Morphological characterization and the germinating potential of Lotus corniculatus l. pollen

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This scientific paper presented the morphological characterization and characteristics of pollen germination process in Lotus corniculatus L. The samples from which pollen was taken came from two stationaries: a polluted one and an unpolluted one. „In vitro" pollen germination tests were carried out in „van Tieghem" wet medium. Nutritive mediums that served for pollen grain inoculation had different glucide concentrations, until 300%. This paper presents the concentration of glucidic elements from mediums allowing pollen germination at minimum percentage, shows the sucrose concentrations for developing the germination process under best conditions and analyses the germination process in dynamics (after 2, 24, 48 and 72 hours since pollen inoculation in nutritive mediums). The proportions of germinated pollen were very high both on mediums lacking glucides and on glucide hyperconcentrated ones, irrespective of the stationery from which samples were taken. The obtained results showed that Lotus corniculatus, known as a natural tetraploid (2n = 4x = 24), of hybrid origin, which regularly forms bivalents at metaphase I of meiosis, has a genetically balanced diploid type meiosis. Very high pollen germination potential in mediums with different glucide concentrations is a proof of meiosis normality in this tetraploid. Furthermore, the fact that pollinic tubes keep growing in length six days after pollen inoculation on all nutritive mediums of the trial is a proof sustaining the eco-physiological plasticity of Lotus corniculatus. Pollen germination potential in Lotus corniculatus was not influenced by polluted environment, showing that major genes controlled this trait; therefore, it is very well genetically consolidated. Also, the pollen morphological traits were not influenced by polluted environment.