RESEARCH ARTICLE

THERMAL REQUIREMENT OF MUSTARD IN LATE SOWN CONDITION AFTER RICE CROP AT RAIPUR UNDER CHHATTISGARH PLAIN

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Abstract: The investigation of thermal requirement of mustard in late sown condition, after rice crop at Raipur under Chhattisgarh plain. It was found that cumulative GDD for emergence increased by different varieties under E1 as compared to E3. The PTU values were higher in 19th December sown crop as compared to 29th November and 9th December sowing. Lower PTU values were observed under 9th December sowing (E2) in Kranti while, the PTU values were in increasing trend for Vardan and varuna from29th November and 19th December. Different Mustard varieties show non significant results under different thermal environments but the seed yield (kg/ha) showed significant results under different thermal regimes. Highest seed yield was recorded in E1 (29th November) as compared to delayed sowings. Vardan was found out yielder in all temperature regimes as compared to other varieties. The radiation use efficiency was more in E1 sowing under S1 spacing. In early date of sowing (E1) both in case of S1and S2 the radiation use efficiency increase from 25 days to 75 days and then decreases up to at harvest. RUE is maximum in case of Varuna (3.06gMj^{-1}) under S1 spacing followed by Kranti (2.96gMj^{-1}) and lowest was recorded in variety Vardan (2.83gMj^{-1}) under S1 spacing. Heat use efficiency was observed that variety Kranti showed higher HUE for the entire thermal environment (different date of sowing) as compared to Varuna and Vardan It may be attributed to higher biomass.

Keywords: GDD, PTU, HTU, Heat use efficiency (HUE), Radiation use efficiency

REFERENCES

Hundal, S.S., Kaur, Prabhjyot and Malikpuri, S.D.S. (2004). Radiation use efficiency of mustard cultivars under different sowing dates. *Journal of Agrometeorology*, 6(1): 70-75.

Kar, G. and Chakravarty, N.V.K. (1999). Thermal growth rate, heat and radiation utilization efficiency of *Brassica* under semi-arid environment. *Journal of Agrometeorology*, 1(1): 41-49.

Khichar, M.L., Yadav, Yogesh. C., Bishnoi, O.P. and Niwas, Ram (2000). Radiation use efficiency of mustard as influenced by sowing dates, plant spacing and cultivars. *Journal of Agrometeorology*, 2(1): 97-99.

Singh, Raj., Rao, V.U.M. and Singh, Diwan (2004). Effect of thermal regime on growth and development of Indian *Brassicas. Journal of Agrometeorology*, 6(1): 55-61.

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