

**CHANGES IN MITOTIC ACTIVITY AND DNA CONTENT DURING  
THE ENDOSPERM DEVELOPMENT OF 3 LATHYRUS SPECIES  
WITH DIFFERENT LIFE CYCLE TYPES**

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Endosperm developmental stages were determined based on embryo developmental stages. At the embryo globular stage, the fluctuation of mitotic activity in the endosperm of all the tested species – *Lathyrus odoratus* (annual), and *Lathyrus tuberosus* L. and *Lathyrus latifolius* var *splendens* (perennial) – were wave-like. Mitotic divisions in the embryo persist during its entire development, although the MI values are low. Endosperm nuclear DNA content in annual and perennial species is similar. In the endosperm of the globular and heart-shaped embryo in all the species, the DNA content ranges from 6 C to 96 C. While in endosperm adjacent to an embryo with differentiated cotyledons in all species DNA content increases to 192 C, nuclei with DNA content lower than 12 C and even 24 C disappear. Some differences between the studied species can be observed only as regards the number of dominating nuclei in the successive stages of endosperm development before the cotyledon stage is reached. In the annual species, a population of 24 C nuclei prevail throughout endosperm development, while in the studied perennial species, a gradual increase in the pool of nuclei with higher DNA content in successive endosperm developmental stages is observed. Thus, the level of endosperm nuclei endoreduplication is not related to the life cycle type.