

## Designing, Manufacturing and Testing a Portable Tractor Unit Biocoal Harvester Combine of Agriculture and Animal Wastes

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**Abstract :** Biomass is a material generally produced by plants living on soil or water and their derivatives. The remains of agricultural and forest products contain biomass which is changeable into fuel. Besides, you can obtain biogas and ethanol from the charcoal produced from biomass through specific actions. this technology was designed for as a useful Native Fuel and Technology in Energy disasters Management Due to the sudden interruption of the flow of heat energy One of the problems confronted by mankind in the future is the limitations of fossil energy which necessitates production of new energies such as biomass. In order to produce biomass from the remains of the plants, different methods shall be applied considering factors like cost of production, production technology, area of requirement, speed of work easy utilization, ect. In this article we are focusing on designing a biomass briquetting portable machine. The speed of installation of the machine on a tractor is estimated as 80 MF 258. Screw press is used in designing this machine. The needed power for running this machine which is estimated as 17.4 kW is provided by the power axis of tractor. The pressing speed of the machine is considered to be 375 RPM Finally the physical and mechanical properties of the product were compared with utilized material which resulted in appropriate outcomes. This machine is designed for Gathering Raw materials of the ground by Head Section. During delivering the raw materials to Briquetting section, they Crushed, Milled & Pre Heated in Transmission section. This machine is a Combine Portable Tractor unit machine and can use all type of Agriculture, Forest & Livestock Animals Resides as Raw material to make Bio fuel. The Briquetting Section was manufactured and it successfully made bio fuel of Sawdust. Also this machine made a biofuel with Ethanol of sugarcane Wastes. This Machine is using P.T.O power source for Briquetting and Hydraulic Power Source for Pre Processing of Row Materials.

**Keywords :** biomass, briquette, screw press, sawdust, animal wastes, portable, tractors

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020