



Aprovecho Research Center

Advanced Studies in Appropriate Technology Laboratory

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Summary of Stove Camp 2007 **Dean Still, Nordica MacCarty**

From July 16th to 20th, 25 participants joined the Aprovecho staff in the lab for the 7th annual summer stove camp. Organizations represented included the International Lifeline Fund for Darfur, CEIHD, UCB, University of Illinois Bond Research Group, Trees Water People, SEA Limited, AidAfrica, GIRA, Colorado State University, Create, and the University of Oregon. People came from India, Darfur, Mexico, Cameroon, and the US.

A good time was had by all as we camped, cooked lunch on wood burning stoves, shared information, and built and tested stoves. This year was a bit different because we did classes every day for most of the participants. I hope that folks went away feeling better informed.

I learned a lot from Dale Andreatta about heat transfer and thought that the group succeeded in writing up a more effective Controlled Cooking Test. Chris Roden and Nordica shared up to the minute Global Warming data. It was interesting to help folks design stoves for their applications. It is always a pleasure to see Paul Anderson's enthusiasm for T-LUD's! I think that his continual feed T-LUD shows a lot of promise.



Tom Miles and Paul Anderson Amaze Folks at Stove Camp

Key discussions included:

- Revising the CCT to allow for simple language and recommendations
- Global warming potentials of six common stoves, climate forcing, and black/white particles
- PEMS demonstration and training
- Combustion Class
- Emissions Monitoring Class
- Design principles, heat transfer, and combustion efficiency
- Rocket stove building
- Justa stove building, and outdoor kitchen demonstrations
- Intro to Global Warming research
- Global Warming data presentation
- TLUD Gasifiers
- Vermiculate & Clay brick making
- CCT re-write (Continued)
- Advanced Heat Transfer
- Selling Stoves Business Plan Development
- WBT Testing w/Emissions
- Institutional Stoves
- Stoves w/Chimneys

This year the continual flow of classes replaced a lot of the stove development and testing. In fact, we decided not to award the 2nd Annual Cat Pee Award since there were few contestants. Three stoves were tested under the PEMS and the results are seen in the table below:

	Continuo us TLUD	THING	Bucket Rocket with Big Wood
Fuel (g/L)	231	113	117
CO (g/L)	1.2	4.3	5.5
PM (mg/L)	63	62	165

Tom Miles happened to be in the lab when the THING was being tested. The THING is an adjustable skirt surrounding a pot (11mm gap) that only allows air to enter into the combustion zone through the one fuel entrance. The pot sits on top of a separate pot support inside the skirt. The sticks burn relatively slowly at the tips. The small gap between the skirt and the pot diminishes primary air compared to the Rocket stove. As can be seen from these single tests the THING made a relatively small amount of PM but was higher than the TLUD on CO.

We are continuing to experiment with what we now view as a continuum from gasifier to Rocket with the THING somewhere in the middle.