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The Effect of Storage Environment on Seed Survival and The Accumulation of Chromosomal Aberrations in Pea Landraces and Cultivars (*Pisum sativum* L.)

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Abstract: The relationship between loss of seed viability and the accumulation of chromosomal aberrations was investigated in both landraces and cultivars of the pea (*Pisum sativum* L.). It was shown here, for the first time with pea landraces, that loss of seed viability is associated with an increase in the frequency of chromosomal aberrations, and that even small losses of viability result in some chromosomal damage in the seeds of pea landraces as well as in the seeds of pea cultivars. In addition, for a given loss of viability the frequency of chromosomal aberrations in either low or high moisture content seed lots was the same. However, it was shown that under identical storage conditions, low moisture content seeds of the landraces exhibit greater longevity than those of the cultivars. Following ageing, chromatid-type aberrations (in particular single fragments) were most frequently observed in the surviving seeds of both pea cultivars and landraces. The relevance of these findings to the long term conservation of pea germplasm is discussed.

Key Words: *Pisum sativum*, pea, seed viability, chromosomal aberrations

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