



ICPS - Improved Charcoal Production System (adam-retort)

The ICPS is a modern, innovative and environmentally friendly system to produce charcoal from bio mass. (low-cost retort kiln)

Advantages:

- 1) High economy and better efficiency approx. 35% to 40% (Instead of about 18% efficiency compared to the traditional systems; calculated from dry weight of the wood or the biomass).
- 2) Recycling and clean combustion of the pyrolysis gas during the 2nd phase of operation (retort-system) results in a low-emission of carbon monoxides (up to 70% less harmful emissions) during the charcoal production! The effective carbonization of the biomass takes only 12 hours.
- 3) Moderate investment costs (about ~500 Euros) and a simple construction with locally available materials.
- 4) About 3m³ of biomass (corresponding to approx. 600 to 900kg wood, coconut shells, etc., dry weight) can be converted to up to 350kg of charcoal per batch, or up to 3 batches = ~1050kg per week.
- 5) An effective ~30 hour production cycle (batch) and a simple operation of the plant result in an increased income for its operators. The right system to be used at forest projects, sustainable energy-wood plantations and charcoal makers.
- 6) Only waste and residual biomass needs to be burnt (~60kg) in a separate fire box to dry and heat the wood and initiate the carbonization process during the 1st phase. "Torrefied wood" (brown charcoal) and "wood vinegar" can also be produced with the ICPS.

For further information contact:

ADAM+PARTNER, appropriate technology + industrial design,
Box 50108, ADDIS ABEBA, ETHIOPIA, www.Biocoal.org
scda2@ymail.com

10/'04-updt:04/'011