



## Consolation award

### Areca-nut Leaf Moulding Machine

Chinnakannu Muthusami

Namakkal, Tamil Nadu

Scout: SEVA

Chinnakanu (58) owns a workshop and is involved in farming. He got introduced to machines by his father and wanted to be a mechanical engineer. Dropping out of school, he started repairing pump sets of bore wells and undertook maintenance work for two and four-wheelers.

Once while undertaking repair and maintenance of a leaf moulding machine, he realised the drawbacks of the machine. But he felt that the utility of the device was immense. He started working on developing his version of the machine. After incorporating hydraulic mechanism, the productivity improved, drudgery reduced, maintenance lowered and even females could operate it without strain. In 2001, he made the first prototype using six moulds (die) in line with the compressor and pump. From 2002 to 2004, he made four more prototypes changing the design with closed assembly. In 2012 he made the final prototype, which was compact with parallel arrangements of moulds (top and bottom).

The machine moulds leaves to make plates ranging from 4" to 12" in diameter and bowls. The assembly consists of a parallel arrangement of moulds (in pairs mounted one above the other) for reducing space, incorporating hydraulic assembly and heat regulator. The machine uses electric power and a hydraulic mechanism to mould the leaf. A 2 hp motor and pedal operate the machine to lower/lift the pressing mould and cutting bar. The heater removes moisture and thus helps maintain the quality of plates. The leaf is placed between the moulds and pressed by lifting the foot lever. The MS cutter embedded in the mould cuts the leaf equal to the size of the mould. The machine is robust and easy to operate even by unskilled labour or women. Different shapes of output can be easily obtained by changing moulds. The machine can make 1700 plates/day (8 hours). The operating cost of the machine is ₹50/h.

