



ICAR-Indian Institute of Oil Palm Research

Pole Harvesting of Oil Palm: A Success Story of Innovation, Efficiency and Safety

Problem statement

Traditional climbing and harvesting of fresh fruit bunches (FFB) from oil palm has long been an arduous and hazardous task for both farmers and harvesters. The methodology is marked by several significant challenges including ergonomically intensive climbing of tall palms and cutting of sizeable bunches from the base of spiny frond. Most importantly, the risk of serious injuries and even casualties are associated with this task due to miscalculations and loss of grip during the operations which are likely to happen due to human errors. In addition, there is always a safety concern from snakes and poisonous arthropods (scorpions, spiders, centipedes etc) while climbing as the dead leaf bracts attached to the stem harbours good hiding places.

Technological Intervention

Telescopic harvesting poles attached with sickle are the best alternatives for harvesting FFBs from oil palm which can replace traditional climbing. These poles come in sizes of 12ft, 20ft, 32ft, 40ft and 50ft with telescopic adjustment of height to suit the requirement of different height gardens/palms. Moreover, the safety and ease in operation associated with the technology hold great promise over tradition climbing. In view of this, a harvester group was formed in Tallagokavarm village, Pedavegi mandal of Eluru district with 15 harvesters. They were provided with 26, 32 and 40 ft height poles along with protective items like shoes, gloves and helmet, under Schedule Caste Sub Plan (SCSP) program implemented by ICAR-IIOPR, Pedavegi. In addition, the group members were also imparted with the knowledge on know how about the use of poles, safety precautions to be followed while handling and harvesting, pre and post care maintenance of poles etc. The formation of group for providing poles is aimed at ease in operation as the harvesting of FFBs is a group activity. Most importantly, any given garden or village will have substantial variability in height of the palms which demands different size poles for harvesting. So, to meet this real-time and onsite need, the group is provided with a combination of different height poles.

Impact on the technology

The adoption of telescopic harvesting poles had a transformative impact on FFB harvesting in terms of both harvesters and farmer. In farmer point of view, the total labour requirement reduced from 10 per acre to 6 per acre resulting in reduction of harvesting cost by 40%. Whereas in harvester point of view, primarily, the fatal risks associated with climbing are totally eliminated providing safer working environment. The area coverage of harvesting per day by the group members was increased by 50% (from 5 acres to 10 acres per day) due to saving of time in climbing with an efficiency of one-ton FFB harvesting in around one hours which is three hours in climbing. In addition, number of working days was also increased as the difficulties experienced during rain and hot summers are nullified resulting in increased income to a tune of 50% with reduced physical strain as well.



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Economics

With the need for fewer labourers and reduced harvesting time, the overall cost of oil palm harvesting has decreased from Rs. 500 per ton to Rs. 300 per ton. The monthly income of a harvester increased from Rs. 12500/- to Rs. 20000/- due to increased FFB harvesting in pole harvesting method. Harvesters could get employment round the year as group cohesiveness helped in getting opportunities for harvesting in a greater number of farmer plantations or villages.

Overall, the introduction of telescopic oil palm harvesting poles has not only improved the economic condition of the farming community but also saved lives and enhanced the quality of life for oil palm harvesters.

Comparison between traditional climb harvesting and pole harvesting

Description	Traditional harvesting (Climbing)	Pole harvesting
Group members	5-10	3-5
Area covered per day	5 Acres	10 acres
Area covered per month	50 acres	100 acres
Group for pruning per 10 acres	5	3
Income	12000 per month	20000 per month
Maintenance	Nil	1000 per year
Life span of tool	Less than one year	3 years
Major hinderance	Harvesting during rainy season	Harvesting of palms close to electric wires
Advantages		Less time consuming

