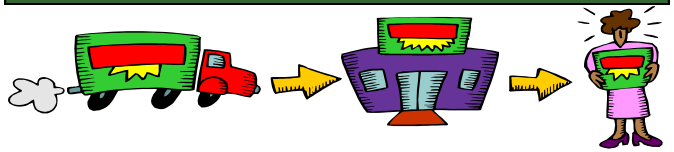
Virginia Tech VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

BUY LUMP CHARCOAL!!!!

- Chemical free
- Burns longer
- Promotes Sustainable Forestry
- It's Natural
- Low Ash Production = Less Waste
- Burns at higher temperatures

Marketing



Marketing is an important aspect in the success of any product. Some may be wondering why lump charcoal is not a very popular product here in the United States. The answer to that is unsuccessful marketing.

Many Americans turn to the first brand name or the lowest priced briquette charcoal. Lump charcoal is not that well know but with a bit of marketing it is quite possible to show the successes of this product.

Conclusion

It was found that the briquette charcoals lit faster than the lump charcoals as of a result of the use of lighter fluid. Lump charcoal glowed consistently longer and brighter for approximately 30 minutes than the relatively unstable briquette charcoal. It can be inferred that lump charcoal may be a superior product to briquette charcoal because it produces less ash and is chemical free.

Thank You

We would like to thank first and foremost, our Governor School Leader and TA Krista Leonard and Matt Wimmer for their dedication and commitment to making our project the very best.

Also we would like to thank Dr. Phillip Radtke and Dr. Tom Hammett for taking time out of their workday to help us with our research and findings. Without their help this project would not have been possible.

Lastly, we would like to thank Mr. Bonsi for always being there.

Too Hot to Handle, The Truth Revealed from the Ashes...

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The Governor's School for Agriculture

Scholars of 2005

VT GOVERNOR'S SCHOOL AGRICULTURE

Too Hot to Handle...The Facts Revealed From the Ashes

The Attraction of Charcoal

Companies often attract consumers by marketing the qualities of their charcoal, such as low volatiles, low ash content, longer burn times, quick ignition rates, and high calorific values. To consumers, name brands and higher prices indicate a better quality product; however, significant differences in the quality of charcoal exist in different brands of charcoal. Lump charcoal production promotes environmental awareness and sustainable forestry.

History

Did You Know?

- Charcoal was used to embalm the dead in Egypt?
- The Chinese used it in the process of making bombs?

- That prehistoric people used the tar, a waste project of the charcoal as an adhesive for their spears?
- In the present, charcoal related products are used in households worldwide. Water purification systems, deodorizers, top soil, and cooking food are common examples of ways people use charcoal in their homes.

Why Make Charcoal When You Have Wood?

Lump charcoal can be made from the waste wood that mills can't use. To make charcoal, the wood is placed in a kiln and charred. By controlling the airflow, water is mostly evaporated along with any other volatiles leaving only carbon behind. Without these volatiles, enables the charcoal to burn at a higher Calorific rate (hotter) for a longer period of time.

Kiln—>

So What's in Charcoal?

Like briquette charcoal, lump charcoal is produced from unprocessed waste wood. While the production of lump charcoal is natural and chemical free, the construction of briquette charcoal involves the use of volatile compounds processed into the wood such as methane, hydrogen, and tars. The objective of this project was to compare the economical and agricultural qualities of briquette and lump charcoal.

Testing Different Brands

Matchlight

Name Brand

Kingsford

Natural Hardwood

Cowboy

Virginia Tech

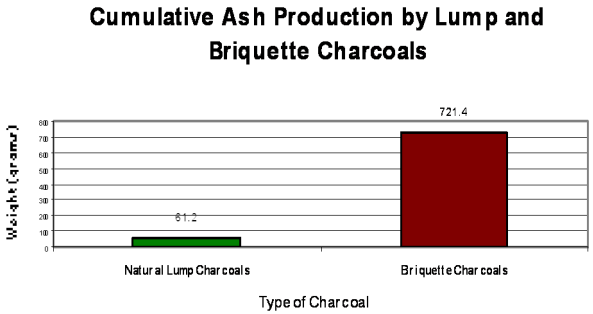
Different Tests

Glow Test- the glow of the burning charcoal was used as a heat indicator for the charcoal's calorific value

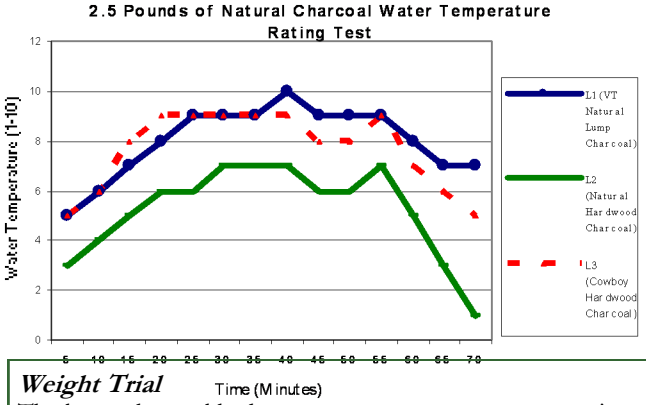
Water Test- another indicator of heat that was tested was the temperature of water in a can placed over the burning charcoal.

Ash Test- data was collected to measure the amount of waste each charcoal produced

Overall, the lump charcoals performed better than the briquette charcoals. In the weight test, they contained less ash and waste material, sustained a steadier glow, had a higher calorific value, and contained no chemicals. However, the briquette charcoal out performed the lump charcoal in the volume test for

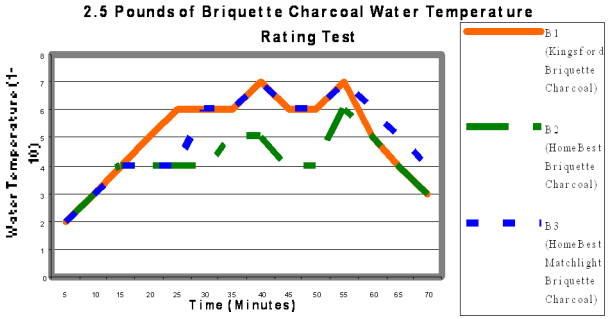


Overall, the lump charcoals produced 61.2 grams of ash and the briquette charcoals produced 721.4 grams of ash.



Weight Trial

The lump charcoal had an average water temperature rating of eight. The briquette charcoal had an average temperature rating of five



Volume Trial

The lump charcoals raised the temperature rating of the water to an average of four. The briquette charcoals increased the water temperature rating to an average of five and a half with sustained temperatures