? Go forth and saponify. Δ