THE BURN

Fuel Sources

All must be very dry for use

Fuel
Tree prunings
Rolled cardboard or wooden packaging
Dried stems, nut shells, corn cobs
Short or chopped sticks
Wood pellets (1-3 cm diameter)

Kindling
Twigs
Bark
Rolled cardboard

Tinder
Dry Leaves
Tissue
Paper

Fuel Sources Preparation

Gathering fuel
Select a fuel source which is:
- Easy to find
- Plentiful
- Seasoned (not freshly cut) and very dry
- Up to 3.5 cm in diameter

Preparing fuel
- If wood is too long, cut to 10 cm in length
- Dry in the sun for 1 week
- Keep covered and off the ground for drying and storage

How to tell if wood is dry enough for use?
- No smell of sap or green color under bark
- Wood is dry to touch
- Wood should have no leaves
- Kindling and leaves feel brittle
- Wood sounds hollow when tapped or rubbed
- Test burn for steady flame and no white smoke
- If available, a moisture meter reads 13% or less

Finishing the Burn

If a flame is visible above the chimney, the stove is not ready to be shut down!

- The cookstove is ready to be shut down when the flame is no longer constantly visible in the chimney (a small flame will remain in the furnace as the charcoal begins to burn to ash).
- Lift the handle to remove air control piece and chimney. Set aside on a heat-resistant surface.
- Use pliers to remove the furnace, checking that no charcoal is attached.
- Leave the fuel spacer inside the base under the biochar as it is hot.
- Push the airtight lid down on the base with gloves or a metal tool to stop the charcoal from burning.
- Leave the base to cool for 30 minutes before removing the biochar.
- The fuel spacer should be retained for the next burn.
- You now have biochar!

The cookstove creates and burns woodgas which is dangerous to breathe.

Avoid breathing smoke or exhaust even if no smoke is visible.

The cookstove should not make smoke after lighting.

Troubleshooting

- **If there is smoke during lighting the kindling may be damp**

- **If there is white smoke during cooking:**

    - The fuel may be damp
    - If it continues, close down the cookstove and use drier fuel next time

- **If there is dark smoke during cooking:**
    - There is too much primary air or not enough secondary air
    - If the flame is large, reduce primary air by shrinking the gap on the lower furnace flaps
    - If the flame is small, increase secondary air by expanding the gap on the upper furnace flaps
    - If it continues, close down the cookstove and adjust the furnace flaps before next use
    - After a few burns, you will become familiar with adjusting furnace flaps to ensure there is no smoke

- **If the flame goes out, the fuel may be too damp or the wind may have blown it out:**

    - If the fuel is damp, you could add a teaspoon of vegetable oil or a 1/2 cm cube of candle wax on top of the fuel before relighting
    - If wind blew out the flame check that all the cookstove vents are facing away from the wind or provide more shelter from the wind
    - Relight the cookstove by dropping lit tinder down the chimney or blowing through a tube onto the hot fuel. Don't touch the tube with your lips (See optional materials)

Tips

The Build

- To puncture the can, press firmly with the tin snips and twist back and forth for several minutes. The metal will give way, it will not 'pop'

- To start a round cut, first puncture the can in the middle of the area to be cut

- Check the 3 flaps on the air control piece. They should not flare out but follow the curve of the can

The Burn

- Place sticks of fuelwood upright in the furnace

- Completely fill the furnace to start the fire.

- The flaps on the air control piece must line up with the holes of the chimney

- Check the 3 air flaps on the air control piece. They should not flare out but follow the curve of the can

Safety Tips

- Constructing and using the cookstove will take practice

- Trim off all sharp corners with tin snips

- Wind wires around the handle to avoid points that could snag clothing

- Furnace flaps may need to be adjusted to boost the flame or avoid smoke (see troubleshooting)

ADVANTAGES OF THIS COOKSTOVE

COMMON COOKSTOVES	CLIMATE RESCUE CAN COOKSTOVE SOLUTION
Cookstoves make ash	This cookstove makes biochar
Expense	Make it yourself with recycled materials and shareable hand tools
Limited cooking time and single flame	Make multiple cookstoves to have multiple flames
Vulnerable to wind	Many wind resistant features
Lighting stove can be difficult; fuel must be added frequently	Lighting stove is easy and adding extra fuel is optional
Smoke	Should be entirely smoke free after lighting