

Embryo rescue of *Prunus persica*: Medium composition has little influence on germination

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There is a demand for peach varieties that fruit in late September or early October in South Africa. This has resulted in the breeding programme selecting parental material to obtain early ripening progeny with a short fruit development period. So far, efforts to develop such early fruiting varieties have had limited results due to low germination rates and low root initiation during embryo culture. The embryo rescue method would increase germination rates, and the objective was to test if the tissue culture medium can be improved to enhance the germination efficiency. Embryo rescue from open-pollinated early-ripening 'Honeyblush' peaches was done to establish a procedure. Four published tissue culture media, namely, Woody Plant Medium, N6 medium, K2 medium, and MS medium were tested. Activated charcoal (AC) was used to supplement all media in a second set of experiments. The germination of embryos on medium without the AC supplements produced normal plants with roots and leaves, only epicotyls or roots, cotyledons that expanded and unfolded, cotyledons expanding unevenly, radicles that became necrotic or no growth response. Bacterial growth in the medium surrounding the embryos was evident in many tubes. The trend in germination responses on the four media without AC was similar. The bacterial contamination in the AC containing media was not visible. When the results are combined, 35% of the embryos exhibited some growth by developing into complete plants (12%), sprouting epicotyls (8%), or roots (2%), the cotyledons opened (8%) or developed to a small extent (5%). The acclimatization was a limiting factor for successful raising of seedlings, and the waterlogging of roots during the *in vitro* acclimatization phase needs to be resolved before the next season.

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