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GAMMA RADIATION INDUCED VARIATION IN SOME GENETIC PARAMETERS OF SORGHUM VARIETIES.

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ABSTRACT

Gamma radiation effects of doses 15,25,35 and 45 krad on seedling emergence parentage, days to 50% flowering, plant height and grain yield per plant of DS-75 and Pak SS-II varieties of Sorghum were investigated. Highly significant differences in the mean values due to radiation doses for all the characters were obtained. Similarly highly significant differences in mean values due to varieties were obtained for all the three characters except seedling emergence the mean values for which were non-significant. The maximum reduction as compared to control due to 45 krad was computed as 90.59%, 29.29% and 8.69% for seedling emergence, plant height and grain yield per plant in both the varieties respectively, while delay in the days to 50% flowering due to the highest radiation dose was calculated as 22.56% as compared to control plants. Variety DS-75 was more sensitive to radiation than Pak-SS-II for all the characters studied.

INTRODUCTION

Sorghum, Sorghum bicolor is an important world food crop and is tolerant to drought conditions and soils low in nutrients as compared to many other grain crops. Sorghum grains are used as a food and feed in the country and its flour is used in manufacturing various bakery products, while its stalks in green as well as in dry form provide fodder for the cattle.

In Pakistan Sorghum is grown in nearly 0.390 million hectares while in N.W.F.P. 16,191 hectares are under this crop mainly in D.I. Khan, Kohat, and Hazara district. [1]