

ERGONOMIC INVESTIGATION IN TERM OF OXYGEN CONSUMPTION (OCR), HEART RATE (HR) AND ENERGY EXPENDITURE FOR MAIZE SHELLING METHODS

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ABSTRACT

Maize is the third most important cereal in India and Production 23 Mn MT in 2009-10 (Department of Agriculture & Cooperation, India). Rajasthan has the largest area 10.62 lakh hectares under cultivation among all states with total production of 2.1 Mn MT (2010). Agriculture is generally recognized as the nation's most hazardous industry and Shelling or threshing is the most tedious job. Four method of maize shelling namely shelling cob grain by hand, octagonal maize sheller, hand operated maize sheller and beating by stick method were ergonomically study. The Ten male agricultural subjects of 25-35 yr age group were randomly selected for the study. The mean OCR, and HR for octagonal maize sheller was lowest among all method of maize shelling and highest for beating by stick method. The energy expenditure rate was highest for beating by stick method (3.84 kcal/min) and lowest for octagonal maize sheller (1.52 kcal/min). Energy expenditure rate for shelling cob grain by hand and octagonal maize shelling operation could be scaled in "Very light" category of work load. Whereas the hand operated maize sheller and beating by stick method could be scaled as in "Light" category of work load.

KEYWORDS: Energy Expenditure Rate, Ergonomic, Heart Rate, Maize Shelling, Oxygen Consumption Rate