HOW TO MAKE LYE

Lye can be made by using water to leach or soak potassium carbonate out of the ashes of plant materials. Basic equipment for making lye includes a bottomless, 5-gallon bucket or barrel: a pot of clay, stone, glass, or iron; and a flat stone large enough to hold the bucket. A run-off lip and a circular groove somewhat larger than the diameter of the bucket are chiseled into the stone. See Figure 1.

Figure 1. Lye-Leaching Apparatus
To make the lye, place the flat stone on a pile of rocks, stones, bricks, etc. Place the bottomless wooden bucket on the stone, within the circular groove. Position the clay, stone, or iron pot beneath the chiseled lip. Make a filter by placing two criss-crossed layers of twigs in the bucket. Top the twigs with a layer of straw. See Figure 2.

Figure 2. Lye-Leaching Apparatus—Cross Section
Fill the bucket with dry ashes. Ashes from all types of woods and plants may be used, but hardwood ashes yield the best lye. Mounding the ashes up around the sides and leaving a depression in the dent will ensure that the water drains properly. Slowly pour warm water into the bucket, allowing the ashes to absorb as much water as possible before adding more.

Stop adding water when a brown liquid begins to flow from the bottom of the bucket across the stone and into the jar placed at the lip of the stone. The brown liquid is the lye. It takes about one hour to collect it. This process yields about 2-1/2 quarts of lye. Remember: lye is a caustic, dangerous substance. Do not touch it.

Lye leached in this way may vary in strength. These variations will affect the proportions of lye in the recipes. The strength of the lye solution can be determined precisely by using a Baume hydrometer, which is a special instrument to measure the specific gravity of a solution. The lye solution is poured into a cylinder and the Baume hydrometer is carefully placed in the solution. The reading on the hydrometer is the strength of the lye solution in degrees Baume (°Bé). This method is employed by commercial soapmakers.

If no hydrometer is available, several methods can be used that give reasonably accurate results. Three methods are as follows:

Method One

1. Simply float an egg in the lye solution. If the egg floats with its top visible, the solution is strong enough. See Figure 3.

![Figure 3. Egg Floatation Test](image)
Method Two

- Dip a chicken feather in the solution. A solution of the correct strength will cling to the feather. If the solution is too strong, it will dissolve the feather.

Method Three

- Prepare a saturated salt (sodium chloride) solution by adding salt to approximately 1 liter of warm water. Stir until dissolved. Continue adding salt until no more will dissolve in the water. The solution is then saturated, which means the water has absorbed all the salt that it can hold.

- Tie a weight (a rock or scrap of iron) to the end of the stick of wood. Float the weighted stick in the salt solution. The stick should stand up straight. A small part of it should stick out from the liquid. Mark the stick where it emerges from the liquid surface. The marked stick is the measure for the lye concentration.

- Place the weighted stick in 1 liter of the lye solution, in the same size container used for the salt solution. If the lye is the proper strength, the stick will stand up straight, and its top will emerge at the marked point. The stick can be used again and again. It should be checked occasionally since its weight may change because of drying out or absorbing moisture. The salt solution can also be used again if it remains saturated.

Lye that is too strong can be thinned by adding water. Lye that is too weak can be strengthened by pouring it over a bucket of new ashes, or by boiling it down to its more concentrated strength.

Remember: Lye is dangerous. When handling it, do not allow it to splash on your skin. Do not allow it to boil so fast that it splashes.