Tree Crop Seedling Transplanter Ver-1

Tree Crop Seedling Transplanter Ver-1 is the first available machine of its kind in the market. This transplanter is able to overcome the arduous work, labour, and cost in the field transplanting operation of tree crop seedling. This transplanter is trailed behind an agricultural tractor having at least 63.4 kW and 66.2 L/min@172.36 bar hydraulic auxiliary outlet. Its design configuration consists of a main chassis, seedling bin, seedling planting assembly, operator compartment, and associated hydraulic system. Two operators are required for the seedling transplanting operation with this mechanized system; a driver for the tractor and an operator to operate the hydraulic control system on the transplanter.

Seedling transplanter Ver-1

The transplanter is a complete integrated system capable of preparing the planting hole, placing the seedling and covering of the seedling in the prepared hole, and compacting of the soil around the planted seedling in plantation field. The fluid power from the tractor's hydraulic auxiliary is used to operate all available actuators of the functional units within the machine. With oil palm seedlings, this mechanized system gives a planting capacity of 99 seedlings/man-day or 0.62 ha/man-day as compared to 0.28 ha/man-day or 45 seedlings/man-day with the commonly manual system; an improvement of 2.2 times. The estimated planting cost is RM2.22 (USD 0.56)/seedling with this mechanized seedling as compared to RM2.26 (USD 0.59)/seedling with the commonly manual system; thereby a reduction of 6.64 percent.

Transplanter trailed behind a tractor

The equipment has won several medals and is patent-pending under Malaysian Patent registration number PI 20020851.

Transplanting of oil palm seedlings in operation

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