RESEARCH ARTICLE

EFFECT OF ACCELERATED AGEING VARIABLES ON VARIOUS SEEDS QUALITY PARAMETER IN BARLEY (*HORDEUM VULGARE* L.)

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Received-08.09.2019, Revised-26.09.2019

Abstract: Accelerated Ageing test has good Correlation with field emergence and storage potential of Seeds. In This regard study was conducted to standardized accelerated ageing duration along with temperature variables by using six barley genotypes Viz.ALFA-93, BH-393, BH-75,BCU-3,RD-2552 and K-551. All Six varieties was divided in two seed lots subjected to accelerated ageing at two time variables 42±1°C and 45±1°C for 48 and 72 hrs separately on 100% relative humidity. Seeds were exposed to accelerated ageing conditions at two temperature 42ºC and 45ºC for different time intervals 48, 72 hrs; the viability reduced significantly ranging from 40 to 60%. In the present study genotypes BH-393, BCU-73 were observed to be tolerant to stress conditions during accelerated ageing at 42ºC for 48 hrs. whereas Genotypes BH-393 and RD-2552 were observed most tolerant to stress conditions during accelerated ageing at 45ºC for 48 hrs in present study, the genotypes showing high resistance to accelerated ageing test were also showing high standard germination in fresh seed ranging from 94 to 100%. Results revealed that the germination percentage for fresh seed lot was above the minimum seed certification standard whereas in accelerated aged seed lots, the standard germination, vigor index, rate of germination and dehydrogenase activity declined significantly for all the six genotypes. All the genotypes were found significantly different for vigor and viability tests. After accelerated ageing, the genotypes, BH-393 and BCU-73 were having significantly higher standard germination, vigor,rate of germination and enzymatic activity as compared to other genotypes indicating their superiority over others. A higher electrical conductivity of accelerated aged seed in barley further confirmed the accelerated ageing results in to increase permeability of cell membrane and release of food reserves.

Keywords: Accelerated ageing, Standard Germination, Barley seed

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