SOLAR STILL **Emergency Survival Tool**

Fortunately, there is an emergency survival technique for gathering water from our driest deserts during their most brutal seasons. It is commonly known as the Solar Still. One of the most significant survival tools created in the last 40 years. the Solar Still was developed by two physicians working for the U.S. Department of Agriculture. Results of extensive testing in the Arizona deserts by the U.S. Air Force proved that when properly assembled, the still can save your life.

The Solar Still functions under the general principle of the "greenhouse effect". Solar energy heats the ground by passing through a clear plastic barrier. Moisture from the soil then evaporates, rises and condenses on the underside of the plastic barrier above.

The still also has the ability to purify tainted water. In fact, it condenses pure water from just about anything. Even urine will produce clean, drinkable water. (CAUTION: One fluid never to be used is radiator fluid, as its toxins will vaporize and poison the water.)

Materials

There are only 2 essential components to constructing the Solar Still -- a container to catch the water and a 6 x 6-footsheet of clear plastic. A shovel or trowel, a length of plastic tube and tape are all optional.

The container can be a collapsible cup, an empty plastic bottle, a small cooking pot or just about anything with a large enough opening to catch falling drops of water. In a pinch, even tin foil or a sandwich bag can be fashioned into a workable receptacle.

The sheet of clear plastic can be a ground cloth used under tents when backpacking or a thin painting drop cloth. Both work well as long as there are no tears or holes. This is the one item that should be carried at all times, since there is no natural substitute out in the boonies. I keep a 6 x 12-foot plastic drop cloth taped inside my daypack, large enough to make 2 stills if necessary. Some desert rats like to keep their plastic sheets folded inside a hip sack or as part of their first-aid kits.

A 6-foot length of flexible plastic tubing, similar to the kind used in fish tanks is a non-essential but desirable addition to the still components. This will allow you to drink accumulated water without needing to break down the solar still, inevitably affecting its efficiency.

Construction

The best part of this life-saving device is that for something that collects water from seemingly nothing, the solar still is amazingly simple to build. Here's how:

1. Dig a pit approximately 4 feet wide and 3 feet deep. Use a shovel, hand trowel, a digging stick or even your hands in soft soil or sand. Look for a sandy wash or a depression where rainwater might collect.

2. . In the center of the pit, dig another small hole deep enough for the water container.

3. Place the container inside, then run the tubing from the container to the outside of the pit. If there is tape available, tape the tubing to the inside of the container.

4. Blanket the pit with the plastic sheet, evenly on all sides, but not touching the bottom of the pit. Anchor the corners with rocks.

5. Find a small rounded rock to place in the center of the sheet, over the water container. This will keep the plastic centered and control any flapping from the wind. Gently push down on the center weight until the sides slope to a 45º angle. If the pit is dug deep enough, this should leave the center weight just a few inches above the water container.

6. Next, secure the edges of the plastic sheet with rocks and dirt. Make sure there are no places where moisture can escape.

7. Close the tubing end with a knot, or double it and tie it closed.

Within 2 hours, the air inside the still will become saturated with moisture and begin to condense onto the underside of the plastic sheeting. Because of the angle of the plastic, water will run down towards the center. Finally, drops will gather and fall from the apex down into the water container. As the container fills, simply sip fresh, sterile water from the plastic tubing. In especially dry conditions, water output can be increased by placing succulent plant material inside the still.

The Solar Still only takes about an hour to build. If constructed correctly, it can yield about a quart of water a day. And although the palm trees may be noticeably absent, you will have made your very own oasis in the desert, quicker than Hollywood could.