



Aprovecho Research Center

Advanced Studies in Appropriate Technology Laboratory

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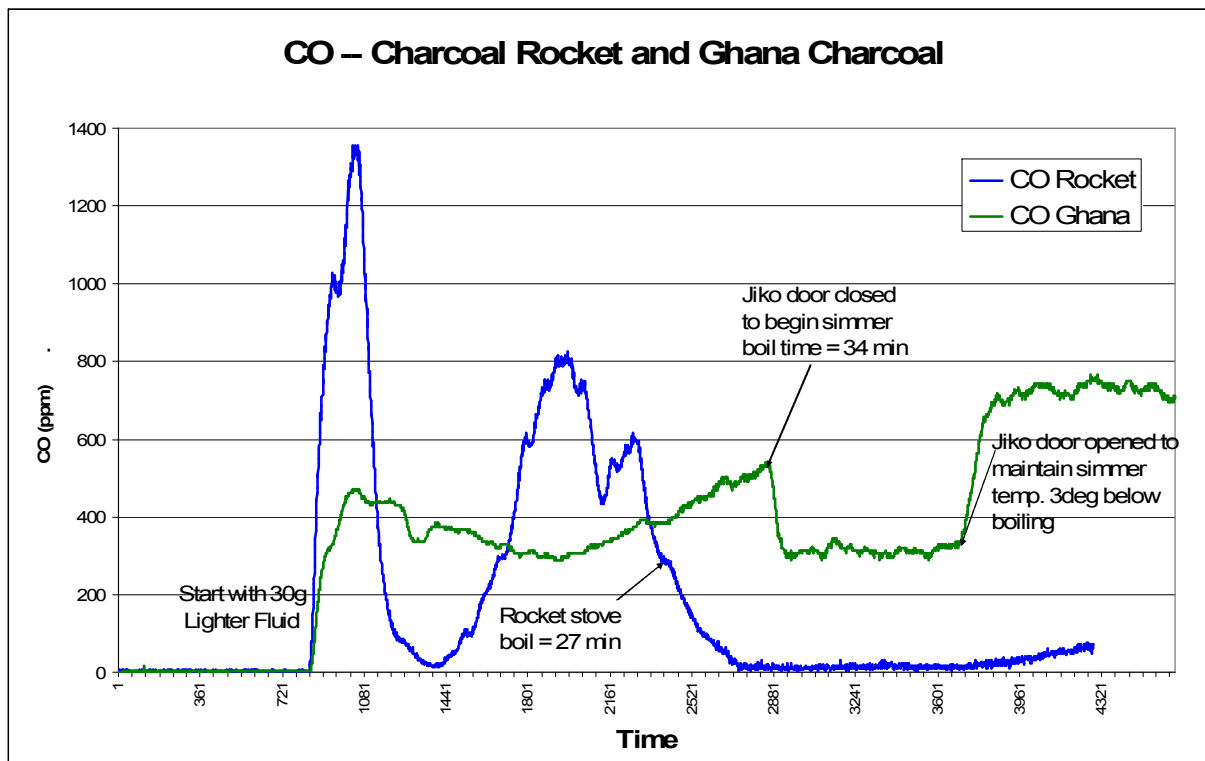
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Comparing the Charcoal Burning Rocket and Jiko Stoves

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The charcoal Rocket Stove was compared to the Jiko-type charcoal stove sent from Ghana. 600 grams of Kingsford charcoal was placed in the stoves under the Aprovecho emissions hood. One test was performed on each stove for preliminary studies. The stoves are compared in the following graph for carbon monoxide emissions during a cooking task (to boil 5L of water and simmer 30 minutes).

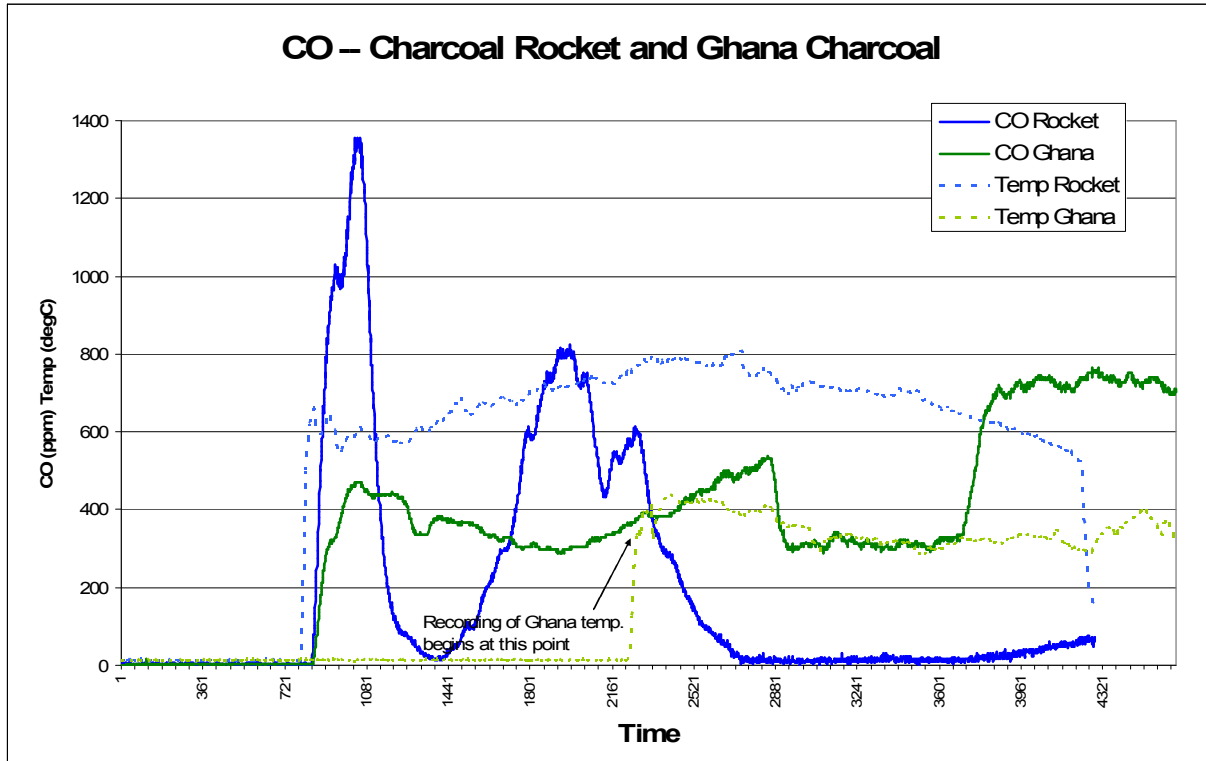


As previously reported, emissions of CO in the Jiko-type stove are reduced when the door is closed. Opening the door to increase firepower, in an effort to maintain simmering temperatures, increased emissions. The rocket stove maintained a full boil during the simmering period.

Temperature above the combustion Zone and Production of CO

The following graph shows the temperatures during the cooking task for both the charcoal rocket and the Ghana charcoal stoves. The Ghana Charcoal stove maintained an average temperature

below 400 degrees C. The charcoal rocket stove averaged approximately 700 degrees C. It is possible that the higher temperatures in the insulated riser resulted in the significant decrease of CO production once temperatures in the riser reached 725 degrees C. When temperatures fell to approximately 625 degrees C, CO emissions began to rise. Temperature is recorded with a type K thermocouple.



CO and Temperature – Charcoal Rocket

