

206 - THE INFLUENCE OF AERATED HYDRATION SEED TREATMENT ON TOMATO SEED INVIGORATION

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Single seed lots from two varieties of tomato, Falat C-H and Early Urbana Y were identified as having low and high vigour, based on the initial assessment of laboratory germination (LG) and controlled deterioration (CD) vigour test (20% mc and 45°C for 24 h). Seeds of each lot were also aged at 20% mc and 45°C for 24h. Aerated hydration (AH) treatment of unaged and aged seeds was carried out for 6 to 48 h in perspex columns with deionised water, placed in a growth cabinet at 20°C and aerated by an aquarium pump. Both unaged and aged seeds of Falat (low vigour) seeds had 93% germination with 40% and 16% normal seedlings respectively. Unaged Early Urban Y (high vigour) had 99% germination and 96% normal seedlings, while aged seeds had 95% germination and 90% normal seedlings. AH treatment improved the number of normal seedlings in Falat C-H from 40% to 93% and from 16% to 91% in unaged and aged seeds respectively. In contrast AH treatment had no

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clear effect on Early Urban Y seeds improvement. Therefore, AH treatment clearly improved the vigour of low vigour seeds (cv. Falat C-H) in terms of the number of normal seedlings. This observation could be explained by the repair of the deterioration that had led to the low vigour and high proportion of abnormal seedlings in Falat C-H seeds.