

iv. DOWNDRAFT GASIFIER FOR WATER PUMPING



A downdraft gasifier along with a gas cleaning system retrofitted with a 5 Hp diesel engine coupled with a centrifugal pump for pumping water for irrigation applications. In order to supply producer gas for running the 5 Hp engine on dual fuel mode, a 10 kg/h capacity downdraft gasifier is required. A maximum of 50 percent diesel can be saved by substituting 50 percent of diesel with the producer gas obtained from biomass. And the cost of operating the gasifier coupled water pumping system is around Rs.50/h.

v. SOLAR TUNNEL DRYER



The solar tunnel dryer is commercially used dryer for drying agro food products. Solar tunnel dryer is working based on Green House Effect principle. It results that 15-20°C increase in temperature above ambient temperature inside the solar tunnel dryer to dry the product from initial moisture to safe storage moisture. It mainly consists of semi-cylindrical tunnel structure, solar collector and cement concrete floor with absorber surface (Table 1). The semi cylindrical pipe structure covered with U.V. stabilized semi-transparent polyethylene sheet of 200-micron thickness. Drying floor with absorber