

T1-2 + 1-7 is crossed with T1-7 + T2-7, crossing over in the differential segment in chromosome 2 will produce a new chromosome which in one combination of chromosomes will include the three chromosomes with the six arms marked by interchanges.

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1. On the status of the Stadler-Uber "r-x₂" deficiency.

The "r-x₂" deficiency is known to be transmitted only through the egg and includes the r locus. What has not been established is whether it is terminal or intercalary, and what other loci are situated in the segment concerned. Individuals having the constitution G R Sr₂ / ? r-x₂ were employed as female parents in a cross involving g r sr₂ males. None of the plants obtained from the colorless aleurone kernels was striate or golden. Thus the genetic data indicate that this deficiency is intercalary and does not include the g and the sr₂ loci.

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2. Aleurone color intensity.

During the course of an experiment to synthesize altered abnormal chromosomes 10 through the action of maleic hydrazide, the following observations were made: When R Sr₂ K10 / r Sr₂ k10 females were pollinated by yg c sh wx / yg c sh wx; R/R and wd C Sh wx / wd C Sh wx; R/R pollen, both deeply colored and pale colored aleurones were obtained. The frequency with which the pales were obtained was in agreement with the expected value for r transmission through the female. In fact all of the pales appear to exhibit a mottling phenotype. The pales will be tested for verification. When the R K10 chromosome was involved in the production of r/r/R aleurone, the color produced was deep.

One possible reason for the appearance of the pale colored aleurone is the existence of several R (S component) alleles, each having a different degree of efficiency in color production or expression. Not to be ignored is the possibility of induction of factor(s) by maleic hydrazide which influences color expression. Tests are being constructed to determine the cause of paleness.

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