1936

EC1113 Methods of Softening Water

Follow this and additional works at: http://digitalcommons.unl.edu/extensionhist

"EC1113 Methods of Softening Water" (1936). Historical Materials from University of Nebraska-Lincoln Extension. 2422.
http://digitalcommons.unl.edu/extensionhist/2422

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
METHODS OF SOFTENING WATER

Many dollars are spent each year for the purchasing of soap and high priced softening agents in order to produce suds. Through experience many economical homemakers have learned that they can make their own softening agent with a good grade of lye. This is not only cheaper, but also very effective.

A can of high grade lye will soften a very large quantity of water. It is impossible to make a general estimate of the amount of lye needed to soften a gallon of water, because the degree of hardness of water varies so widely throughout the state. One can determine the amount of lye needed to soften a gallon of water which is being used by a very simple process. This process requires patience and accuracy.

Method Of Determining The Quantity Of Lye Needed To Soften Water

1. Prepare a lye softening solution by dissolving one can of high grade lye in two pints of water. Use a stone container with a mouth about the size of the top of the lye can. The container should be large enough to prevent the solution from "boiling over" while the lye is dissolving. To avoid fumes, empty the content of a can of lye into the two pints of water, holding the can upright over the mouth of the container. After adding the lye, put a folded newspaper immediately over the top of the container and put the lid back on the empty lye can. As soon as the lye has stopped fuming, stir it with a stick or a wooden spoon so as to prevent the lye from settling and forming an icy coat on the bottom of the container.

2. Put one gallon of hard water in a two gallon stone container. To this, add one teaspoonful of the lye water solution. Then let this stand three days. During this time, the lye from the softening solution will unite with the "hard" elements in the water forming a precipitate which will settle to the bottom of the container. The water is completely softened when all the hard elements have been precipitated out. If too much lye is added (more than will unite with the hard elements of the water) it will remain free in the water and will irritate skin or weaken cloth fibers.

3. After three days, test the water with red litmus paper. This may be secured from a drug store at a very small cost. If the red litmus paper turns blue, it denotes the presence of free lye. In this case add hard water, a cupful at a time. Stir thoroughly and let stand. Test again with red litmus paper. Continue adding water (keeping accurate count of the amount added) until the softened water when tested no longer turns the red litmus paper blue.

4. If, at any time while making the tests, the red litmus paper remains red it may mean that you have just happened to get the correct balance between lye and the hard elements in the water. At least there is no free lye present. It may, however, indicate an insufficient quantity of lye. In this case all of the hard elements in the water will not be separated out and the water will not be truly soft. More lye solution should be added, a very small amount at a time possibly a few drops, until when tested the red litmus paper begins to turn bluish showing free lye. Then a very small quantity of hard water should be added at a time until the litmus paper remains red.

5. If it is difficult to work with so small a quantity of water, repeat the experiment using a two, three or five gallon unit of water. Keep accurate account of the total quantity of lye and water added.
Regular Softening Of Hard Water

After having determined the amount of lye needed to accurately soften a one, two, three or five gallon unit of water, it is a simple matter to keep a constant supply on hand. Two water tight kegs or barrels, each large enough to hold a three day supply of softened water, will be required.

To begin, the known quantity of water in both containers is softened simply by adding the correct amount of lye solution and letting stand three days before using. As soon as the softened water in keg No. 3 has been used the sediment at the bottom should be removed, the keg washed, filled and add correct amount of lye softening solution. By the time keg No. 2 is emptied, the water in keg No. 1 will be softened ready for use.

The water has to be removed from the top of the kegs because of the sediment settling at the bottom. If a siphon is to be used, the kegs must be set high enough so that the entire content of the kegs may be drained. The top of the kegs should be securely covered.

Since water in the same well varies in degree of hardness from time to time, an occasional test of the softened water should be made to check on the quantity of lye solution used.

Sal soda or washing soda which is commonly available, not expensive, and prepared in convenient form is practical to use where water is not extremely hard. Directions are given on the package in which it is sold as to the amount to be used.

Where tri-sodium phosphate can be purchased at a reasonably low price it is an excellent water softener. Barrel lots can frequently be purchased at a low price from dairy supply companies or stations which handle janitor cleaning supplies.

Save Dollars By Adequately Storing And Caring For Rain Water

It has been estimated that a billion cakes of soap could be saved annually in the United States if rain water or softened water were used by everyone. The above discusses how hard water may be satisfactorily and cheaply softened and supplied in quantity for general use, but how much more satisfactory it would be to have a generous supply of rain water throughout the year. If a cistern is not available, make one a family goal. They are inexpensive and the whole family will gain an abundance of pleasure in having access to soft water.

To Sweeten Rain Water

Knowing the depth of the cistern and its capacity, it is easy to estimate the amount of water which it contains. For every thirty barrels of water add one-half ounce of potassium permanganate dissolved thoroughly in hot water. Allow it to mix thoroughly with the water in the cistern (three or four days) before using the water.

To Destroy Wrigglers And Settle Sediment

Add a small amount of powdered alum, dissolved in hot water. If sediment or wrigglers are bad, as much as one-fourth pound of alum may be added for every thirty barrels of water.

THIS WATER IS NOT TO BE USED AS DRINKING WATER