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EFFECT OF GAMMA IRRADIATION ON SOME CHARACTERISTICS OF DURUM WHEAT (*TRITICUM DURUM* L.)

This study was carried out during the winter growing season of 2012/2013 and 2015-2016 at the Field Crops Department, Agriculture Faculty of Dicle University, Turkey. The aim of the research was to determine the effects of different doses of gamma ray (0, 100, 200 and 300 Gy) in M1 and M2 plants of "Güney Yıldızı" durum wheat cultivar. Seeds of wheat were irradiated with gamma rays from ^{60}Co source at Turkey Atomic Energy Agency, Ankara, Turkey. The research was established for M1 plants in the greenhouse and in the field and for M2 plants only in the field. The experiment was laid out in a randomized complete block design with three replications. Increasing gamma ray doses caused statistically significant differences on most characters of M1 and M2 plants. Increasing gamma ray doses also generally increased heading time and decreased other observed characters of M1 plants. The result of the study showed the following changes in M1 generation; emergence rate 8.90-88.9%, first leaf length 4.83-12.45 cm, coleoptile length 2.12-3.22 cm, seedling height 4.75-22.95 cm, root length 2.54-17.81 cm, fertile plant rate 3.3-57.0%, heading time 175.0-179.3 date, plant height 54.6-87.8 cm, spike length 5.97-7.37 cm, 1000 kernel weight 47.1-63.5 g, and in M2 generation; heading time 151.7-153.7 date, spike length 7.33-8.00 cm, chlorophyll content in flowering time 49.96-53.86, grain protein content 15.17-16.08%, grain gluten content 28.92-29.51%.

Country or International Organization

Turkey

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