

Making Soap from the Leaves of the Soaptree Yucca

Fort Selden Historic Site



Essential Question

How was soap made in the past?

This lesson will introduce students to the history of soapmaking and just one way indigenous peoples of the Southwest Borderlands made soap prior to the arrival of Europeans. This lesson will also provide students the opportunity to make their own homemade soap using the soaptree yucca plant, a technique still used in New Mexico today.

Objectives

After completing this lesson, student will be able to:

1. Understand the history of soapmaking.
2. Identify the ingredients of soap.
3. Identify soap production methods in the Southwest Borderlands.
4. Follow a recipe to make homemade soap.

Background

The use of soap has a long history and it is easy to imagine how it was discovered if you know what materials are used to make soap. All soap is a combination of fats, oils, and an alkali salt (sodium hydroxide or lye) that is present

in ashes – the lye – from burned plant material, like wood. So, if you can imagine people cooking meat over a fire, you can probably see an animal roasting on a spit. As it's cooking, the fats and oils drip onto the fire. After the animal is cooked and removed from the spit, the ashes from the fire are left. When it starts to rain, foam and suds form on the ground. If a person were to put their hands in it to study it and then wash it off in the river, they would notice how clean their hands were.

The origins of cleanliness are prehistoric. Early peoples lived near water and knew it had cleansing properties. Roman legend states that soap was named for Mount Sapo, a mountain where animal sacrifice occurred. Rain washed ash and animal fats down to the Tiber River below. Women who cleaned their laundry on the banks of this river noticed that it was easier to clean their clothes here. The Roman Empire soon became famous for its baths, but the soap produced during this time was too harsh for use on skin and was still reserved for laundry. Much later, during their military occupation of the rest of Europe, they noted that the Celts (Germans and Gauls) used soap for cleansing their bodies. However, soap has a recorded history even before the Roman civilization.

Many ancient civilizations have left behind evidence of soap making. Excavations of Ancient Babylonian ruins produced clay cylinders filled with a soap-like material that dated to 2800 B.C. The cylinders were inscribed with a recipe that described boiling fats with ashes. The use of this material was not described, so we don't know if it was used to wash themselves, their laundry, or their homes. Early Greeks bathed for aesthetic purposes, but did not use soap. Instead, they scrubbed up with sand, clay, pumice, and ashes, then they would anoint themselves with oils and scrape it all off with a tool called a strigil. The first civilization that knowingly made soap was the Romans—if only for laundry. However, by the second century A.D., the Greek physician Galen recommended the use of soap on the human body for medicinal and cleansing purposes. As these empires declined, so did their influence on hygiene.

By the Medieval Period, the collapse of the Roman Empire, and the loss of education afforded by the writings of Greek philosophers led to a belief that bathing was dangerous and unsanitary. This lack of personal cleanliness and related unsanitary living conditions contributed heavily to the great plagues of the Middle Ages. It wasn't until the 17th century that cleanliness and bathing started to come back into fashion in Europe. However, there were still areas of the medieval world where personal cleanliness remained important. Daily bathing was a common custom in Japan during the Middle Ages and in Iceland, hot springs were popular gathering places.

Both the Renaissance and the following Period of Enlightenment brought about a renewal of interest in the sciences and allowed for experimentation in soap making and a resurgence in bathing and personal hygiene. Italy, Spain, and France were early centers of soap manufacturing, due to their ready supply of raw materials such as oil from olive trees. Subsequently, the desire for soap increased. In 1790, Nicholas Le Blanc developed a method to turn common salt into sodium hydroxide using sulfuric acid, limestone, and coal that allowed soap to be produced in larger quantities. The only problem was that it produced dangerous chemicals and residue in the process and led to a growing problem with pollution.

By the mid-1800s, soap makers were using the new methods of making alkali salts and developing recipes that included regional fats, oils, and fragrances to develop regional styles of soap. While Europe's soap production included many of the fragranced soaps we are accustomed to today, the United States would not reach this stage for a few more decades.

Soap Boilers, as soap makers were called during the Colonial Period of United States history, were among the first settlers of Jamestown in 1607. Early settlers also carried a large supply of soap to the colonies. Within a few years, colonists became very self-sufficient. They raised their own livestock and grew food that was easy to cultivate. The butchering of animals produced fat and cooking the animals and heating their homes produced ash. Both fat and ash are necessary for making soap. Rather than waste these items and pay an exorbitant amount of money to ship finished soap from England, colonists developed a schedule to make their yearly supply of soap.

Soap was traditionally produced during two times of the year: spring and fall. Settlers who raised and slaughtered animals typically chose to make soap in the autumn. Soap smelled better if the fats were fresh and most animal slaughtering occurred in the fall. Homesteads where they did not slaughter animals on a large scale had an

abundance of ash after the winter and would make their soap in the spring. At this time, soap was not produced as hard bars, but rather in large containers of a gelatinous goop that was scooped out and used. The job of making soap was seen as a woman's task, and was also considered one of the most difficult jobs in the home. In fact, they might have saved themselves a lot of dangerous work if they had observed Native Americans and their natural soap-making techniques.

Long before European Colonists arrived, the indigenous peoples of the Americas had discovered a much simpler method of making soap. Many plants that naturally grow in the United States produce a substance known as saponins. This term should sound familiar (Mount Sapo). Saponins produce a natural lather, and just like manmade soap, helps bind oils and dirt to water. Local tribes in the Southwestern Borderlands used the sap from Yucca and Gourd roots as shampoo and body cleanser. Until the introduction of commercialized soap-making, plants were the only soap medium used by Indigenous peoples of New Mexico and Arizona as well as by the Spanish settling in New Mexico. Many Indigenous peoples including the Tewa, Navajo, Ute, and Apache used yucca suds in washing ceremonies. The saponins in the yucca plant also help to dye wool in the wool-making process.

With the introduction of Spanish colonists into the region in the 1500s, Puebloan soap making saw some changes. In Spain, olive trees were regularly used in production of soap. In New Mexico, the Spanish replaced olive trees with the oil that came from animal fat – particularly their livestock. This introduction of animal fat into soap making was adopted by the Pueblos, although it did not entirely replace plant-based soap making.

By the beginning of the 19th century, city merchants in the United States dedicated themselves to making soap year round and became known for making dependable soaps, while rural homesteaders still used traditional methods that would occasionally produce useless batches. In Europe, soap was a heavily taxed luxury item. In order to be able to store soap for longer periods, merchants added salt at the end of production; this hardened the slimy soap into bars that could be wrapped and cut. It was at this time that people in cities and towns started purchasing soap rather than making it. As bathing came back into fashion in the 19th century and railroads made the shipment of goods easier, smaller towns and rural areas started purchasing bar soaps by the pound rather than making it. By the early 1900s, soap production had become a major industry.

During World War I, commercial soap, made with detergents, came into existence. The injuries of war, as well as a scarcity in resources, brought an increased need for other cleaning agents. By 1953, detergents outsold soaps for laundry and household cleaning. Eventually, detergent alone, or in conjunction with soap, was used for personal cleansing.

Primitive methods for cleansing are still using even into the 21st century. Local companies continue to produce products that are plant-based and consist primarily of the root and leaves of the yucca plant.

Hands-On Activity

K-4th grade: Making soap using the leaves of the soaptree yucca plant with adult supervision.

5th-8th grade: Making soap using the leaves of the soaptree yucca plant with adult supervision.

9th-12th grade: Making soap using the leaves of the soaptree yucca plant.

New Mexico Content Standards

<https://webnew.ped.state.nm.us/bureaus/instructional-materials/new-mexico-content-standards/>

K-4th Grade Standards

STRAND: History

Content Standard I: Students are able to identify important people and events in order to analyze significant patterns, relationships, themes, ideas, beliefs, and turning points in New Mexico, United States, and world history in order to understand the complexity of the human experience.

K-4 Benchmark I-A—New Mexico: Describe how contemporary and historical people and events have influenced New Mexico communities and regions.

STRAND: Geography

Content Standard II: Students understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

K-4 Benchmark II-C—Be familiar with aspects of human behavior and man-made and natural environments in order to recognize their impact on the past and present.

K-4 Benchmark II-F—Describe how natural and man-made changes affect the meaning, use, distribution, and values of resources.

5th – 8th Grade Standards

STRAND: History

Content Standard I: Students are able to identify important people and events in order to analyze significant patterns, relationships, themes, ideas, beliefs, and turning points in New Mexico, United States, and world history in order to understand the complexity of the human experience.

5-8 Benchmark I-A—New Mexico: Explore and explain how people and events have influenced the development of New Mexico up to the present day.

STRAND: Geography

Content Standard II: Students understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

5-8 Benchmark II-B—Explain the physical and human characteristics of places and use this knowledge to define regions, their relationships with other regions, and patterns of change.

5-8 Benchmark II-C—Understand how human behavior impacts man-made and natural environments, recognize past and present results, and predict potential changes.

5-8 Benchmark II-F—Understand the effects of interactions between human and natural systems in terms of changes in meaning, use, distribution, and relative importance of resources.

9th – 12th Grade Standards

STRAND: History

Content Standard I: Students are able to identify important people and events in order to analyze significant patterns, relationships, themes, ideas, beliefs, and turning points in New Mexico, United States, and world history in order to understand the complexity of the human experience.

9-12 Benchmark I-A—New Mexico: Analyze how people and events of New Mexico have influenced United States and world history since statehood.

STRAND: Geography

Content Standard II: Students understand how physical, natural, and cultural processes influence where people live, the ways in which people live, and how societies interact with one another and their environments.

9-12 Benchmark II-C—Analyze the impact of people, places, and natural environments upon the past and present in terms of our ability to plan for the future.

9-12 Benchmark II-F—Analyze and evaluate the effects of human and natural interactions in terms of meaning, use, distribution, and values of resources in order to predict our global capacity to support human activity.

Additional Resources & Resources Used

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Robbins, Wilfred William, John Peabody Harrington, and Barbara Freire-Marreco. *Smithsonian Institution Bureau of American Ethnology Bulletin 55: Ethnobotany of the Tewa Indians*. Washington: Government Printing Office, 1916.