Homemade Fireplace Logs for Cheap Heat

And G-d said, Let the earth bring forth grass, and herb yielding seed ...
Genesis 1:12

It's the bane of farmers, cattlemen,gardeners and foresters in the west. It comes from the steppes of Asia.

Salsoli kali

The Russian Barb Wire Thistle adapted when animals started eating plants to draw energy. A survivor, salsoli kali took on the form it has today after eons of herbivore predation. Its spiny outward form allows only the hungriest ruminant animal to consume it. A host of chemicals contained within its leafless branches will sicken and weaken any creature desperate enough to make it a continuing source of nourishment.

It came to the North American continent with the Caucasian settlers, its microscopic embryo hiding among the seeds brought along to plant in the American Frontier. It found an ideal environment and spread quickly.

It became an icon. A symbol of desolation and abandon of the late 19th century. Above anything else, it became a pest. It has been one of the few plants to have a starring role, whose appearance on stage needed to be timed. It's rolled on cue, through many a cowboy movie.

The author became familiar with salsoli kali in the way most westerners have done, by trying to get rid of it. Burning dried salsoli in a barrel can cause the sides to glow cherry red from the energy contained in its captured carbon.

In fact, salsoli contains as much energy in its branches per unit weight as fuel coal for generating stations. Salsoli is one of natures most efficient capture mechanisms for both sunlight and carbon dioxide.

In this Instructable, you will see how to turn the Salsoli plaguing your yard into

usable fuel to heat your home or cabin. This is not new, most manufactured fireplace logs have salsoli as an ingredient. One chemical found in salsoli is oxalic acid, an additive in mixtures of solid rocket fuel. Oxalic acid is a mild acid that exists in solid form at room temperature and is related to the lighter petroleum gases. The more mature the plant, the higher the concentration of oxalic in its tissues. The plant also contains potassium nitrate, an ingredient in gunpowder.

The difference between the commercial logs and the logs you will make is that commercial logs require special equipment and chemical binders unavailable to the average homebuilder. The usual equipment needed to made commercial firelogs are extruders capable of subjecting wood chips and salsoli to 20,000 psi in order to form high density logs for long burn periods. The chemical binder pumped into the extruder is usually paraffin wax derived from cleaning out oil wells.

Although these logs do not have the same amount of burn time as the commercial variety, they are virtually free and in infinite supply. The only materials needed are water, shredded paper, and if deemed necessary, a small amount of wheat paste for paper maché.

To Start

1. Get a large quantity of salsoli by ripping it out of the ground by its roots,
2. Lay the salsoli out in the sun to dry. In the arid west, this should only take a few days. Make sure it doesn't blow away. It will turn into a small crunchy mass easily crushed with your feet.
3. Crunch it up, if you have a yard chipper, grind up any large remaining roots and stems.
4. Assemble your tools and materials. They should be: a 5 gallon plastic bucket, an electric drill with a stucco mixer attachment, water, plastic flower window box as a mold, a piece of plywood that fits over the top of the flower box, a cinder block to apply pressure to the mixture, and a quantity of shredded waste paper equal to the volume of the flower box. The quantity of dried salsoli should be slightly less than the volume of the flower box.
5. Combine the water and paper in the 5 gallon bucket, if a stronger log is desired, add a small amount of wheat paste. Fill the bucket with water and stir with the drill/stucco mixer.
6. Add the dried Thistle while stirring until all the water is absorbed.
7. Pour into the flower box mold.
8. Set the plywood on top of the mixture and place a cinder block on top to exert pressure. The remaining water will squeeze out of the mold into the drip pan. Drain it occasionally.
9. After a few hours the mixture will be hardened enough to where the log can be removed. Let the log dry out in the sun for at least a week.

Any number of steps could be added when the logs are drying out, cutting to size, or wrapping in newspapers to initiate better combustion.

Burning these homemade logs for heat doesn't add additional Climate Changing gases into the atmosphere. Since the carbon has already existed in the ecosystem before it was captured by salsoli, burning only releases what was already present, and avoids burning carbon from a non-renewable source such as petroleum based fuels.

One acre of desert scubland can provide sufficient salsoli to keep an individual busy over the summer making logs to burn through the winter. These logs could also be sold as part of a community based fund raising effort for local projects. Consider that commercial logs sell for $5, selling made for free thistle logs can be quite a bargain. As always, be careful with fire, always burn in a proper manner in accordance with local ordinances.

An extra bonus can come from the ashes, they contain substantial amounts of potassium and phosphorus along with trace minerals. If you decide to use the ashes as fertilizer, make sure its burned to the point where no seeds have survived. The ashes are very alkaline, make sure soil is properly acidified.

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Always work and act in a safe manner