

A Long-Term Survival Guide – How To Make Your Own Refrigerator:

The Desert Fridge: This is an evaporative refrigerator that doesn't need electricity, and it costs almost nothing to make. The design consists of an earthenware pot nestled inside a larger clay pot, with a layer of damp sand packed between the two pots. Water is poured into the sand, until it is saturated, and the inner pot is filled with produce.



This is a desert fridge; two nesting pots with sand packed into the space between them.

When the "Pot-in-Pot" system is stored in a shady (and well-ventilated) place, water evaporates from the sand, the porous outer pot, and the damp cloth cover, carrying heat with it. The inner pot therefore cools down, and makes a useful refrigerator. For best results, the inner container should have a lid, to keep the cold air inside, and to deter pests. (The fridge should still be covered with damp cloth, for maximum evaporative cooling.) The only maintenance required is to refill the sand reservoir with water as it evaporates, and re-wet the cloth cover periodically.



The "Desert Fridge", in-use in the Nigerian desert.



Closeup, showing layer of sand between pots.

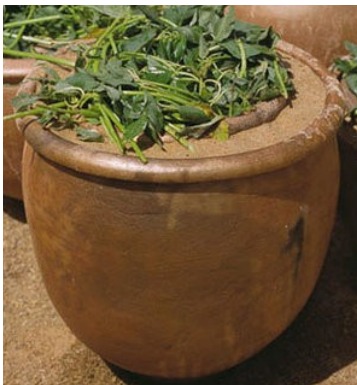


Elevating the fridge on some sort of stand allows for more air circulation, and thus better cooling.

The fridge can be made from almost any two containers where one will fit inside the other (with space for sand), such as a five-gallon bucket inside a 30 gallon barrel, so you can improvise with what you have on hand. You can use two ordinary plant pots, after plugging the drain holes with clay. The fridge should be big enough to hold a reasonable amount of food (five gallons is a good minimum), and should have enough sand to provide sufficient mass to hold water, so that it doesn't have to be refilled too often. A foot of sand is better than a layer that is only a few inches thick. The fridge can be improved by elevating it for better air circulation, using a heavy wire stand, rocks, or cinder blocks.

If you make your fridge from metal or plastic containers instead of clay pots, a thicker layer of sand between the two containers will compensate for the container walls not evaporating water like clay pots do. The wider sand layer provides more surface area for evaporation. You can make a similar fridge by lining a wooden box (or even a hole in the ground) with plastic, placing a pot in the hole, and then filling around the pot with damp sand. This design also works fairly well.

This system will work in almost any climate in the summer, even though it was designed for desert use. These pictures show the produce covered with a layer of damp cloth, but a lid on the inner pot is both more efficient, and better at protecting your food from pests.



The fridge doesn't have to be round either; many other nesting containers will work.

If there is no electricity, this fridge provides an alternative to drying foods to preserve them. Drying doesn't diminish protein or calorie content much, but things like vitamin C are likely to be in shorter supply in dried food. Also, some foods, such as spinach and onions, cannot be dried. The fridge will also preserve other foods that need refrigeration, such as meat, eggs, and dairy products. Keeping food edible as long as possible becomes very important, in long-term survival situations. Other food cooling options include using spring houses, large-diameter wells, root cellars, ice houses, and caves, as food pantries.