

Grain Yield, Morpho-Physiological Parameters and Growth Indices of Wheat (*Triticum Aestivum* L.) Varieties Exposed to High Temperature under Late Sown Condition

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Abstract : A field experiment was carried out in Factorial Randomized Block Design (FRBD) with three replications at Instructional Farm Krushigadh, Junagadh Agricultural University, Junagadh, India to assess the biochemical parameters of wheat in order to assess the thermotolerance. Nine different wheat varieties GW 433, GW 431, HI 1571, GW 432, RAJ 3765, HD 2864, HI 1563, HD 3091 and PBW 670 sown in timely and late sown conditions (i.e., 22 Nov and 6 Dec 2012) were analysed. All the varieties differed significantly with respect to grain yield morpho-physiological parameters and growth indices for time of sowing, varieties and varieties x time of sowing interactions. The observations on morpho-physiological parameters viz., germination percentage, canopy temperature depression and growth indices viz., leaf area index (LAI), leaf area ratio (LAR) were recorded. Almost all the morpho-physiological parameters, growth indices and grain yield studied were affected adversely by late sowing, registering reduction in their magnitude. Germination percentage was reduced under late sown condition but variety PBW 670 was the best. Varieties GW 432 performed better with respect to canopy temperature depression while sown late. Under late sown condition, variety GW 431 recorded higher LAI while HI 1563 had maximum LAR. Considering yield performance, HD 2864 was best under timely sown condition, while GW 433 was best under late sown condition. Varieties HI 1571, GW 433 and GW 431 could be labelled as thermo-tolerant because there was least reduction in grain yield under late sown condition (1.75 %, 7.90 % and 13.8 % respectively). Considering correlation coefficient, grain yield showed very strong significant positive association with germination percentage. Leaf area ratio was strongly and significantly correlated with grain yield but in negative direction. Canopy temperature depression and leaf area index also had positive correlation with grain yield but were non-significant.

Keywords : growth indices, morpho-physiological parameters, thermo-tolerance, wheat

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