**ABSTRACT**

Heritability, inter-relationship and path coefficient studies were performed in ten bread wheat genotypes in the background of (Lok-1, MACS2496, NI5439, NIAW 34, PBW 226, PBW 343, PBN 51, PBW 502, WH542 and WH147) carrying yield potential gene Lr19/Sr25 along with rust resistance. Very high broad sense heritability was estimated for all the morphological characters studied. Grains per spike exhibited highest heritability value of 99.4% while tillers per plant showed minimum value of 90%. Genotypically plant heights, spike length, spikelets per spike, grains per spike and 1000-grain weight were positively and significantly correlated with tillers per plant while highly significantly associated phenotypically. Flag leaf area was positively but non-significantly associated with grain yield; whereas, fertile tillers per plant was negatively and nonsignificantly correlated with grain yield. Plant height, flag leaf area, spike length and grains per spike had positive direct effects on grain yield. While fertile tillers per plant, spikelets per spike and 1000-grain weight exhibited negative direct effects on grain yield. The traits having positive direct effects on grain yield are considered to be suitable selection criteria for evolving high yielding genotypes.