# *In vitro* assessment of seed germination and early seedling growth of Sri Lankan tomato varieties (*Lycopersicon esculentum*) under salt stress conditions

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The study was aimed at finding the effect of salt stress on germination and early seedling growth of three improved local varieties of tomato namely "Maheshi", "Rajitha" and "Thilina". Seedlings were grown on filter papers supplemented with 0 (water control), 50, 100 and 150 mMNaCl solution. Percentage of germination, shoot and root lengths and proline contents were assessed. Percentage germination after 7 days of sowing was the highest in "Maheshi" (93%), followed by "Rajitha" (78%) and "Thilina" (59%) in NaCl-untreated control. Germination was remarkably declined at 100 mMNaCl showing 20%, 13% and 5% in "Maheshi", "Rajitha" and "Thilina" respectively. Seeds did not germinat at 150mM NaCl except for "Maheshi" (2%). Salt stress had a negative impact on the shoot and root growth. Compared to the control growth condition, at 100 mMNaCl, no significant reduction in shoot length was observed in "Maheshi" while 18-33% reduction was observed in other varieties. At 100 mM, compared to the NaCl-untreated control, primary root growth was significantly reduced by 55%, 79% and 93% in "Maheshi", "Rajitha" and "Thilina" respectively. Accumulation of proline increased with increasing salt stress. However, at 100 mMNaCl, there was no significant difference in the proline accumulation levels among varieties. The results indicated that seed germination was strongly affected by 100 mMNaCl stress but "Maheshi" was comparatively tolerant. Growth of roots, least affected in "Maheshi" and"Thilina", was more susceptible for salt stress during early seedling growth.

**Keywords**: germination, salt stress, tomato