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Physiological Seed Quality of 'BRS Mari' Hot Pepper During Seed Development and Maturation

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Hot pepper crops are characterized by having indeterminate growth, continuous flowering and consequently fruits at different stages of maturation. As a result, in various stages of seed development and physiological degrees of maturity make it difficult to determine the optimal time for harvest, which is one aspect that should be considered in order to obtain high physiological seed quality. Also, in general, physiological seed quality of hot pepper is erratic and shows low germination and vigor. The aim of this study was to evaluate the physiological quality of hot pepper seeds obtained from fruits harvested at different stages of maturation under tropical conditions. The experiment was carried out at Embrapa Vegetables in Brasília, DF, Brazil, during spring. Seeds of hot pepper cv. BRS Mari from Embrapa Vegetables breeding program were extracted from fruits at different maturation stages (20, 30, 40, 50, 60, 70, and 80 days after anthesis - DAA). Seed extraction and conditioning were done manually. Seed quality was evaluated by the following tests: seed moisture content, germination, first count, seedling emergence in greenhouse conditions, and accelerated aging with the use of saturated NaCl solution for 72 hours. Seed moisture content (SMC) ranged from 89% at 20 DAA to 39% at 80 DAA. The maximum seed physiological quality was observed in seeds obtained from fruits harvested at 70 DAA. At this time, SMC was 39%, and seed germination and seedling emergence reached 70% and 72%, respectively. Seed germination and vigor decreased at 80 DAA.

Keywords - hot pepper, seed quality, maturation