

Title Evaluation of health and germination of bean (*Phaseolus vulgaris*) seeds before and after processing

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Abstract

Bean seeds may carry important pathogens such as *Sclerotinia sclerotiorum*, *Phaeoisariopsis griseola* and *Xanthomonas axonopodis* pv. *phaseoli*, which may be carried internally or externally. Besides causing disease, some fungi may affect seed germination. Processing aims to improve the characteristics of a seed lot through the removal of impurities and of seeds that present undesirable characteristics. The seed characteristics such as size, shape and weight are taken into account. Some pathogens may affect seed development, making them smaller, wrinkled or deformed. Our purpose was to check the effect of processing on bean seed health and germination. The samples were characterized as follows: fields I and II (first and second stages), III (third stage), IV and V (fourth and fifth stages). In fields I, II and III white mold and angular spot were detected, while in fields IV and V angular spot and *Fusarium* wilt occurred. The health of samples was evaluated using 3 methods (blotter test, modified blotter test and semi-selective medium); for germination we used the roll paper method. The bacteria *X. axonopodis* pv. *Phaseoli* was not found. *S. sclerotiorum* was detected in two samples and, after the processing, it was eliminated from one of those samples. *P. griseola* was detected in almost all samples but processing did not eliminate the fungus from the seeds. The results showed that processing had not eradicated the seed pathogens and had not improved the germination.