Irrigation Schedules and Varieties Impact on Performance of Wheat in HAT Zone of A P

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ABSTRACT

A field experiment entitled "Varietal performance of wheat (*Triticum aestivum* L.) cultivars to different irrigation schedules under HAT zone conditions of A.P." was conducted during *rabi*, 2021-2022 on sandy clay soils of the Regional Agricultural Research Station, Chintapalle. The experiment was laid out in split plot design with three main plots and four sub plots and replicated thrice. The treatments consisted of three irrigation levels: M_1: irrigation at CRI, maximum tillering, jointing, flowering and milking stages, M_2: irrigation at CRI, flowering and milking stages and M_3: irrigation at CRI and milking stages and four varieties: V_1: DBW-252, V_2: HI-1544, V_3: HI-8759 and V_4: HI-8713. Among the irrigation schedules studied the higher grain and straw yields were recorded in five irrigations were scheduled each at CRI, flowering and milking, lower grain yield was with two irrigations (M_3) scheduled at CRI and milking stage however the straw yield was on a par with three irrigations (M_2) recorded. The harvest index (%) was significantly highest with five irrigations (M_1) and lowest with two irrigations (M_3). Among the varieties tested, HI-8759 recorded maximum grain and straw yield. The HI-8713 recorded similar straw yield with HI-8759 and were significant to other varieties. HI-8759 was maximum harvest index significantly superior over all the varieties tested. Lowest grain and straw yields were recorded with HI-1544. The highest Gross returns (91,072/-), Net returns (52,022/-) and B:C ratio (2.33) was found with five irrigations and among the varieties HI-8759 achieved highest Gross returns (86,494/-), Net returns (49,444/-) and B:C ratio (2.32). The challenges of the study is to find out the best variety among the tested for a suitable irrigation schedule and for the first time durum wheat varieties were tested in High Altitude and Tribal Area zone conditions of Andhra Pradesh.

Keywords: *Irrigation schedules, Wheat, CRI, Flowering, Jointing, HAT zone, Maximum tillering, Milking, Returns and harvest index and Varieties.*