

CONSERVATION OF ENERGY FOR PRODUCTION OF SOME RABI CROPS BY ADOPTING IRRIGATION SCHEDULING APPROACH IN *SENAPATI* DISTRICT OF MANIPUR STATE

Arpan Sherring, Chitrasen Lairenjam and A.K. Mishra

Received May 28, 2009 and Accepted August 17, 2009

ABSTRACT : A study was conducted at the Department of Soil, Water, Land Engineering and Management, Allahabad Agricultural Institute-Deemed University on Conservation of Energy by adopting irrigation scheduling approach in *Senapati* district of Manipur state. An extensive survey of *Senapati* district was conducted during October to March, 2004-05 to collect the input data for production of various rabi crops. A questionnaire was prepared and farmers were interviewed personally regarding the necessary information. The various agricultural operations were converted in form of energy (MJ/ha). The output and input ratio was estimated. Irrigation energy (IE) based on Crop water requirement approach was calculated and compared with the IE utilization for various Rabi crops. A computer program in Visual Basic was developed to estimate the utilized energy in irrigation for various crops. The study revealed that the total energy utilized in *Senapati* district for the production of potato, cabbage, pea and mustard were 22134.38 MJ/ha, 13459.68MJ/ha, 9869.75 MJ/ha and 7307.43 MJ/ha respectively in which irrigation energy was 12.26%, 18.04%, 25.85% and 32.99%, respectively. The output-input energy ratio was estimated 1.16, 1.11, 8.86, 2.79, respectively for these crops. The result of the study also reveals that the excess energy can be reduced by adopting the scientific approach of irrigation scheduling and water application. This can help to increase the yield significantly, better output-input ratio and ultimately the better economic returns to the farmers.

Key Words: Energy, irrigation, rabi crops, *Senapati*, Manipur.