

# Studies on the Hanging Type Green Manure Seeder by Tractor<sup>1</sup>

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## Abstract

The development of tractors with green manure seeding machines is for the seed of soybean, sun hemp and sesbania to save the labor cost and enhance the efficiency of green manure seed sowing. The device, equipped on the rear part of the tractor and the front upper part of the rotary plow, can efficiently improve sowing work. There are three transmission methods: The first one is Mechanical Transmission – Use the transmission pulley at the rear wheel of the tractor to drive the main shaft of the device. The main shaft is set at different gear ratios as 15T, 18T, 21T, 24T, and 27T:16T. The seed sowing capacity can reach 20-32 kg/ha by shifting the gear ratio. The second one is Oil Hydraulic Transmission – Connect the flow control-valve with the external oil hydraulic of the tractor. The oil hydraulic motor is driven by the stepless speed control regulator to activate the device. The seed sowing capacity can reach 20-80 kg/ha. The third one is Electromechanical Transmission – The power source is the 12V/100A battery of the tractor. The DC reducing motor is driven by the stepless speed adjusting switch to activate the device. The seed sowing capacity can reach 20-80 kg/ha. When the seeds are spread, the rotary plow will start the tillage and cover the seeds with soil. In the mean time, all the processes of seed sowing, land preparing and soil covering will be done integrally. Operating time and cost required for each hectare is 1.5-2.5 hours and 5-6 thousand NT dollars, which is corresponding to a save of 50% and 2.5 thousand NT dollars. The germination rate of these crops is higher than 86% for the integrating operation of sowing and ridging of the device.

Key words : green manure, seeding machine, tractor, hanging type.

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