SPACE EFFECTS IN CREPIS CAPILLARIS SEEDS

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Space effects on Crepis capillaris seeds aboard a spaceship were studied. The metaphase test was used which provides for an accurate record and analysis of both chromosome and chromatid rearrangements. A fraction of the material was tested 6 days after the landing and the rest of it was used in the experiments on seed storage following a space flight. Storage terms investigated were 12, 20, 32, 40 and 50 days. Ethylenimine effects on the seeds previously affected by space environment were studied in a special test aimed at the investigation into possible variations of their sensitivity. Tests with the dry Crepis capillaris seeds following the space exposure showed slight but statistically significant increase of chromosome rearrangements. The seeds treated with ethylenimine after the space flight showed increased sensitivity to the mutagen. Their changed mutation spectrum indicated the increase in the number of chromosome-type mutations. The same stock showed the occurrence of cells with multi-hit rearrangements. No space effects on the seed germinating capacity were found. The tests accompanied by ethylenimine treatment with the succeeding seed storage showed the reduction of the seed germinating capacity.

GENETIC AND CYTOLOGICAL STUDIES OF TRADESCANTIA IRRADIATED DURING ORBITAL FLIGHT

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The Brookhaven experiment on board Biosatellite II was designed to determine the effects of weightlessness and other spacecraft environmental conditions on spontaneous and radiation-induced mutation rates and on cytological changes in the higher plant, Tradescantia clone 02. This hybrid clone of Tradescantia has a 2n chromosome number of 12; it is heterozygous for flower color; and it has a high mutation rate of the