

MAKE A FIRELESS COOKER

What is this Action Sheet about?

Cook healthy and tasty food! Never burn rice or beans again! Save up to 80% of your fuel! Spend less time cooking! All this is possible with a haybox cooker, also known as a wonderbasket!

Smoky kitchens are bad for your health (See Action Sheet 57) but, as everyone knows, “there is no smoke without fire”. A fireless haybox cooker can help to make your kitchen a pleasant, safe and healthy place to be, and can be made easily and cheaply at home.



What is a haybox cooker?

A haybox cooker is a box, basket or any other container filled with insulating material. Insulating material is anything that heat doesn't pass through easily, such as hay (dried grass), papers, wood shavings, wool or dry banana leaves.

After heating the food up in the usual way, the cooking pot is placed in the haybox and covered with a pillow or lid, also filled with insulating material. The insulation around the cooking pot stops the heat from escaping, so the food in the pot stays hot and keeps on cooking.

What are the benefits?

- Haybox cookery is a convenient way to cook. You can prepare food in 15 minutes using methods you are used to, put it in the basket to continue cooking slowly and then go out and do something else. Unlike a fire, it is safe to leave it unattended
- Haybox cookery is a healthy and delicious way to cook. All the nutrients in the food are retained. It never burns the food; it makes tough meat tender and can keep food warm for a long time
- Haybox cookery is a cheap and environmentally friendly way to cook. It uses much less fuel than cooking on a fire or stove. Water is not lost during the cooking process, so it uses one quarter less water than other cooking methods

Are there any disadvantages?

- Food does take longer to cook, so preparations need to be made earlier
- It works best for cooking larger quantities, but you can use it to keep food warm for later on
- It is important to keep the insulating material dry. If it gets damp, it needs to be replaced

How can I make a haybox cooker?

Any kind of container stuffed tightly with insulating material can serve as a fireless cooker. A strong cardboard box, a wooden box, a deep drawer, or a basket can all work well. You can adapt this method to the materials you have available, then experiment and innovate to find out what suits you best.

Build your haybox to fit your largest pot. Then, if you are cooking with a smaller pot, wrap it in cloth to fill the space. Your pots will need to have handles so that they can be moved during cooking.

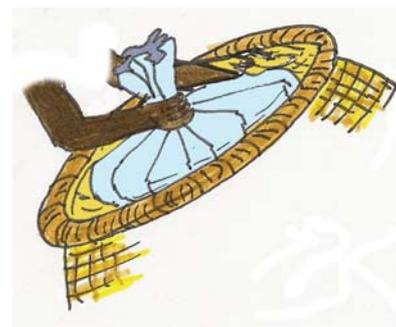
You need:

- 1 container with a lid. There must be room for **at least** 5cm of insulation around the pot; and more room for insulation on the top because heat rises!
- Black cloth (khaki, jinja, drill, or denim)
- Scissors, sewing needles and strong thread
- Insulating materials: hay, sawdust, woodshavings, and/or tightly crushed newspapers
- A flat stone roughly the same size as the bottom of the pan

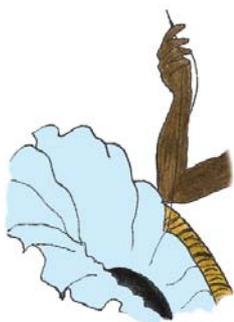
1. Fill the basket a third full with the insulating material.



2. Place the cooking pot in the centre of a piece of cloth. Collect the corners of the cloth above the centre to make a bag.

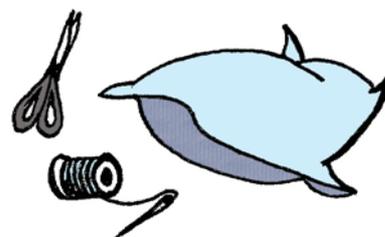


3. Place this bag inside the basket, on top of the insulating material. Firmly pack more insulating material around the bag and up to the top of the basket.



4. Open out the bag and tuck the edges of the cloth down between the insulating material and the inside of the basket. Stitch the cloth to the top rim of the basket.

5. Make a cushion which is slightly larger than the lid of the cooking pot, filled with the same insulating material.





6. Insulate the lid. Turn the lid upside down and fill it with insulating material, then cover with a piece of cloth. Tuck the edges of the cloth between the insulating material and the inside of the lid. Stitch the cloth all the way around, along the inside corner of the basket lid.

Optional extra: Add a shiny lining like aluminium foil or mylar to the pot's nest to reflect the radiant heat back into the pot. This works best when the pot fits snugly into the insulation with no air in between. This will also help keep the insulation dry, so that it does not need to be replaced as often.

How do I use my haybox cooker?

- Put in enough water to cook the food at the start of cooking
- Heat your food in the water until it boils and then let it simmer for the recommended time*
- At the same time, put the flat stone in or at the edge of the fire to heat up
- When simmering time is over, put the heated flat stone at the bottom of haybox cooker
- Put the pot on top of hot flat stone, quickly cover with the pillow and the insulated lid to stop the heat escaping, and leave to cook for the recommended time
- For more efficiency, wrap the pot with cotton cloth or polythene sheet before putting in the cooker

*Collect and share recipes for different types of food and experiment with simmering and cooking times

Approximate cooking times: Stews: 3 to 5 hours; Lentils: 1 – 3 hours

Important: All beans, especially red beans, should be boiled on a stove for at least 20 minutes before placing in the haybox cooker to ensure that the toxins are destroyed.

Haybox cookers can be used to keep food warm for eating later. However, for health reasons, meat dishes should always be reboiled before serving.

A Haybox Cooker Recipe

Simmering time: 5 minutes. Haybox time: 1 to 2 hours

3 cups rice	In your pot, fry the rice for a few minutes
4 tablespoons cooking fat	Add water and onions, cover and bring to the boil
6 cups water	Reduce heat and simmer for 5 minutes
2 onions, peeled and chopped	Place in the haybox cooker for 1 - 2 hours
2 teaspoons of salt	

Are there other ways to cook without fire?

In Chile, South America, people cook in a hole in the ground! If the soil is damp, the hole needs to be lined with a plastic bucket. Like a haybox cooker, the hole in the ground is stuffed with insulating material. After simmering, the pot is placed in the hole, on top of a heated stone, and left for several hours.

Acknowledgements: Adapted from Shimechero, U., D. Migadde, E. Willingham, C. Davey, 1989 Cooking to Conserve. An Energy Conservation Series for Upper Primary Home Science Class, Bellerive Foundation/WWF. Compiled and illustrated by Nancy Gladstone

Contacts:

Solar Cookers International
Practical Action (formerly known as ITDG)

Websites:

Haybox recipes: www.sunseedtanzania.org/HRC/Recipes.html