Effect of Elevated Temperature on Spikelet Fertility and Harvest Index of Rice Genotypes. (C02-prasad121948-Poster)

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Abstract:

It is important to quantify and understand effects of elevated temperature on reproductive processes and yield to develop suitable agronomic or genetic management for future climates. Research was conducted in controlled environments to investigate effects of high temperature on eight rice genotypes (M 103, M 202, S102, Italica livorna, Labelle, Koshihikari, L 204 and N 22). All genotypes were grown from sowing to maturity at ambient (natural diurnal and seasonal temperature cycle) and ambient plus 5 C temperatures. Measurements on spikelet fertility, harvest index and grain yields were taken. Results showed that increasing seasonal mean temperature from 28/21 C to 33/26 C, decreased spikelet fertility based on filled grains per panicle, seed yields per panicle and harvest index at maturity in all genotypes. However, the response varied among genotypes. Based on percentage filled grains, seed yields and harvest index at high temperatures, genotype N 22 was most tolerant, while, L 204 was most susceptible. Genotypes S 102, Koshihikari and M 103 may possess some tolerance. Further research is underway to understand physiological mechanisms affected in these genotypes.

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