EFFECT OF DROUGHT AT FLOWERING STAGE ON YIELD AND YIELD COMPONENTS OF RAINFED LOWLAND RICE

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Abstract: Drought is a major factor limiting rice production in India. Its occurrence at flowering stage is very common in rainfed lowland rice which leads to a considerable yield reduction or even crop failure some times. The study was therefore, contemplated to determine the effect of drought stress at flowering stage on yield and some yield attributing parameters of four rice varieties viz., IR-42, NDR 8002, BPT 5204 and TCA-48. The experiment was carried out in plastic tubs in a completely randomized design with three replications. Varieties were subjected to three water stress treatments (saturated or 100% available soil moisture regime (ASMR), 50% ASMR, 25% ASMR) at flowering stage by withholding water application. The study revealed that drought reduced significantly the grain yield and yield attributing characters, EBT plant^{-1}, test weight, panicle length, total grains panicle^{-1} and fertile grains panicle^{-1} of all the varieties; but to a greater extent at 25% ASMR. Sterility of varieties under saturated condition varied from 11 to 16%, which increased to the tune of 17 to 32% and 26 to 40% under 50% and 25% ASMR, respectively. Significant drought and varieties interaction effects were exhibited for EBT plant^{-1}, sterile grains panicle^{-1} and fertile grains panicle^{-1}, indicating significant differences of drought levels and genetic differences for these traits. Amongst the varieties, NDR-8002 and TCA-48 were noted to be relatively more drought tolerant than others on the basis of assessment of their yield performance.

Keywords: Rice, Flowering stage, Drought, Yield

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