

DETERMINATION OF SOME MEIOTIC CHARACTERISTICS AND  
SEED SET IN AUTOTETRAPLOID PERENNIAL RYE

(*Secale montanum* Guss.)

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ABSTRACT

In this study, the generations  $C_1$ ,  $C_2$  and  $C_3$  of autotetraploid perennial rye (*Secale montanum* Guss.) were compared in terms of seed set and some cytological characteristics including irregularities in metaphase I (univalents), anaphase I and II (lagging chromosomes and/or chromatids and bridge) and micronuclei in tetrads. According to generations ( $C_1$ ,  $C_2$  and  $C_3$ ) average cell rate with univalent was 18.51, 14.56 and 9.38%, rate of irregular anaphase I cells was 3.44, 15.93 and 7.86%, rate of irregular anaphase II cells was 20.93, 16.48 and 7.16%, rate of tetrads with micronuclei was 18.17, 14.06 and 6.17% and seed set rate was 27.72, 43.50 and 59.59% respectively. Furthermore, a negative correlation was found between seed set and univalents in metaphase I and abnormal anaphase I and II cells, and tetrads with micronuclei. The correlations among the characters investigated during meiotic division were statically significant. The result of this study showed that selection of vigorous plants in autotetraploid perennial rye stimulated seed setting by increasing cytological balance. On the other hand, the abnormalities in early stage of meiotic division were determined to be reflected to the next stages of meiosis.