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Detection of a new medium for budwood culture in vitro of citrus

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Abstract: The transfer of new and quality citrus species and cultivars from one country or growing area to another may lead to the introduction of new pests and diseases. Therefore the import and direct production of citrus budwood without adequate control measures has a high risk. The citrus virus and virus-like disease agents can be successfully eliminated using the shoot-tip grafting (STG) technique which is routinely used to obtain virus-free plants in citrus improvement programs in major citrus-growing countries. Many methods are used to obtain flushes as a source of scion material for STG in vitro. The budwood culture in vitro is one, used to obtain flushes from bud sticks for STG. The budwood culture medium is composed of Murashige and Skoog (MS) salt solution and is used to culture the plant in vitro after shoot-tip grafting. This research was conducted with the objective of simplifying the usual procedure of budwood culture. Instead of culturing in tubes containing nutrient medium and fine sand as a substrate, a new medium with distilled water without salt solution or sand was tried, to obtain flushes from Washington Navel orange (*Citrus sinensis* (L.) Osb.), Minneola tangelo (*Citrus reticulata* x *Citrus paradisi*) and Interdonato limon (*Citrus limon* (L.) Burm.) cultivars. Distilled water medium is more practical and more economical than usual the medium composition. This new medium has been used successfully with several cultivars (especially imported) of sweet orange, mandarin, lemon, grapefruit and ornamental citrus to obtain a source of shoots for STG at the Subtropical Fruits Research and Experimental Centre of the University of Çukurova since 1993.

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