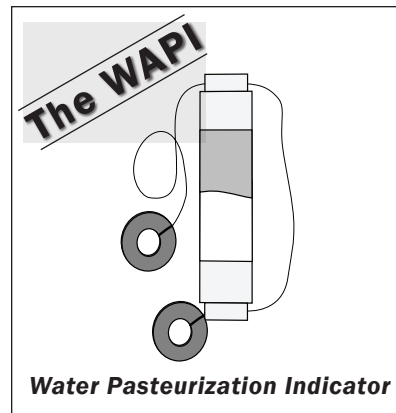


Disease-causing organisms in water are killed by exposure to heat in a process known as pasteurization. Boiling is often recommended to achieve pasteurization. However, contaminated water can be pasteurized at temperatures well below boiling, saving time and fuel. Water heated to 149°F (65°C) for a short period of time is free from microbes, including E. coli, Rotaviruses, Giardia and the Hepatitis A virus.



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Solar Cookers International's reusable Water Pasteurization Indicator (WAPI) is a simple, low-cost device containing a temperature-sensitive wax that helps users determine when water has reached pasteurization temperatures.

### The importance of pasteurization

Water-related diseases are responsible for 80% of all illnesses and deaths in the developing world. Children are especially susceptible. An estimated 1.5 billion cases of diarrhea occur each year, resulting in the death of nearly 2 million children. Worldwide, about 1.3 billion people do not have access to safe drinking water, including nearly half the population of sub-Saharan Africa.

### Solar water pasteurization

WAPIs work well in solar cookers. With good sunlight, simple solar cookers like SCI's "CooKit" and solar box cookers can pasteurize water at a rate of about one liter per hour.

**Safety Notice:** Pasteurization does not remove dangerous chemicals, like arsenic. Pasteurization is not the same as sterilization, a process whereby everything, including heat-resistant spores, is killed. The heat-resistant spores that survive pasteurization are harmless to drink. Where sterilized liquids are needed — in hospitals and in certain food canning processes, for example — high temperatures are achieved using special pressure cookers.



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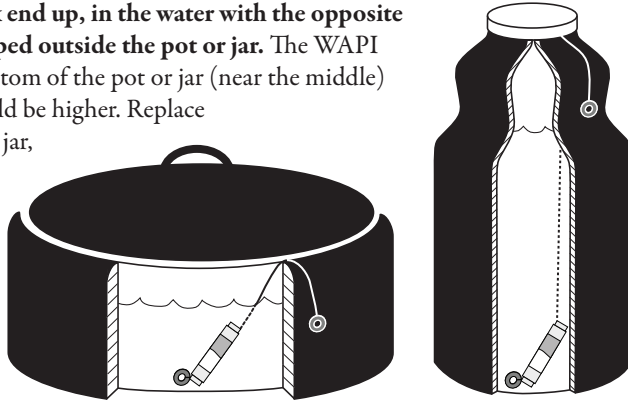
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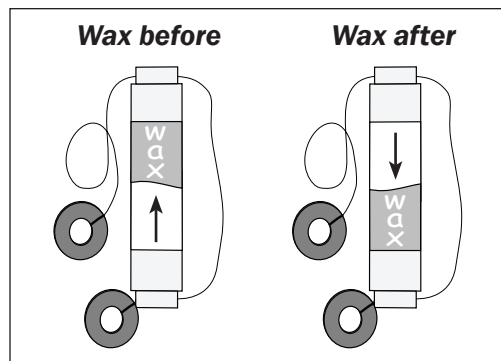
## SOLAR PASTEURIZATION INSTRUCTIONS

1. **Pour water into a black pot or jar.** Thin metal pots are ideal. If necessary, pots and lids may be painted black on the *outside* with flat, nontoxic latex paint. Glass jars, painted black on the outside, also work well. Tip: place a vertical strip of tape on the jar before painting, then remove the tape, leaving a space through which to view the WAPI.
2. **Slide the WAPI to the end of the string so that the wax end is furthest from the washer.**
3. **Place the WAPI, wax end up, in the water with the opposite end of the string draped outside the pot or jar.** The WAPI should rest on the bottom of the pot or jar (near the middle) and the wax end should be higher. Replace the lid. If using a glass jar, the lid should have a small hole in it or be loosely screwed on to release steam pressure.
4. **Orient the solar cooker as you would for cooking.**  
In general, face your cooker easterly in the morning and westerly in the afternoon.



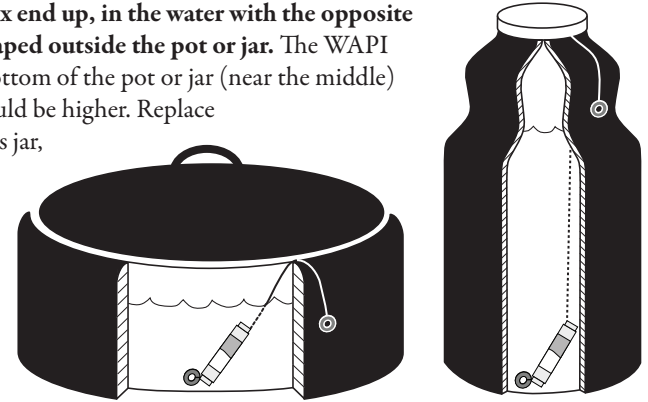
5. **Set the pot or jar in the cooker.** If using a panel-type solar cooker, such as the CookIt, you can speed pasteurization by placing the pot or jar inside a clear, heat-resistant plastic bag. Though a plastic bag is required for cooking in this type of cooker, it is often not necessary for pasteurizing.
6. **Leave the cooker in a sunny place for a number of hours, reorienting if necessary.** Allow at least one hour per liter of water.
7. **When the WAPI wax melts and falls to the bottom of the WAPI, the water has been pasteurized.** Even if the water has cooled by the time you check it, as long as the wax is at the bottom of the WAPI then pasteurization has occurred.
8. **Allow the water to cool before drinking.**

*Keep water covered until use to prevent recontamination. Don't let fingers or unclean objects touch clean water. If you aren't sure, re-pasteurize water.*



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