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Design and development of bended tube fruit harvesting device.

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Harvesting is the most important and difficult operation in fruit production. Without applying an appropriate harvesting technique, higher yield and good quality product cannot be expected. The fruit cultivators in the country use low standard most preliminary manual methods to harvest their yield. Since ancient time, wooden picker with a hook is the commonly use traditional manual harvesting implement for the harvesting tree fruits. Manual harvesting without appropriate tools causes many problems such as low productivity, high loss of fruit and damage for branches.

Considering the above facts a manual operated low cost fruit harvester was designed and constructed to perform better harvesting operation with minimum harvesting losses at lowest harvesting costs.

The designed multipurpose fruit harvester was mainly composed of telescopic holding pole, bended tube fruit separating unit and fruit collector. The field experiments were conducted to compare the performance of the designed harvester with traditional wooden picker. Therefore both devices were used to harvest locally available four varieties of fruit trees in the faculty farm.

The total time taken to harvest the 100 fruits, percentage of fruit falls down on the ground; farmer's opinion and ability for harvesting of different kinds of fruits by the device were considered as criteria for the evaluation of designed harvester.

The results show that the average time reduction of the designed harvester with Bended tube fruit separating unit was 19%. Considering the average fruit fallen percentage through the collector (uncollected fruit %) of the designed harvester was 9.5%. But the results revealed that the 100% fruit fallen was recorded by the traditional method. Therefore the relative performance of designed fruit harvester over conventional method was about 90%. The average time saving by the designed harvester was greater by 14% than the traditional method.

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