

Studies on Moderating the Climate Change Effects on Wheat Productivity

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ABSTRACT

Field studies were conducted to mitigate the effect of high temperature during the growing season with the different crop establishment methods and manipulation of agronomic practices at the Punjab Agricultural University, Ludhiana for the three consecutive years from 2005-06 to 2006-07. The results revealed that the wheat sown with zero tillage and conventional tillage gave the similar yield but conventional tillage with crop residue gave the considerably higher yield as compared to the former methods of planting. The foliar application of KNO_3 (1%), with extra light irrigation (flooding) and sprinkling of irrigation water during post anthesis stage also gave the considerably more grain yield as compared to the recommended practices and green manuring (1:6) during 2005-06, 2006-07 and 2007-08. The mean monthly temperature increased in the month of February about 6.2°C during 2005-06 and 8.9°C in the month of March during 2007-08 in the post anthesis and grain fill period. This magnitude of temperature hastened the maturation of the crop resulting in small and shrunken grains during 2005-06 and 2007-08. The crop took 129, 154 and 145 days to maturity during 2005-06, 2006-07 and 2007-08, respectively. This reduced duration during 2005-06 and 2007-08 due to heat stress lowered the kernel weight of wheat.