

Short Communication

Women Empowerment Through Drudgery Reduction by the Use of Improved Sickle

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Rural Indian women are extensively involved in agricultural activities^[1,6,7]. However, the nature and extent of their involvement differs with the variations in agro production systems. The mode of female participation in agricultural production varies with the landowning status of farm house – holds^[1]. Studies on women in agriculture conducted in India and other developing and under developed countries all point to the conclusion that women contribute for more to agricultural production than has generally been acknowledged^[2,4,6]. Recognition of their crucial role in agriculture should not obscure the fact that farm women continue to be concerned with their primary functions as wives, mothers and homemakers. Since all these operations are done manually; they cause considerable physical and mental fatigue and other health problems. The root cause of suffering of farm women is ignorance, age-old methods of doing work, inappropriateness of technology and attitudinal constraints such as innate conservatism and resistance to change. During these activities they adopt unnatural body posture due to which their physiological workload increases and also they face many types of musculoskeletal problems as a result; the efficiency of women to work decreases to a greater extent^[3,5,8]. It is thus essential that the

tools and implements for farm women are developed to suit their body posture.

The mode of study was action research with participatory approach. The study was conducted under on farm trial of KVK in three villages Paramarpur, Rajamau and It our abujurg of District Raibareli. Improved Sickle developed by CIAE Bhopal and SHIHATS Allahabad were compared with local sickle used by farm women in district Raibareli. Fifteen Physically fit farm women were selected the study .Physical fitness of the farm women were assessed through body mass index. Two type of improved sickles developed by CIAE Bhopal and SHIAT Allahabad were assessed with farmer's local sickle. The efficiency of the sickles were assessed through various parameters – Average of Output m²/hr., Average of Est. Energy Expenditure kj/min , Average of WHR (working heart rate) beat/ min , Average of % reduction in drudgery, Average of % increase in efficiency, Cardiac Cost of Work, % Saving of cardiac Cost. Heart rate of the farm women was measured through heart rate monitor. Time was recorded with the help stop watch. Energy expenditure, working heart rate, Cardiac cost of were measured through the formulas given by given below^[2].

A.H.R.	=	Average working hear t beats – Average resting heart beats
C.C.R.	=	Average recovery heart beats – Average heart beats X durability (Time)
C.C.W.	=	AHR X durability (Time)
T.C.C.W.	=	C.C.W. + C.C.R.
E.E.	=	0.159 X heart rate (AHR) – 8.72.

During the fodder cutting, all farmwomen were bending in position and none was squatting. However, the bend position during longer periods of work might lead to tensing of certain muscles and thus resulted in quicker as tiredness and soreness. To reduce these feelings, farmers/farmwomen occasionally stands upright or sharpen their sickles which resulted as wastage of time. From table-1, it is clear that average output of local sickle was 90.86 m²/ha whereas average output of improved Sickle developed by CIAE Bhopal was 107.66 m²/ha. The average output of improved Sickle developed by SHIAT, ALLAHABAD was 104.34. Thus the maximum output was found for improved sickle developed by CIAE Bhopal followed by improved Sickle developed by SHIAT, ALLAHABAD. It is also clear that average of Est. Energy Expenditure (kj/min) was 14.34 (Kj/min) whereas average output of improved Sickle developed by CIAE Bhopal was 5.43 (Kj/min). The average output of improved Sickle developed by SHIAT, ALLAHABAD was 5.97(Kj/min). Thus the maximum output was found for improved sickle developed by CIAE Bhopal followed by improved Sickle developed by SHIAT, ALLAHABAD. Further, table shows that Average of WHR (beats/min) was 145 beats/min for local sickle, 88.97 beats/min for improved sickle developed by CIAE Bhopal and 92.35 beats/min for improved sickle developed by SHIAT Allahabad. Thus the maximum cardiac load

was found for local sickle. Table indicates that Average of percentage reduction in drudgery was 62.15 per cent by improved sickle developed by CIAE Bhopal and 58.37 per cent by improved sickle developed by SHIAT Allahabad. Thus improved sickle developed by CIAE Bhopal were found more effective in reducing drudgery of the farm women. From the table, it is clear that Average of percentage increase in efficiency was 15.61 per cent by improved sickle developed by CIAE Bhopal and percentage increase in efficiency by improved sickle developed by SHIAT Allahabad was 12.92 percent. Thus improved sickle developed by CIAE Bhopal were found more effective in increasing efficiency of the farm women. During the fodder cutting, all farmwomen were bending in position and none was squatting. However, the bend position during longer periods of work might lead to tensing of certain muscles and thus resulted in quicker as tiredness and soreness. To reduce these feelings, farmers/farmwomen occasionally stands upright or sharpen their sickles which resulted as wastage of time. It is explicit that average of cardiac cost of work was 69.00 whereas average output of improved Sickle developed by CIAE Bhopal was 12.97. The average output of improved Sickle developed by SHIAT, ALLAHABAD was 16.37. Thus the maximum cardiac load was found for the local sickle.

Table 1 Performance of Improved sickle for efficiency & drudgery reduction of Farm Women

Details of technology	No. of trials	Average of Output m ² /hr	Average of Est. Energy Expenditure kj/min	Average of WHR beat/ min	Average of % reduction in drudgery	Average of % increase in efficiency	Cardiac Cost of Work	% Saving of cardiac Cost
Harvesting by simple sickle (Farmer Practice)	15	90.86	14.34	145.00	-	-	69.00	-
Harvesting by improved Sickle (CIAE Bhopal)	15	107.66	5.43	88.97	62.15	15.61	12.97	18.79
Harvesting by improved Sickle (SHIAT, ALLAHABAD)	15	104.34	5.97	92.35	58.37	12.92	16.35	23.70

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