The Malian Peanut/Groundnut Sheller

ECHO Inc.

The Malian Peanut/Groundnut Sheller is a simple machine, requiring less than $10US of materials. It was developed by an engineer from North Carolina (in the United States), who visited a Peace Corps volunteer in Southern Mali. An increase in peanut cultivation was underway, to increase the protein in children's diets, improve soil fertility, and provide a cash crop. Peanuts were traditionally sun-dried, which made them more difficult to shell than if they were dried by roasting. The engineer, with the help of other individuals, invented the Malian Sheller.

It is hand operated and capable of shelling 50 kilograms of raw, sun-dried nuts per hour. It is made of concrete (poured into two simple fiberglass molds), some primitive metal parts, one wrench and any piece of rock or wood that might serve as a hammer. It accepts a wide range of nut sizes without adjustment. If necessary, adjustment is easily done in seconds. In Mali, it is estimated that one machine will serve the needs of a village of 2000 people. Traditional shelling machines press the nuts through slots to release the kernels from the shell. This works well with nuts roasted in the shell, but poorly if they are sun-dried. The Malian Sheller, however, rolls the nuts in an ever-narrowing space, between two concrete surfaces, at ever-increasing speed. The machine is loaded with about a liter of nuts. The handle is then turned quickly for about 20 seconds. The kernels and shell fragments fall into a shallow basket and are winnowed.

The life expectancy of the machine is around 25 years. Its design is public domain, and local experience will likely improve the design as time goes by. The Coastal Carolina Returned Peace Corps Volunteers offer technical assistance to non-profit groups planning to use this design in their programs (see contact information at the end of this article).

If the fiberglass technology for mold making is unavailable in your area, the Coastal Carolina Returned Peace Corps Volunteers will provide molds at cost. If fiberglass molds can be made in your area, and you wish to bypass the complex process of `plug' making, (plugs are the forms on which the fiberglass is applied), they will lend you plugs in exchange for a cash deposit. They will supply (also at cost) sample sets of metal insert pieces that can be easily copied by local welding shops. In return for this support, they ask only that you keep them posted on the progress of your projects and send them some photos of the shellers in action.



Figure 1: A picture of the Malian peanut sheller. More photos are available on the web (see web address elsewhere in this article). Photo used with permission.

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