The Chinese Tallow Tree

By: Sarge

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I have been interested in alternate energy since about the age of 14 when as a budding survivalist, my dad became interested in solar power and set up thermal collectors to heat our pool. It didn't work very well in Michigan, but it got me to thinking about how society could come back after nuclear war. My initial fascination with survivalism was to have the knowledge in the form of books and computer tapes, to rebuild. This wanting to protect knowledge has led me to collect a lot of information on many different subjects, both in hard copy, books, print outs, handwritten notes and electronically.

I haven't done anything with the Chinese Tallow, but I know that it can be done. My intent here and with many alternate energy projects that I haven't had practical experience with is to get one to thinking. I wish I had a cook book method on how to build an oil extractor, but I do not.

The Chinese Tallow Tree (Sapium sebiferum) is an ancient and valuable oil seed producing tree with a long history of large scale commercial production in China and other parts of Asia.

Tallow has been cultivated as a seed-oil crop in China for at least 14 centuries. Candles, soap, cloth dressing, and fuel are made from the tallow. Chinese vegetable tallow is a solid fat that is in the outer covering of the seeds. The kernels produce an oil called stillingia oil that is used in machine oils, as a crude lamp oil, and in making varnishes and paints. It can also be converted to charcoal, ethanol, and methanol. Potentially, oil from the seeds can be a substitute for petroleum. It is one of nature's most prolific producers of renewable hydrocarbons, yielding the equivalent of 500 gallons (12 barrels) of fats and oils per acre per year (4,700 liters per hectare) - far exceeding other traditional oil seed crops. Chinese Tallow Tree oil was used successfully as an emergency source of fuel for diesel equipment operated by Chinese and Allied forces during the Second World War, and its application as a renewable diesel and jet engine fuel has been further investigated more recently in Germany and the United States.

Remarkably hardy and adaptable, it has also been introduced in many other subtropical regions of the world.

The Chinese Tallow Tree has long been recognized by U.S. scientists (beginning with Benjamin Franklin in 1772) for its beneficial economic potential and the tree has been successfully introduced in southern and coastal regions. Serious efforts by the USDA in the early part of the 20th Century demonstrated the adaptability and large oil yield of the tree in the U.S. However, traditional Chinese hand harvesting methods were not economical and the mechanical harvesting technology of that era was not capable of efficient recovery of the large potential oil resource.

It has spread from South Carolina all the way down to Florida, west into Texas, and has now been located in California. Chinese tallow is very hard to get rid of. Trees are chopped down, roots are dug up and removed, and herbicides are used, but the aggressive seedlings continue to return, sometimes for years. Fire can hold the tallow at bay when the tree density is low, but since tallow can suppress fuel species, fire can go up to a stand and then go out from lack of fuel, leaving the tallow relatively unharmed. Tallow can re-sprout if topkilled as well as root at some distance from the original stem. Chinese tallow has been cultivated in nurseries and sold as an ornamental tree used for landscaping; however, it is now classified as a nuisance species in some locations and can no longer be sold. It has separate pollen and seed-bearing flowers, and seeds can be spread by birds and by moving water. One of my recommendations, that I have come across during further research of this topic, is if you don't have these trees in your area already do not to plant them. Of course if you have these trees available for experimentation already look at these pests as an opportunity to do some research.

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