

Role of Farm Power Issues on Labour Requirement in Sugarcane Production

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Received on 12.2.2001

Key words: Farm power, labour requirement, sugarcane production.

Farm power input is essential for sugarcane production. Farm power issues perform different farming operations for sugarcane cultivation which are obtained from three sources such as human, draught animal and mechanical (Tractor/power tiller). Adoption of appropriate machinery either hand operated or animal powered or machine operated can solve problems of power shortage for land preparation, intercultural operation, harvesting and post harvest operation and hence ensure timeliness of operation. The extent of farm power use from these sources depends on size of farm households, farming practices, labour required for each practice and availability of power sources. Farm machinery can reduce drudgery, add value to product processed and release labour for other income earning activities. Human, animal and mechanical power sources are used at various degrees of intensity at all cultural and intercultural activities for crop production (Sarker, 1999). Sugarcane is a long duration crop that requires 12-14 months from planting to harvesting. Some cane growers can not afford to keep their land engaged for such a long period for sugarcane. So, effective utilization of land resources is always necessary. Sugarcane productions are still overwhelmingly muscling and human powered. The availability of labourer for sugarcane production in the country is decreasing rapidly day by day. On the contrary, farm machinery needs improved for various operations. Sugarcane production in Bangladesh is very much dependent on use of farm machinery for land preparation. Miah and Sarker (1982) reported that sugarcane yield could be increased by 50% leaf removal and tying up of tillers. No information was available for labour requirement and farm power issues for sugarcane cultivation under different operations. The present study was under taken to enumerate farm power issues and labour requirement for sugarcane production.

An experiment was conducted in the Regional Sugarcane Research Station (RSRS) farm, Thakurgaon in cropping season 1999-2000. To perform this study three plots of each one-hectare area were selected. Labour and material inputs given to three plots were studied. The three plots were full package plot, IPM plot and control plot. In case of full package plot, fertilizer, pesticides, insecticides and all other inputs were applied as per BARC and BSRI recommended dose (BARC Fertilizer guide, 1997). In IPM plot, chemicals and another inputs were applied in the concept of Integrated Pest Management. All plots had homogenous soil types and same variety (Isd 2/54) of sugarcane was grown. Data were recorded and monitored for all labour inputs for sugarcane cultivation throughout the growing season. The number of labour inputs for different operations were recorded at different stages of their applications.

Results presented in the Table 1 shows operation-wise labour requirement for sugarcane cultivation in three packages i.e full package, IPM plot and control plot. In each package 68 labourers were required for weeding. Weeder and mulcher can save maximum labour for weeding purpose. Sixty labourers were required for seed cutting, sett transplanting in each packages. This labour requirement can be reduced by BSRI sett cutting machine, and planting hand hoe. With the BSRI sett cutting machine 3 times more sett cane be prepared over conventional method (Hossain *et al.*, 1993) while using planting hand hoe 25% more seedling can be planted over conventional hand hoe (Hossain *et al.*, 1991). For irrigation purpose, only 7 labourers were required in each package. One hundred and twenty two labourers were required for fertilizer application and top dressing for full package, 92 labourers for IPM and 81 labourers were required for control plot. Two labourers were required for parasite release, 4 for TSB infested cane collection and eradication purpose and 2 for mechanical control of TSB in full and IPM packages; But no labourer was utilized in the above mentioned operations for control package.

Table 1. Operation-wise labour requirement for sugarcane cultivation.

Operations for sugarcane cultivation	No. of labourer required for full package plot (1 ha)	No. of labourer of IPM plot (1 ha)	No. of labourer required for control plot (1 ha)
Land preparation, harrowing and Trenching	37	37	37
Parasite release (trichogama)	2	2	-
Seed cutting, Sett transplanting, Fertilizer & Insecticides application in trench	60	60	60
Weeding, mulching & drain making for Irrigation	40	40	40
Irrigation	4	4	4
Moth collection & Germination Count	4	4	-
1st top dressing, Fertilizer application, mulching & irrigation	28	13	15
TSB infested cane collected & irradiation	4	4	-
Weeding and mulching at different growth stages	28	28	28
Mechanical control of TSB	2	2	-
Uprooting for observation of termite	3	3	3
Irrigation & drain making	3	3	2
2nd Top dressing Fertilizer application, mulching & Earthing up	34	19	16
Tieing	8	8	4
Harvesting	8	8	8
Total labour requirement	265	235	215
Working time (h)	2120	1920	1720

The study compared the working time in hour of full package, IPM and control package for cultivation of sugarcane. In sugarcane cultivation, the highest working time was required for full package (2120 h) followed by IPM (1920 h) and control (1720 h) package respectively. The differences of working time indicate the importance of farm power issues for sugarcane cultivation.

It was observed that a large number of labourers were involved i.e., human power was dominant in different types of operations justifying need of Farm Power issues to minimise high labourer requirement for sugarcane production.

REFERENCES

- Hossain, S. M. I.; Eusufzai, S. U. K.; Hossain, M.A. and Siddique, M.A.B. 1994. Development of planting hand hoe for Sugarcane. *Bangladesh J. Sugarcane* 16 : 83-88.
- Hossain, S.M.I.; Eusufzai, S.U.K. and Hossain, M.A. 1993. Design and Fabrication of power operated sugarcane sett cutting machine. *Bangladesh J. Sugarcane* 12-15: 13-18.
- Miah, M.A.S and Sarker, M.A.A 1982. Effect of artificial defoliation and stalks binding on the cane quality. *Bangladesh J.Sugarcane*, 3: 55-57.
- Sarker, R.I. 1999. Selection of farm power technology for agricultural mechanization in Bangladesh. A paper presented in the 50 th anniversary celebration of the institution of engineers, Bangladesh. Souvenir of Mymensingh centre. pp. 13-22.