Waste Not: Wood Ashes
Dan Hettinger, Living Web Farms 2019

Ecological Responsibility:	Estimated 70% of ashes are being landfilled, nutrients lost.
Prudence:	Valuable, Free source of Potassium, Calcium, other plant nutrients
Resilience:	A step towards chemical independence?
Education:	A relatable, multi disciplinary platform for introducing chemistry

Typical Wood ash nutrient content: 25-40% Calcium, 5-10% Potassium, 1% Phosphorus

Ash - Mineral residue leftover from combustion of biomass.
Wood Ash - Our concern, the ash leftover from heating with wood.
Caustic - able to burn or corrode organic tissue by chemical action
Basic - Having a pH higher than 7. Stronger bases are indicated by higher pH number.
pH - A measure of the amount of + Hydrogen Ions present in aqueous solution.
Salts - A chemical compound consisting of a postive ion (cation) and a negative ion (cation) that will disociate to negative and positive in solution.
Alkaline - General term to describe a basic substance. More specifically one that derives from Alkali and Alkali Earth metals.
Alkali Metals - Potassium and Sodium, and the others in the first column of the periodic table.
Soluble - Able to dissolve in solution. Our concern are compounds in wood ash that are soluble in water.
Lixiviator - Fancy word for equipment for separating soluble from insoluble compounds. Our lixiviator is a 5 gallon bucket with a tiny hole.
Potash - Potassium salts, specifically Potassium Carbonate obtained from leaching water through ashes, purifying and evaporating water.
Pearl Ash - Refined potash, historically useful and still commercially available for cooking.
Liming - The act of adding lime (or lime equivalents) to soils to raise pH.
Nixtamalization - Alkaline treatment of field corn kernels, to soften and increase nutrient availability
Saponification - The central chemical process involved in soap making.

Starting point for nixtamalization: 2 parts corn to 1 part old ashes. 2 parts corn to ¼ part fresh white ash.
Starting point for potash/baking powder equivalents: 1 part baking powder = 2 parts refined potash
Starting point for ash water soak: Equal parts by volume, loose packed ashes and mineral free water
Starting point for ash water soap: 2 parts rendered animal fat, 1 part ash water. 2 tsp table salt and extra water optional.

Excellent References:

Kevin M. Dunn: *Caveman Chemistry* and *Scientific Soapmaking*

Leigh Tate: *How to Bake without Baking Powder* and 5 Acres and a Dream Blog

Homestead Laboratory Blog

Thanks to Youtube: FlavorLab, ANSInet open access publisher, Grandpappy.org, Beyond Benign, NCDA