

# AXIAL-FLOW BIOMASS SHREDDER\*

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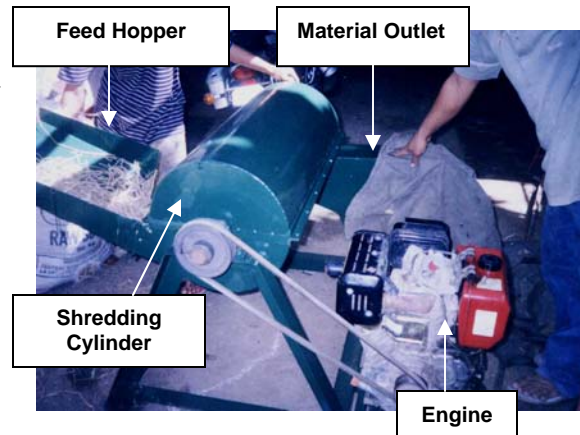
*Finely shredded compost materials can now be obtained using the newly designed and developed axial-flow biomass shredder!!!*

Good news Compost Makers! If you are facing a problem of having a finely shredded compost materials, the locally designed and developed axial-flow biomass shredder is the solution. Biomass materials such as rice straws and leguminous grasses are the common materials used in composting. The entanglement of these materials with the shredding cylinder has usually been a problem experienced. But now, this is no more a problem when you use the biomass axial-flow technology. Other biomass materials like coconut branches, leaves and husk, papaya and banana trunks and leaves, tree leaves and twigs, and other biodegradable materials can be finely shredded. Tree branches of up to two inches in diameter can also be chipped in the machine. These are



now possible because this technology applies the principle of cutting and beating actions of the knives and hammers in the shredding cylinder during the shredding process. The shredder can reduce the size of the biomass materials by 30 to 40% of its original size.

The axial-flow biomass shredder is a recent developed technology at the Department of Agricultural Engineering and Environmental Management, College of Agriculture, Central Philippine University by the group of agricultural engineering students and professor, namely, Paul Bravo, Elbert Deano, Moises Mana-ay, and Engr. Aries Roda Romallosa. The machine operates like an ordinary rice thresher. It cuts and beats the biomass material as it passes through the fast rotating cylinders of the machine.



The machine basically consists of the following general assemblies: (a) the feed hopper, where biomass materials are held before feeding into the shredding cylinder; (b) the shredding cylinder, where the biomass materials are cut into smaller pieces and then beaten to rupture the fibers; (c) the material outlet, where the shredded biomass is discharged from the machine; and (d) the engine assembly, where the prime mover and transmission drive is located.



The small model of the machine can shred biomass material at a rate of 150 to 300 kg/hour, whereas the big model can shred 800 to 1000 kg/hour. The machine only requires 5-hp engine for the small unit and 17-hp engine for the big unit. Without the engine, the small unit costs P25,000.00 and the big unit costs P80,000.00. The cost of shredding biomass is P210.00 per ton of materials for the small unit and only P90.00 per ton of materials for the big unit.

The technology is now at the commercialization stage. The different units that were recently produced are used for farm, barangay, and municipal waste management programs in Panay Island.



Interested organizations who wish to adopt this technology are advised to contact the

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