

Research Paper

Improving Quality and Storage Life of Watermelon, Capsicum and Okra Seeds by Polymer and Fungicide Film Coating

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Abstract

Seed-film coating is a process of applying useful materials to form a continuous layer of thin coating over the seed. An experiment was conducted to study the efficacy of seed-film coating on improving seed quality, storability and the effectiveness of the control of seed-borne pathogens and seed contaminants. A thin film coat containing a combination of film coating liquid (a ready made liquid including a polymer and colorants) + distilled water + Thiram 80% WP was applied on watermelon, capsicum and okra seeds from selected lots. Five different seed-film coating formulations were tested with a non-coated control for each seed lot. Seed quality parameters namely germination percentage, seed moisture percentage, seed health status and seedling vigour were evaluated just after film coating 4 and 11 months after storage using standard protocols. All seed coating formulations tested showed a significant positive effect on the control of seed-contaminating fungi, increasing germination percentage and enhancing seedling vigour compared to non-coated control while no significant difference ($P>0.05$) was observed among different seed coating formulations on each tested seed lot. Therefore, seed-film coating formulations including 10 g of film coating liquid + 50 mL of distilled water + 0.5 g of Thiram for 1 kg of watermelon seeds, 25 g of film coating liquid + 90 mL of distilled water + 0.5 g of Thiram for 1 kg of capsicum seeds and 4 g of film coating liquid + 14 mL of distilled water + 0.5 g of Thiram for 1 kg of okra seeds are recommended as effective seed-film coatings for improving seed quality and enhancing storage life.

Keywords: Seed-borne pathogens, Seed-film coating, Seed germination, Seed storage