

Mohammed Bah Abba with his cooling pots

LOW-TECH WAY TO COOL FOOD WITHOUT REFRIGERATION

How do you keep fresh food from perishing when you have no electricity and therefore no refrigeration? Here is an innovative way developed by a Nigerian.

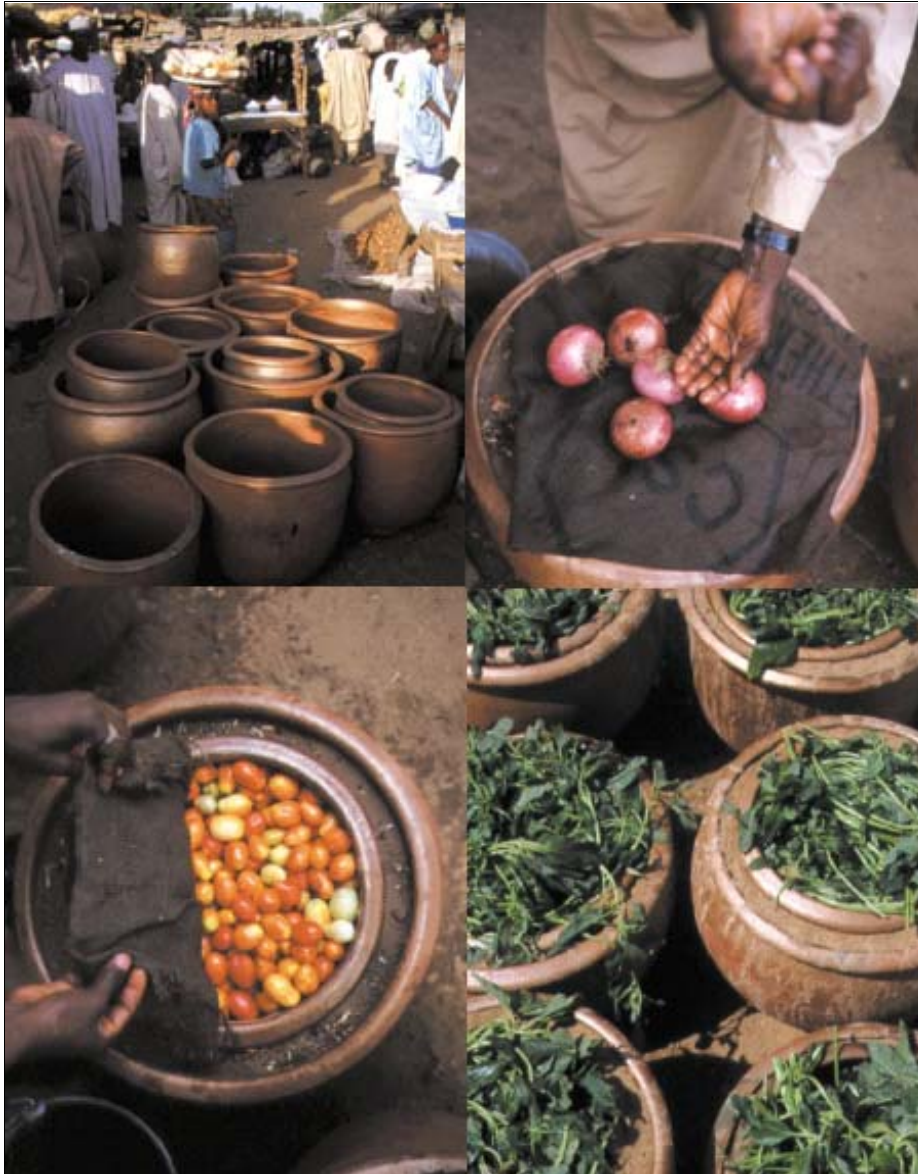
The “Pot-in-Pot” cooling device is extremely simple and inexpensive, using two clay pots with the smaller fitting inside the larger. The space between the pots is filled with wet sand that is kept constantly moist, thereby keeping both pots damp. Fruit, vegetables and even soft drinks are placed into the smaller inner pot, the entire system is covered with a damp cloth and then left in a very dry, ventilated location. It uses a simple evaporation process to lower the temperature in the inside pot, and thus works best in dry climates.

Without refrigeration, fresh foods spoil within days. A kind of “desert refrigerator”, the “Pot-in-Pot Preservation/Cooling System” keeps such perishable foods as spinach, tomatoes and onions from spoiling. Tomatoes and peppers can last for three weeks or more,

eggplants stay fresh for 27 days instead of the usual three, and spinach remains edible after 12 days instead of spoiling within a day as is normal in the hot, arid climate of Nigeria. It would obviously also prolong the life of other fruit and vegetables similarly. You might even be able to keep eggs, milk and other dairy products for a longer period of time.

The phenomenon that occurs is based on a simple principle of physics: The water contained in the sand between the two pots evaporates towards the outer surface of the larger pot where the drier outside air is circulating. By virtue of the laws of thermodynamics, the evaporation process automatically causes a drop in temperature of several degrees, cooling the inner container, destroying harmful microorganisms and preserving the perishable foods inside.

Mohammed Bah Abba from Northern Nigeria, who invented this system in 1995, was selected as a Rolex Laureate and awarded \$75,000 for his ingenious technique that requires no external energy supply.



Adapting an ancient technique to modern life, Mohammed Bah Abba has refined the “Pot-in-Pot” method of preserving fresh food by storing it in double-walled earthenware jars such as these seen in a Nigerian marketplace.