

SESSION VII: SUSTAINABLE AGRICULTURAL PRACTICES

**DESIGN AND DEVELOPMENT OF A LOW COST PETITE
TRAILER FOR FARM TRANSPORT**

P L A G Alwis, L W S Pemasiri & N P G Pushpitha

Faculty of Agriculture, University of Ruhuna, Mapalana, Kaburupitiya, Sri Lanka

Transporting goods is a basic need for all farming operations. Transport facilities greatly influence the timing of fieldwork (seeding, fertilization) and determined the economic success of a farming enterprise by opening access to local markets. At present it can be estimated, about 20% of farm transport is done by mechanical trailer, 20% by traction animals and the remaining 60% by manual power. It is only available for few farmlands, which are close to good service roads. Lack of adequate transport causes late harvesting of crop is left in the fields because of lack of transports. It has been observed that poor transport is accountable for a total loss of about 25% of the harvests.

The objective of this study was to design and development of a low cost appropriate mounted type petite trailer for four-wheel tractor to solve the on-farm and farm–market transport problems.

The designed mounted type cart used for the experiments, consists of a wooden platform, a metal frame and tree point linkage for the attachment of the four-wheel tractor.

Fuel consumption (L/hr), traveling speed (km/hr), production cost per cubic meter space (Rs/m³), total weight (kg) and farmer opinion were considered as criteria for comparison of merits and demerits.

From the result, it was observed that the performance of developed trailer was significantly higher. The fuel consumption is twelve times lower and the total weight was ten times lower than the average conventional trailer. It was calculated that the traditional trailer is fifteen times can be recommended as better transporting equipment which is successfully used in on farm transport.