

WATER COMMITTEE KEREN

TRAINING WATER PASTEURIZATION WITH SOLAR COOKIT

Keren, Zoba Anseba April 2006

- For:** Solar Pasteurization Instructors (selection by Water cie Keren)
Targetgroup: Proposal: young mothers (child-birth) and babies. Decision by Water cie Keren
Planning of time: 2 workshops: 9.00 to 12.00 a.m.
Trainers: 2 Cookit experts on pasteurizing water I solar cookit
Location: Keren,.....
Dates:
- Training material:** Each person Cookitset (including 2 aluminium black painted cans)
For each Cookitset 2 WAPI's
Cookit instructions in English, Tygrinia
Yellow Cookit flyer Tygrinia

Objectives of the pilot for young mothers - babies

1. Young mothers (expecting and or having a baby) become aware and are convinced of the importance of using healthy water during child-birth, for the baby as well as for the mother herself;
2. Young mothers with babies are convinced of the importance of healthy water for baby care: washing, drinking etc.
3. In general young mothers become aware of the importance of using healthy water by drinking cold water during the day/ night;
4. Young mothers become a model for the other children and family building up the habit to always have enough healthy water ready in the aluminium black cans.

Introduction

In the November 2006 meeting of the Keren Water Committee there was common understanding that in the domestic situation the people of Keren could already benefit in a more direct way from the improvements being undertaken to the supply of drinking water as follows:

1. Safe and healthy drinking water can be obtained within the housing plot through pasteurisation of drinking water by solar energy.
 2. Transport of water in the urban areas from public water location to the home can be made easier by introducing a simple wheeled carrier.
 3. Rain water harvesting in the individual residential (house) situation
- This proposal deals with sub 1 safe and healthy drinking water for everyone.

Program for training water pasteurization instructors

Objectives training solar water pasteurization

- The trainees know all the technical aspects of pasteurizing water in a Cookit with black 2 ltr. aluminum can in a plastic heat resistant bag;
- The trainees have some background information about the importance of pasteurizing water and are aware of the advantages of making healthy water with solar energy in daily household.

Meeting 1

1. Welcome and explanation objectives Water Cie Keren and background;
2. Objectives of the training (see above) and discussion;
time and tell when water must be ready).
Give some global information, during workshop, later explain more details;

→ *Put 2 black cans with (filtered) water in Cookit into the sun*
4. General introduction:
 - Deforestation in Eritrea
 - Cultural habits and traditions around using firewood for cooking, making tea and coffee;
 - Assumptions about the use of drinking water in daily housekeeping; amounts for children, for adults, where does the water come from
 - General impression / exchange about diseases during child-birth, of babies, young children (cholera, worms, amoebae, salmonella typhi, diarrhoea, hepatitis A etc.) Also referring to information Metcalf.
 → *Observation of cookit in the sun:
amount of condense, feel heat of alum. can, watch amount of wind, if necessary place Cookit in more protected place, stones on the side).*
5. Solar water pasteurization:
 - Killing of most diarrhoea bact / viruses on temp of above 60° C (140 F), (Metcalf)
 - All pathogenic microbes will be inactivated by a temp. 65°C (149° (Metcalf)
6. Using solar energy for making healthy water (and cooking) saves environment (saves time, saves money);

→ *Observation of cookit in the sun:
condense, melting of wax, measure temp. with thermometer,*
7. Detailed information about using the Cookit for healthy water:
 - a. Technical aspects: temp. height by: reflection, attraction, saving heat of the sun;
 - b. the 2 alum. cans, thin, lightweight, only for water,
 - c. where to buy, Asmara: WINA Household 1 150383
 - d. how to paint, blackboard paint

- e. the plastic bag: material, closing, how to use, cans must be well cleaned, drying, etc.
 - f. cardboard with alum. paper, folding in and out, spoiling water, damages,
 - g. WAPI, how to use
8. After 2 hours water is ready when wax is melted.
Measure temp. with thermometer. Observe the water on cleanliness.
If it takes more time discuss the cause
Discussion of results, what needs improvement; constraints and
 9. Conclusions, questions, etc for meeting 2

Meeting 2

1. Investigation of questions about meeting 1
2. Practice: trainees put 4 Cookits in the sun with each 2 black cans;
3. Discussion about questions
More explanation about wind, rain, goats, children, damage cookits,
Etc.
4. Explanation workshops Pilotgroup Solar Cookit Healthy water;
5. Explanation and discussion evaluation form
6. Exercises folding Cookits; small presentations by trainees.
7. Observation / discussion results past. Water in Cookit after 2 hours;
4. Conclusions, appointments and general evaluation of training

BACKGROUND INFORMATION SOLAR PASTEURIZING WATER

Some preliminary observations in relation to present drinking water situation in Keren-town

- Drinking water in Keren comes from many different sources in- and outside the city limits;
- Distribution of water is through a distribution system by the Keren Water company and by individually owned wells, and by different trucking businesses;
- In general little is known about the quality of drinking water supplied from the different sources;
- Apparently women know little about the effect of water quality to their health;
- In the domestic house situation little or nothing is done to pasteurize water;
- There are no reports that pasteurized water is essential in giving childbirth and subsequent care for babies;
- There are little or no statistics about child diseases or – death as a result of using unhealthy water.

Pasteurization in the solar Cookit

There are several methods to pasteurize water by solar energy. The Cookit (see enclosures) is the cheapest and a very good way of making healthy water by solar energy.

The Cookit has already been introduced in workshops in Keren and surroundings by workshops given by NUEW. During these workshops it appeared that women do not give priority to pasteurize water in daily household.

The use of the Cookit is explained in enclosures in Tygrinia as well as in English. In these instructions a glass pot/jar with lid is proposed. Because glass pots are not available in the market, it is therefore proposed to use aluminium cans with lid in capacity of 2 litres as manufactured in Asmara (WINA. House Hold Utensils. Factory. Manager: Abrhm 'Woldemariam. Tel: 00291 1150383, fax: 002911 150448).

These cans need to be painted black by blackboard paint (available in the market – Keren or Asmara). The black can will be put in the Cookit within a heat resistant plastic bag. After 2 hours the temperature of the water is around 70°C, the water is pasteurized and healthy.

((?The costprice of the Cookitset together with two 2-liter black cans will be approx. 10 euro. The aluminium can is around 50 NF in the market. At present a complete Cookitset including a pan is sold in the market by a subsidized price of 65 NF. For the purpose of a water pasteurization project sales price in relation to this market price needs to be closely reviewed and agreed?)).