

HOMEMADE HYGIENE

How To Use Wood Charcoal and Ash for Better Health and Sanitation



WATER WELLS FOR AFRICA

www.waterwellsforafrica.org

INTRODUCTION TO CHARCOAL AND ASH HYGIENE TRAINING

Ecclesiastes 1:9

What has been will be again,
what has been done will be done again;
there is nothing new under the sun. NIV

The 2006 UN Human Development Report, released in Cape Town on November 9, 2006 stated that nearly two million children die every year caused by a growing water and sanitation crisis.

According to the report, entitled Beyond scarcity: Power, poverty and the global water crisis: 1.8 million children die from diarrhea each year that could be prevented with access to clean water and a clean toilet.

The Importance of Hygiene and Sanitation

It is clear from the endless research available today that diarrhea prevention and diarrhea treatment are top priority health issues. The mass of evidence collectively demonstrates the causal relationship between poor hygiene practices and the spread of deadly diseases.

Globally, there are nearly 1.7 billion cases of diarrheal disease every year. Among the poor and especially in developing countries, diarrhea is a global mass murderer. Annually, diarrhea kills 2.2 million people, most of whom were children under 5 years of age,

The knowledge and application of improved hygiene and sanitation practices have a measureable health benefit on the personal and community levels. Preventive strategies ultimately hold the greatest potential to reduce the global burden of diarrheal sicknesses. Knowledge of effective, low cost hygiene practices is critical to relieve the health and sanitation crisis.

Diarrhea prevention has three major hygiene and sanitation categories necessary for human progress:

1. Clean Water
2. Clean Hands
3. Clean Toilets

Yet, diarrhea is the forth obstacle to human progress that results from contaminated water, lack of soap and unsanitary toilets.

However, it is not as simple as 1, 2, 3, where there is no access to clean water, no access to soap or clean toilets. What is needed in those areas are old fashioned remedies that can be freely accessed and easily utilized by the most rural families.

The health initiatives in rural areas need to be as local and indigenous as possible.

Promotion of FREE AND INDIGENOUS measures to improve hygiene is the most significant means of preventing infectious disease. This manual will detail low tech homemade hygiene practices:

1. Free water treatment for the home
2. Free hand washing techniques
3. Free and easy ways to sanitize and deodorize toilets

The second part of the manual will discuss simple homemade treatments for wounds and diarrhea. Three of the most basic foundations for human progress can be relieved significantly by the use of common wood charcoal and ash.

1. Clean Water: With wood charcoal and sunshine
2. Clean Hands: With wood ash as a soap substitute
3. Clean Toilets: Wood ash and charcoal can sanitize and deodorize latrines and kill fly maggots

Fortunately, most diarrhea can be treated with charcoal powder and a homemade Oral Rehydration Solution. Globally, what everyone has in developing countries is wood charcoal and ash. Also, most people have access to salt and sugar necessary to make Homemade Rehydration Solution.

GOOD CHARCOAL

Good charcoal is made from any source of wood, coconut shells, bamboo, etc., and then ground into a very fine powder. Wood charcoal is simple to use and is a scientifically tested natural remedy that has many valuable uses without dangerous side effects or contraindications.

Wood ash and charcoal can be used to clean water, wash hands, deodorize pit latrines, treat flesh wounds, rashes, and diarrhea.

Numerous studies show that almost 50% of diarrheal diseases could be eliminated through proper hand washing.

Important preventive measures at the local level must include latrine covers and the use of wood charcoal and ash. Using wood charcoal in pit toilets will improve air quality. Charcoal has been proven to remediate uncomfortable, putrid and toxic air pollution. Wood ash will kill fly maggots which freely breed in open toilets. The toilet environment can be improved, healthier and more pleasant for people with consistent doses of wood charcoal and ash.

Empowerment with knowledge and the use of indigenous resources for hygienic practices will increase health, hope and happiness.

Kurt Dahlin: Redactor
Monday, April 22, 2013
Manhattan Beach, California

- http://www.undp.org.mw:80/hdr06_press_release.html
- <http://www.who.int/mediacentre/factsheets/fs330/en/index.html>
- http://www.who.int/water_sanitation_health/dwq/wsh0207/en/index2.html

The 80-page teaching manual is available for purchase at www.breakwaterfamily.com for \$10.

IMPORTANT STEPS TO PREVENT DIARRHEA

CLEAN WATER: Ensure the safety of your drinking water. Clarify water with the TRUSTED Charcoal Water Filter. Then pour water into plastic bottles and expose to the sun for 6 hours, or boil for one minute, or add 2 drops of chlorine bleach per liter and wait 30 minutes.

SAFE WATER TRANSPORT: Keep hands and fingers out of the water bucket when transporting to the home. Cover the buckets with a lid during transport and at home.

SAFE WATER STORAGE: Keep water buckets covered at home.

SAFE FOOD STORAGE: Keep flies away from food and utensils.

FOOD PREPARATION: Wash, peel or cook all foods.

DISPOSE OF FECES: All feces CARRY disease, including those of infants and young children. All feces should be properly disposed of in a latrine or toilet or buried 30 cm deep. Keep all feces 30 meters from water sources.

NO TOILET: Adults and children should defecate away from houses, paths, water supplies and places where children play. Feces should then be buried under a 30cm layer of soil.

HUMAN AND ANIMAL FECES: Should be kept out of and away from all water sources.

HAND WASHING: If soap is not available, ash and water can be used as a substitute.

CLEAN DISHES: Wash with soap or charcoal and ash as a substitute.

LATRINE HYGIENE: Keep sanitized and deodorized with ash and charcoal. Cover opening, kill maggots with boiling water.

FLY CONTROL: Flies spread infections and disease. Flies live, eat and breed in feces. Flies should be kept away from food, water, dishes and wounds. Keep flies from breeding in toilets.
















STOP FLIES: Bury, burn or safely dispose of all garbage and animal remains to stop flies from breeding and spreading disease.

BREASTFEEDING: Is healthy.

DISINFECT: Wash with soap or ash the places touched by feces.



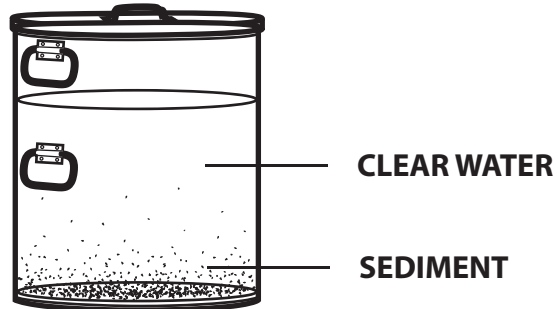
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STEPS TO SAFE WATER

SETTLE

ALLOW WATER TO SIT LONG ENOUGH FOR DEBRIS TO SETTLE TO THE BOTTOM.

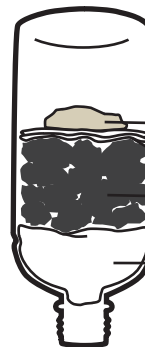


FILTER REMOVE PARTICLES FROM WATER BY POURING IT THROUGH A CLOTH FILTER OR A TRUSTED WATER FILTER.



CLOTH FILTER

FOLD CLOTH FOUR TIMES AND POUR SETTLED WATER THROUGH CLOTH.



TRUSTED FILTER

SMALL ROCK
CLOTH
CHARCOAL
COTTON OR CLOTH

SANITIZE USE ONE OF THE FOLLOWING METHODS TO KILL THE VIRUSES AND BACTERIA IN THE WATER MAKING IT SAFE TO DRINK.



BLEACH

Add 2 drops of bleach per liter of filtered water, shake bottle, and wait 30 minutes before drinking.



SUNLIGHT

Using clear plastic bottles, expose water to direct sunlight for at least 6 hours, or for two days in very cloudy conditions.



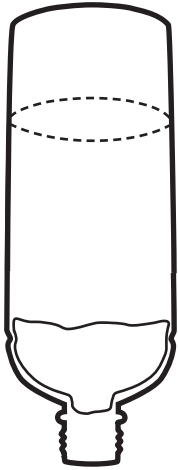
BOIL

Boil water for 1 minute.

More info: waterwellsforafrica.org



How to Make a **TRUSTED** Water Filter



1 Cut the bottom off a plastic bottle. Turn it over to make a funnel. Place about 2 inches of cotton or cloth into the neck of the bottle to keep the charcoal from falling through.



2 Crunch up common wood charcoal into pea size gravel. Do not turn into powder. Wash off the white ash and put about 3 inches into the two liter plastic bottle.



3 Put a piece of cloth or more cotton to hold the charcoal down and to screen out larger debris.



4 A small clean rock can be used to keep the charcoal from floating.



5 Pour your dirty water in here. Wait for it to filter through the charcoal. The charcoal can be used until it no longer cleans the water sufficiently.



6 This clean looking water will still contain bacteria and viruses. Put the charcoal filtered water into clean, clear plastic bottles and leave in a sunny location all day. The charcoal filter and the solar radiation means your water can be **TRUSTED**.

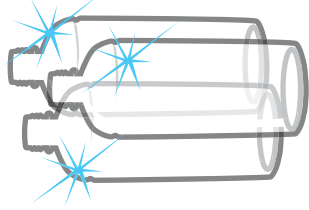


For more information visit www.waterwellsforafrica.org

Note: See directions for sanitizing the TRUSTED filtered water using either the SODIS method or the chlorine method.

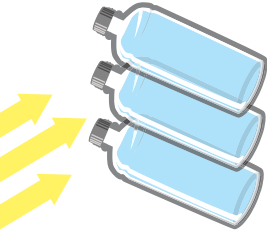
TRUSTED Water Disinfection Using Solar Power (The SODIS Method)

Turbid (clouded) water must first be filtered in order for the SODIS method to be effective. Please refer to the TRUSTED Water Filtration directions.



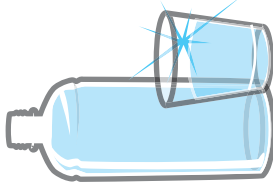
1

Use clear, washed plastic bottles. Remove any labels. Fill with water and replace caps.



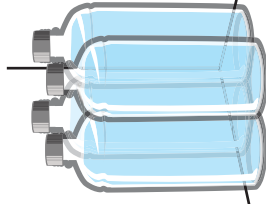
2

Expose bottles to direct sunlight for at least 6 hours, or for two days under very cloudy conditions.



3

The water is now safe to drink directly from the bottles or from clean cups.



4

Store water in SODIS bottles.

TRUSTED Water Disinfection Using Chlorine

Adding 2 drops of bleach per liter or 8 drops per gallon of filtered water will kill most harmful bacteria and viruses.



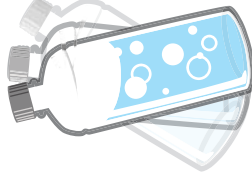
1

Use only unscented liquid household bleach, with a concentration of 5-6% chlorine.



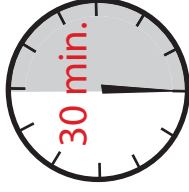
2

Add 2 drops of bleach per liter of filtered water (8 drops per gallon). If water is cloudy, 4 drops per liter (16 drops per gallon) may be used.



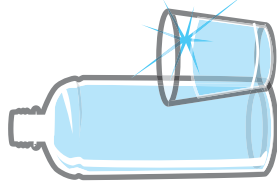
3

Replace cap and shake well.



4

Wait at least 30 minutes to allow the chlorine to kill the viruses and bacteria.



5

Drink from clean cups or directly from the bottle.



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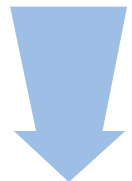
For more information on the SODIS method, please go to www.sodis.ch



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For more information on the chlorine disinfection method, please go to: www.cdc.gov/healthywater/emergency/safe_water/personal.html

COVER DRINKING WATER



More info: waterwellsforafrica.org

HAND WASHING



WHEN TO WASH YOUR HANDS

Before, during, and after preparing food

Before eating food

Before and after caring for a sick person

Before and after treating a cut or wound

After using the toilet

After changing diapers

After cleaning a child who has used the toilet

After blowing your nose, coughing, or sneezing

After touching an animal

After touching animal waste

After touching garbage

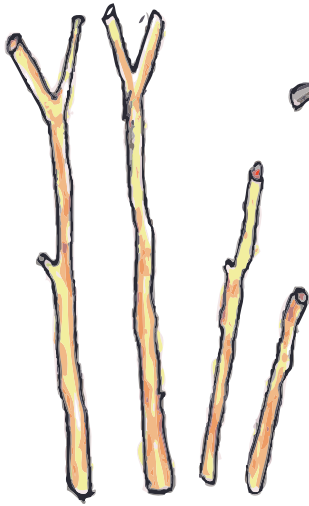
CHARCOAL TOOTHPASTE

Charcoal may be used as a toothpaste. Grind charcoal into a powder and mix with water to create a paste. Use daily.

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HOW TO MAKE A TIPPY TAP



2M FORKED STICKS X2
1M STRAIGHT STICKS X2



TOOLS TO DIG



WATER CONTAINER

GRAVEL



SOAP

2 PIECES OF STRING

NAIL & CANDLE



1. DIG TWO HOLES 18IN DEEP AND ABOUT 2FT APART

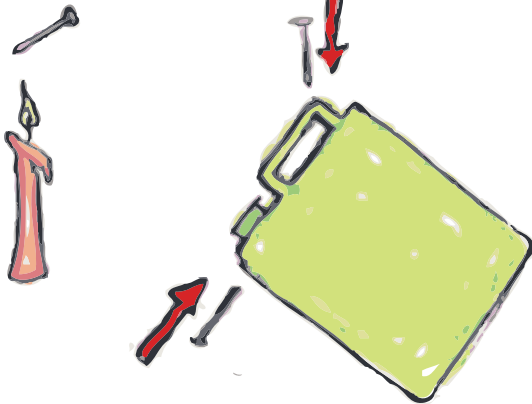
OIL BOTTOM OF STICKS TO PREVENT TERMITES



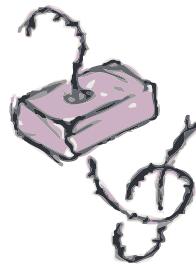
2. PLACE THE FORKED STICKS, ENSURE THEY ARE LEVEL



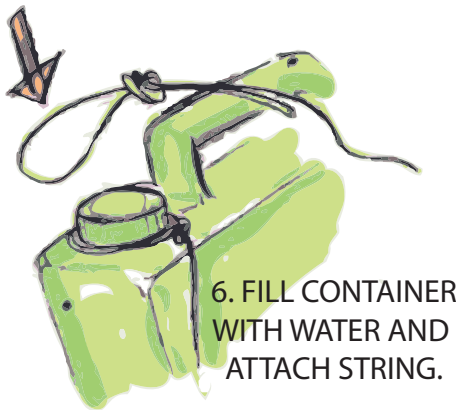
3. FILL HOLES WITH SOIL & ROCKS, AND PACK TIGHTLY



4. MAKE A HOLE IN THE SOAP AND THREAD STRING

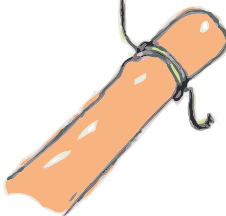


5. HANG CONTAINER AND SOAP ON CROSS STICK



6. FILL CONTAINER WITH WATER AND ATTACH STRING.

7. ATTACH OTHER END OF STRING TO FOOT LEVER STICK



8. MAKE GRAVEL BASIN BETWEEN STICKS TO PREVENT MUDDY AREA



WOOD ASH AND WATER SOAP

If you have wood ash and grease in your dirty pans then you can make soap!

BEFORE YOU BEGIN:

Ash must not contain residue from plastic, food, or trash.

Wash your dishes away from your water source.

The mixture of water, ash and grease will create a crude soap.

TO MAKE THE SOAP:

1. Add wood ash and coals into a greasy pot.
2. Add just enough hot water to make a paste.
3. Smear it over your utensils and dishes and let it set for a few minutes.
4. Scrub your utensils and dishes.
5. Ash by itself works great to wash hands and dishes.
5. Rinse everything and your hands with clean water.
6. Keep your dishes dry and clean.

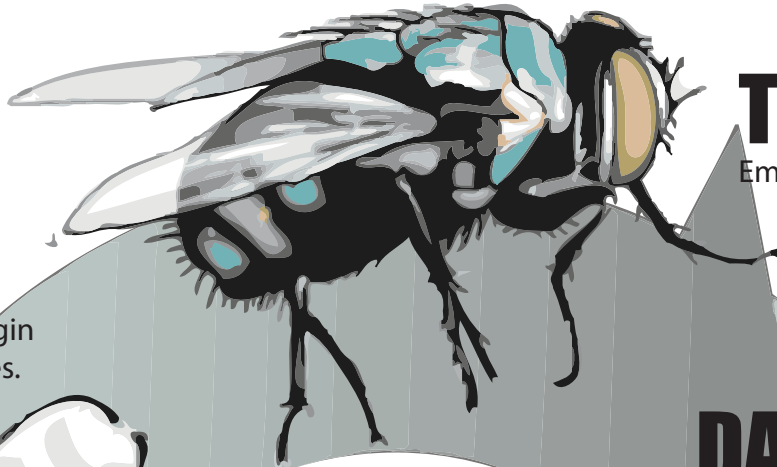


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THE LIFE CYCLE OF A BLOWFLY

DAYS 8-9

Maggots form a hard cocoon like shell and begin developing adult features.

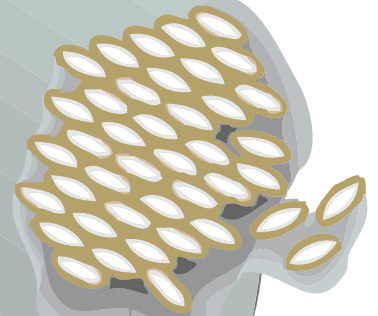


TWO WEEKS

Emergence of adult fly.

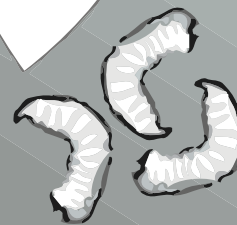
DAY 1

Adult fly lays up to 2000 eggs.



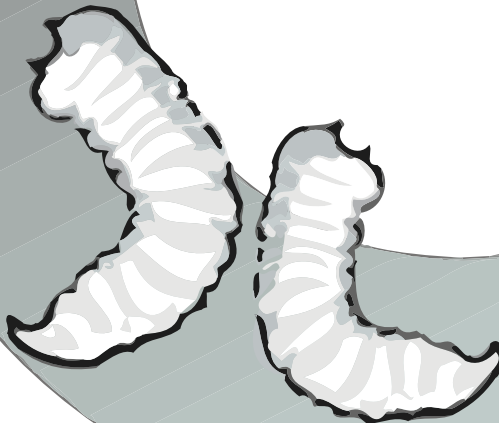
DAY 2

Eggs hatch and maggots emerge.



DAYS 3-7

Maggots feed and grow.



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FLIES CARRY 100 DISEASES

Flies carry bacteria and viruses on their feet, body hairs, and mouths. The blow flies do not transmit diseases by biting but by transferring pathogens where they land to feed or even to rest. These deadly organisms are frequently vomited onto food when the fly attempts to liquefy it for ingestion. Fly defecation, seen as specks on surfaces visited by flies, also transmits disease causing germs.

CHOLERA- violent diarrhea with "rice-water stools", vomiting, muscle cramps, dehydration, gastric pain. Death can occur as quickly as a few hours after onset of symptoms.

DYSENTERY- severe diarrhea, inflammation, passage of blood and mucus in stool

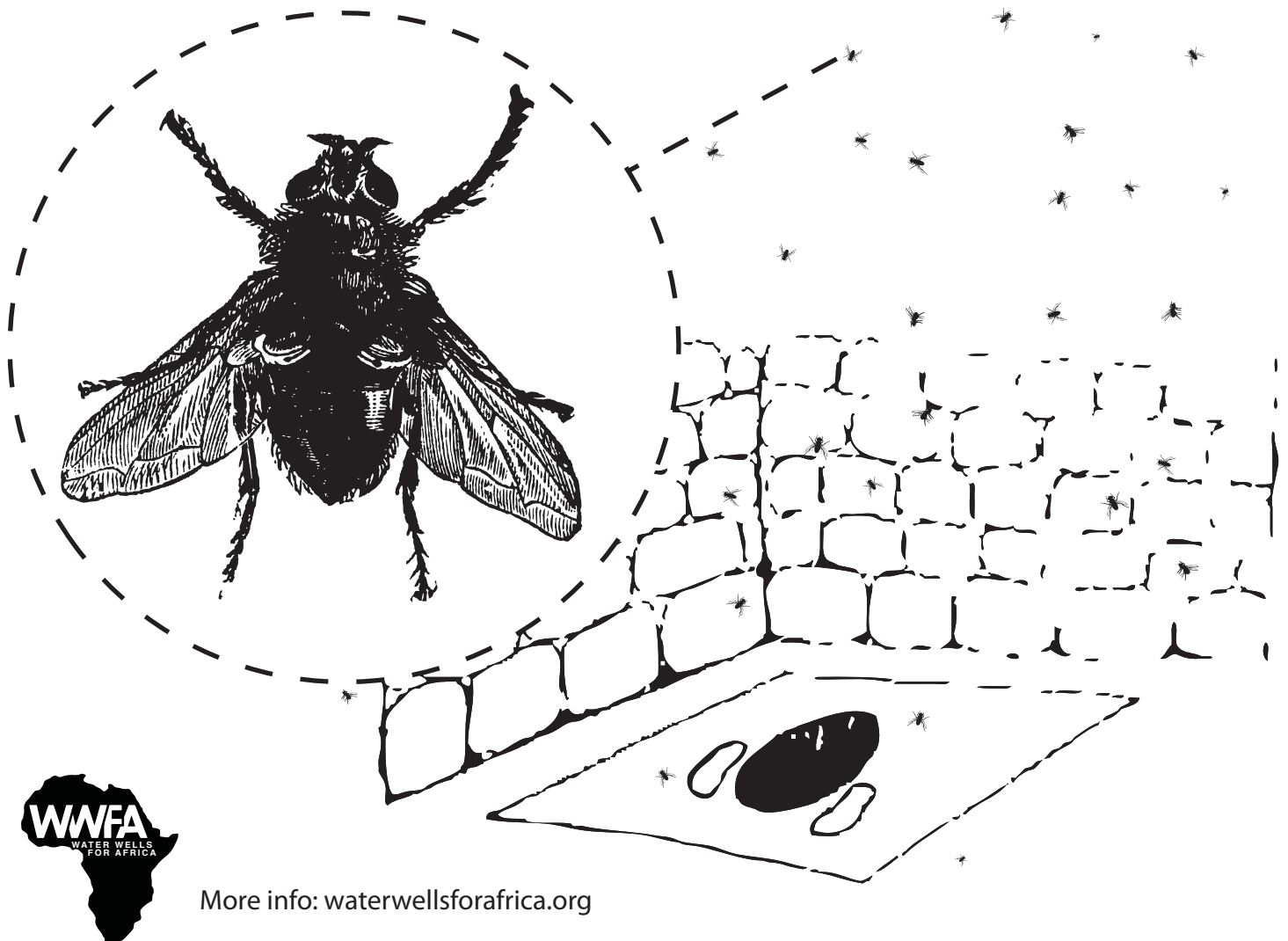
TYPHOID- fever, severe abdominal pain, intestinal bleeding

ANTHRAX- nausea, vomiting, abdominal pain, severe diarrhea.

PARASITIC WORMS- Keep your wounds covered. Do not let flies touch your wounds. Flies lay their eggs on living animals and maggots feed on the healthy tissue.

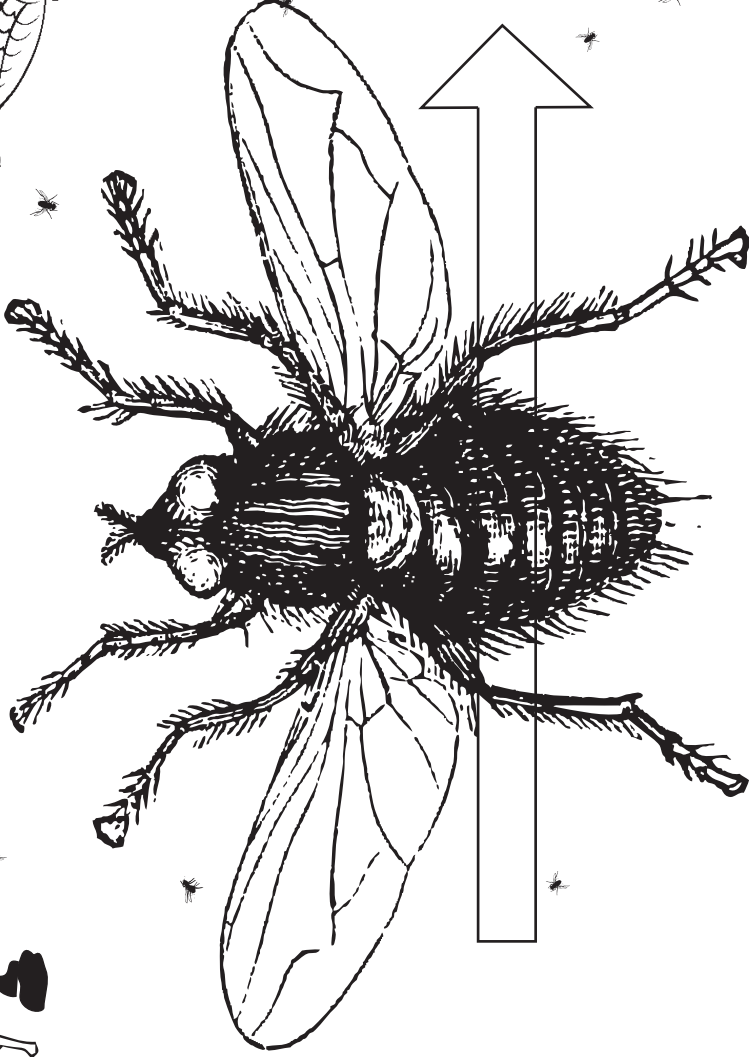
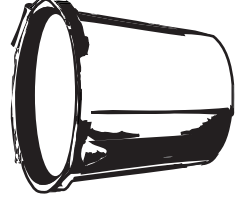
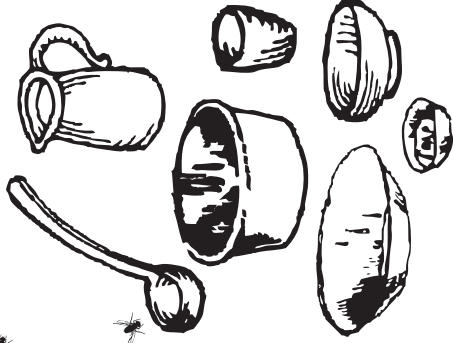
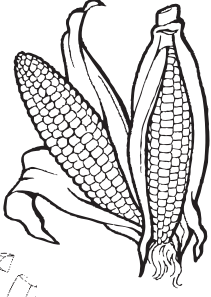
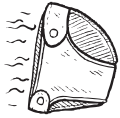
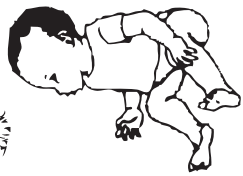
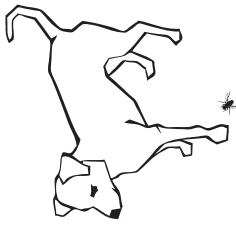
FOOD POISONING- nausea, abdominal and stomach cramps, vomiting, and diarrhea.

E. COLI 0157- diarrhea, chills, headaches, and high fever.

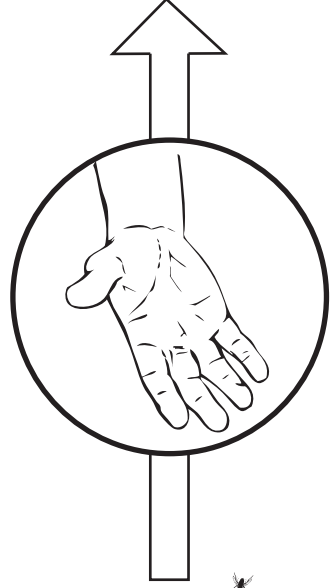


More info: waterwellsforafrica.org

FECAL



TRANSMISSION



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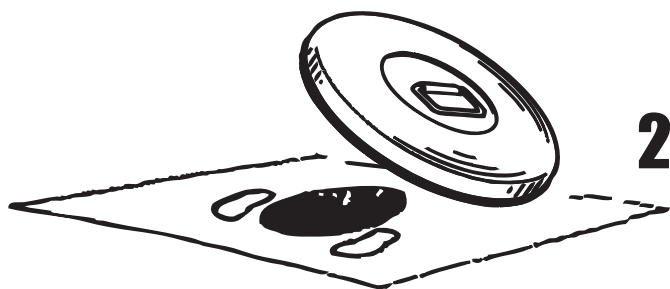
FLY CONTROL

ELIMINATE FLY BREEDING SITES

1. PROPERLY DISPOSE OF FLY FOOD SOURCES:

**BURY AT LEAST 30cm DEEP AND
30 METERS FROM WATER SOURCES**

- **DEAD ANIMALS**
- **FECAL WASTE**
- **GARBAGE**



2. COVER LATRINE OPENINGS

**3. COVER FOOD AND
DRINKING WATER**

**4. KILL FLY MAGGOTS
IN LATRINES**



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HOW TO KILL MAGGOTS IN A LATRINE

1. BOILING WATER

2. ASH AND CHARCOAL

3. AMMONIA

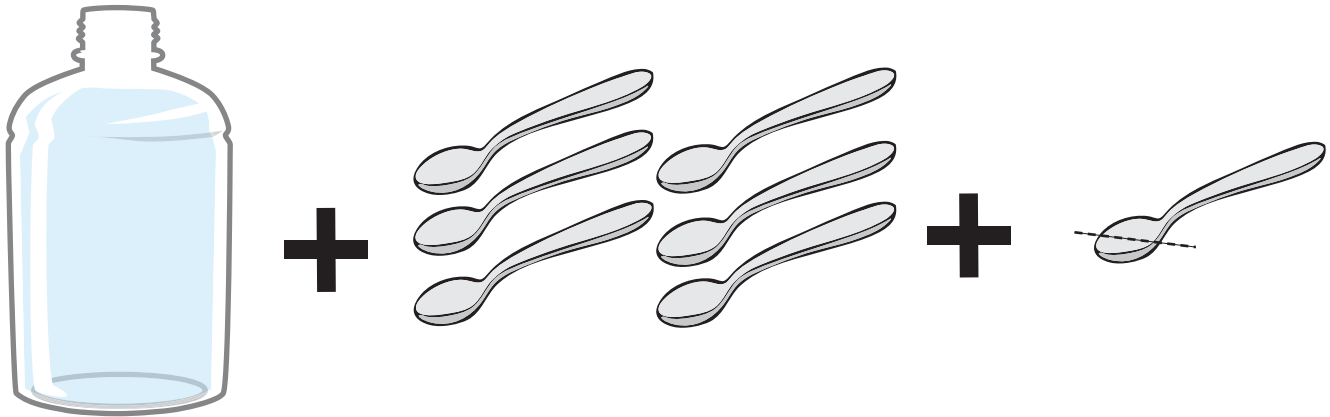
4. SALT

5. VINEGAR



More info: waterwellsforafrica.org

HOMEMADE REHYDRATION SOLUTION: HRS



1 LITER WATER

6 TEASPOONS SUGAR

1/2 TEASPOON SALT

The best treatment for dehydration due to diarrhea is to drink lots of clean water mixed with a proper blend of sugar and salt which can be prepared safely at home.

Mix the following ingredients until dissolved:

6 level teaspoons of sugar

1/2 (half) level teaspoon of salt

One liter of CLEAN DRINKING WATER*

***IMPORTANT:** If there is a possibility the water is not clean and safe to drink, it should be filtered with the TRUSTED Water filter. Then sanitized either by boiling for one minute **or** by adding 2 drops of chlorine bleach per liter **or** placed in a clear bottle in full sunlight for one day.

Be very careful to mix the correct amounts.

Too much sugar can make the diarrhea worse.

Too much salt can be extremely harmful to the person. Making the mixture a little too diluted (with more than 1 liter of clean water) is not harmful.

Taste before drinking.

If it is very salty throw it away and start making the drink again.
A rough guide to the amount of salt is that the HRS drink should taste no saltier than tears.

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DRINKING THE REHYDRATION SOLUTION

MIX:

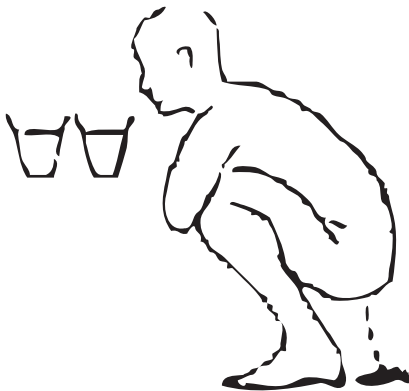
1 LITER CLEAN WATER

6 TEASPOONS SUGAR

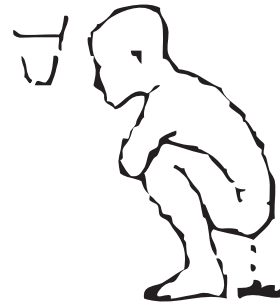
1/2 TEASPOON SALT



Drink the sugar, salt and water slowly.



MEN AND WOMEN must drink 2 glasses after every diarrhea stool.



CHILDREN must drink 1 glass after every diarrhea stool.

More info: waterwellsforafrica.org

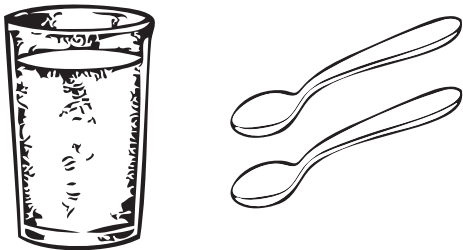


HOW TO TREAT DIARRHEA WITH HRS AND CHARCOAL POWDER

USE CHARCOAL POWDER TO RELIEVE SYMPTOMS OF DIARRHEA AND DEHYDRATION CAUSED BY FOOD POISONING, CHOLERA, DYSENTERY, ETC. CHARCOAL POWDER WORKS AMAZINGLY WELL TO REMOVE TOXINS AND POISONS FROM THE STOMACH.

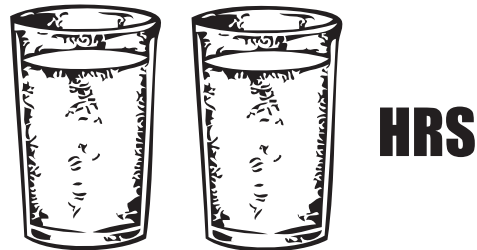
FIRST:

ADD 1-2 TABLESPOONS OF CHARCOAL POWDER TO A CUP OF CLEAN WATER, STIR, AND SWALLOW.



SECOND:

FOLLOW THE CHARCOAL WATER WITH 2 GLASSES OF HRS (SUGAR, SALT AND WATER SOLUTION).



TO CONTROL SEVERE DIARRHEA: CHARCOAL SOLUTION MAY BE TAKEN UP TO 4 TIMES A DAY OR AFTER EACH LOOSE OR WATERY STOOL.

MEDICINE AND VITAMINS CAN BE ABSORBED BY CHARCOAL. DRINK THE CHARCOAL WATER 2 HOURS BEFORE OR AFTER TAKING ANY SUPPLEMENTS.

THERE IS NO REMEDY SO UNIVERSAL, SO ECONOMICAL, SO FREE OF ADVERSE SIDE EFFECTS, AND SO EFFECTIVE IN HELPING CONTROL DIARRHEA AS CHARCOAL.

DAILY DOSAGES:

GENERAL HEALTH- 1 TBSP./8 OZ. GLASS-PURE WATER (1-3 TIMES/DAY)

MILD ILLNESS - 1 TBSP./8 OZ. GLASS-PURE WATER (4-7 TIMES/DAY)

SERIOUS ILLNESS - 1 TBSP./8 OZ. GLASS-PURE WATER (8-12 TIMES/DAY)

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MAKING A CHARCOAL POULTICE

SIMPLE

1. Mix charcoal powder with a little water to form a wet paste. It should be moist but not crumbly or drippy.
2. Wrap the paste in a clean cloth or put in a sock and place on the wound for 2-4 hours. Keep moist. Change and re-apply.

BETTER

1. Mix the charcoal powder and flour in equal parts. Make enough to cover the area to be treated.
2. Add enough water to make a thick paste, moist but not crumbly or drippy.
3. Spread the paste evenly over an appropriate size cloth or paper towel, which will cover the wound or area to be treated.
4. Cover the paste with a second cloth or paper towel.
5. Position poultice over the area to be treated.
6. Cover the poultice with plastic (if available, plastic food wrap or a plastic bag works fine). Cut the plastic wrap to overlap the poultice by an inch on every side. This will keep it from drying out. If the charcoal dries out, it will not be able to adsorb the toxins.
7. Finish off by bandaging or taping the poultice securely in place. Leave it on from 2-4 hours, if applied during the day. Or better yet, leave it on overnight. After 6 to 10 hours another poultice can be applied.

Note: Poultices of any kind only work if there is continuous moist contact with the skin. If there is no plastic wrap available be sure to periodically apply some water to keep it moist.

More info: waterwellsforafrica.org



FILTER WATER



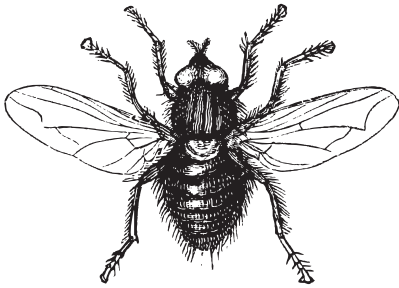
COVER WATER



WASH HANDS



CONTROL FLIES



BURY FECES



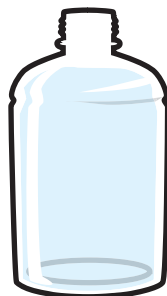
KILL MAGGOTS



COVER LATRINE



REHYDRATE



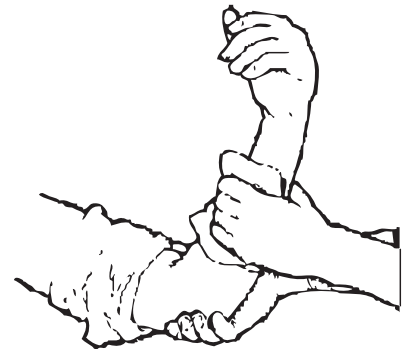
HRS

1 L WATER

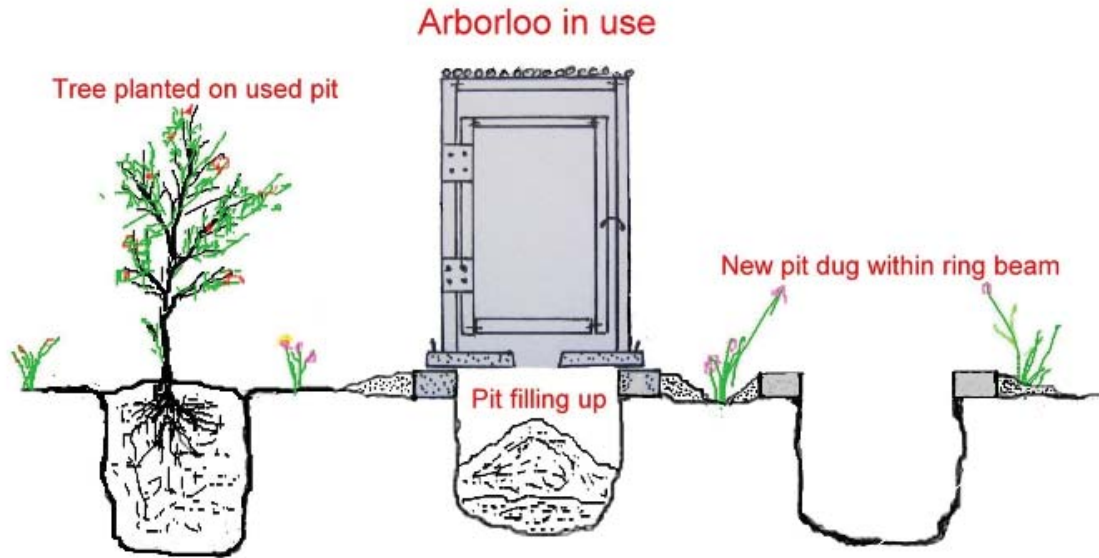
6 TSP SUGAR

1/2 TSP SALT

POULTICE



THE ARBORLOO: THE SIMPLE SINGLE PIT COMPOST TOILET



THE TOILET TREE

1. Dig a shallow pit about 1-1.5 m deep.
2. Build a typical privacy structure over the pit.
3. Simply add soil, ash, charcoal and leaves to the pit after each use.

HOW TO MAKE YOUR OWN FERTILIZER

1. Dry leaves are added to the pit toilet before each use.
2. The family uses the toilet.
3. Add a cup of soil, and some ash and charcoal after each use.
4. Add more dry leaves.
5. When the toilet is three quarters full which usually takes between six and twelve months for a medium sized family, a 15cm layer of soil is added to the pit and a tree planted on it.
6. The tree grows and utilizes the compost to produce large fruits.
7. Move the toilet to a new pit and do it again.

- Most trees will grow well on an Arborloo pit if well cared for.
- They must be protected from animals and must be watered often.
- If the tree dies, plant another.
- Space the tree sites to suit the type of tree.

More info: waterwellsforafrica.org

