

Effect of seed maturity on sensitivity of seeds towards physical sanitation treatments

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Summary

Physical sanitation methods are used by the seed industry to prevent transmission of seed-borne diseases, but sensitivity varies between seed lots. The effect of seed maturity on the sensitivity to hot water, aerated steam and electron treatments was studied. Two *Brassica oleracea* L. and two *Daucus carota* L. seed lots from commercial production were selected for containing relatively large amounts of less mature seeds. Each seed lot was sorted into three maturity fractions based on the levels of chlorophyll fluorescence of individual seeds. Less mature *B. oleracea* and *D. carota* seeds were more susceptible to hot water treatments and less mature *B. oleracea* seeds to the aerated steam treatment. Seed maturity did not influence the sensitivity to the applied electron seed treatments. Seed lots were not selected for infections with seed-borne pathogens, however the less mature seeds were observed to be more frequently infected. It would be advisable to harvest seeds as mature as possible and to remove less mature seeds during seed processing. Sorting seeds by their level of chlorophyll fluorescence provides a useful method of sorting *B. oleracea* and *D. carota* seed lots. This would result in more efficient physical sanitation of seed lots.