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Different Levels of Energy Use and Corresponding Output Energy in Paddy Cultivation in North Bank Plain Zone of Assam, India

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ABSTRACT: Six levels of energy input were used to cultivate three *Sali paddy* varieties of different durations. Operation-wise as well as source-wise energy output, energy efficiency and energy productivity for different levels of energy input in paddy varieties were determined. Studies showed that with increase in the level of mechanization, the human and animal hour requirement for paddy cultivation was reduced from 795 to 350 and 352.5 to 22.5 hr/ha, respectively. Thus mechanization helped in a substantial reduction of drudgery of human and animals. Total energy requirement for paddy cultivation in the studied six levels of energy input ranged from 5630 to 8448 MJ/ha. Energy used in paddy cultivation could be reduced by 8 to 23% through increasing the level of mechanization. Under these six input energy levels and varieties, output parameters *viz.*, output energy, energy use efficiency and energy productivity ranged from 35456 to 85922 MJ/ha, 5.94 to 13.09 and 0.4 to 0.89 kg/MJ, respectively. For all the levels of energy input, higher values of output energy parameters were observed in the long duration variety *Ranjit* compared to other two varieties. The benefit-cost (B:C) ratio under different levels of energy input varied from 0.95 to 2.90.