**HAND POLLINATION IN MELON SEEDS PRODUCTION**

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**ABSTRACT:** The Pollen-stigma interaction is the first step in higher plants reproduction, pollen tube genetically compatible can reach the base of the ovary and fertilization the ovules for seed development. The objective of this study was to elucidate the reproductive variations in relation to pollen viability and ovule fertilization in six genotypes of melon. The research was carried out in the Plant Breeding Laboratory of the State University of Santa Cruz/Bahia. We evaluated influence of time on the growth of the pollen tube and its arrival to the ovule *in vivo* according to different hours (1h, 2h, 3h) after hand pollination in three commercial cultivars (Galia, Ouro, Piel de Sapo), two hybrids (PI161375xGalia, PI161375xOuro) and one exotic accession (PI161375) by epifluorescence technique. A completely randomized design was used. From each accession five male flowers were emasculated, and pollen grain were deposited on stigma flowers. After hand pollination of the flowers, they were fixed in FAA 50% at 1h, 2h and 3h and then, clarified and softened in a strong 5N sodium hydroxide solution for 24h at RT. Staining was performed in 0.1% solution of aqueous soluble aniline blue dye dissolved in 0.1N K2HPO4 for 10 min. Longitudinal dissection of pistils was performed and mounted on slides. Observations were made with UV microscope Olympus CX41 with Olympus C-7070 camera (360 nm) in a dark room. Pollen germination rates *in vivo* were affected by time in almost 12,5 % more between 1h and 3h after hand pollination and the hybrids pollen germinations *in vivo* were lower than the commercial varieties. In hybrids, commercial varieties, and exotic accession PI161375 showed a continuous increase pollen grains viability and number of pollen tubes growing *in vivo* along the style during 3h after pollination.

**Key words:** Ovule fertilization, pollen, seed development, time pollination.

**Reviewers:** 1Ramírez, D; 2Pistilli, R (1Professor at Agronomic Engineering Course, FIA/UNE; 2Professor at Agronomic Engineering Course FCA/UNC. Campus Universitario, Concepción, Paraguay).

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