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EXPERIENCE

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Solar water disinfection - the SODIS method



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Summary

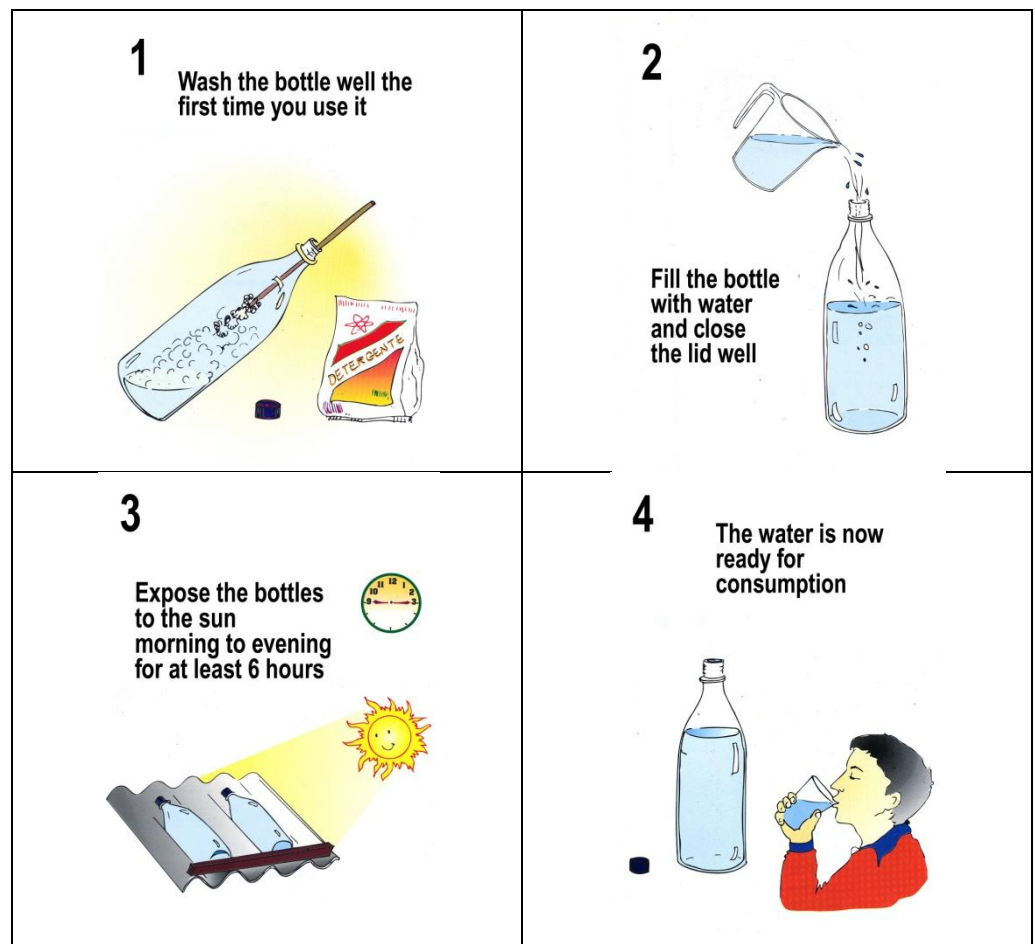
Solar water disinfection - the SODIS method - is a simple procedure to disinfect drinking water. Contaminated water is filled in a transparent PET-bottle or glass bottle and exposed to the sun for 6 hours. During this time, the UV-radiation of the sun kills diarrhoea generating pathogens. The SODIS-method helps to prevent diarrhoea and thereby is saving lives of people. This is urgently necessary as still more than 4000 children die every day from the consequences of diarrhoea.

Objectives :

The **SODIS** method is a simple procedure to disinfect drinking water. It helps to prevent diarrhoea and thereby is saving lives of many people.

Methodology :

Contaminated water is filled into a transparent PET-bottle or glass bottle and exposed to the sun for at least 6 hours. During this time, the UV-radiation of the sun kills diarrhoea generating pathogens.



Important points to consider when applying the SODIS method

Material, colour and shape of the bottle

We recommend using PET bottles in the application of the SODIS method because they are light and do not break. They are also easy to obtain in many regions. However, glass bottles or special bags can also be used.

The bottles must be transparent and colourless. PET bottles often have a bluish tinge. Such bottles with a bluish tinge can also be used for SODIS. Heavily scratched bottles must be replaced. The bottles must not hold more than 3 litres.

Turbidity

If the water is very turbid, the effectiveness of the method is reduced. Test to determine whether the water is sufficiently clear:

The filled PET bottle must be placed on top of a newspaper headline. Now one must look at the bottom of the bottle from the neck at the top and through the water. If the letters of the headline are readable, the water can be used. If the letters are not readable, the water is too turbid (more than 30 NTU) and must be filtered first.

Weather

Clouds shield off solar radiation and therewith reduce the effectiveness of the method. Rule of thumb:

- If less than half of the sky is clouded, 6 hours of solar exposure will be enough to completely disinfect the water.
- If more than half of the sky is covered with clouds, the bottle must be placed in the sun for 2 consecutive days.

The method does not work satisfactorily during lengthy periods of rain. On these days, we recommend collecting rainwater.

Preventing recontamination

The treated water should be kept in the bottle and drunk directly from the bottle, or poured into a clean cup or glass immediately before it is drunk. In this way, it is possible to prevent the treated water from becoming contaminated again.

Results :

The SODIS method kills bacteria, viruses and most of the parasites. Thereby, diseases such as diarrhoea, dysentery, cholera, typhus or polio can be prevented.

More than 4 million people in over 30 countries clean their drinking water with the SODIS method. Currently, SODIS is running project in 24 countries in Africa, Asia and Latin America.

Sources :

www.sodis.ch