

FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



Contribution ID: 99

Type: Poster

INVESTIGATING YIELD AND YIELD COMPONENTS OF 14 CONTROL AND GAMMA-IRRADIATED BARLEY (*HORDEUM VULGARE L.*) CULTIVARS IN THE TEMPERATE ZONE IN IRAN

In plant breeding, mutations play an important role in the development of genetic variations and new varieties. The use of induced mutations has been found to be very useful not only in practical plant breeding but also in theoretical genetic research. Barley is model species for mutation breeding and an important strategic crop that plays an important role in food security in Iran and the world. A field experiment was carried out by using randomized complete block design with three replications. Treatments included 14 cultivars of barley (13 normal cultivars and one gamma irradiate barley). Various morphological traits, yield and yield components were measured. Results showed that there were significant differences among the 14 barley cultivars in the majority of studied traits. The early-maturity, dwarf and six-row cultivars Fajr 30 and Rayhan 03 performed better compared to tall and late-maturity (Valfajr, Makouee) and two rowed (Behrokh and Dasht) cultivars. Although, gamma irradiated barley (Roudasht) had less yield than Fajr 30 and Rayhan 03, it performed better than other cultivars. Results showed that significant and positive correlation existed between grain yield and spike length, awn length, peduncle length, number of seeds per spike, number of spikes, number of fertile tillers per plant, spike, straw and peduncle dry matter, 1,000-kernel weight, harvest index and biological yield. Correlations between grain yield and plant height, number of infertile spikelets per spike, number of total tiller (fertile and infertile) per plant, and number of infertile tillers per plant were significant but negative.

Country or International Organization

NSTRI, Nuclear Agriculture Research School, Karaj, Iran.

Primary author: Mr ESKANDARI, Ali (NSTRI, Nuclear agriculture research school)

Co-authors: Mrs BORZOUIE, azam (NSTRI, Nuclear agriculture research school); Mr SOUFIZADEH, saeed (researcher); Mrs NAVID, sorayya (Researcher)

Presenter: Mr ESKANDARI, Ali (NSTRI, Nuclear agriculture research school)

Track Classification: Mutation breeding for adaptation to climate change in seed propagated crops