

Abstract

The selection of the good mother plants is an essential component of virus-free seedling production. The mother plants as initiated explants for *in vitro* propagation must be healthy and completely virus-free. The objective of this study was to investigate the suitable method for the *in vitro* propagation of virus-free passion fruit No.2 plants.

From the preliminary survey about passion fruit planting in 8 farms from different planting areas in Research Stations of the Royal Project Foundation (RPF), most passion fruit trees showed various symptoms of virus infection, including leaf and fruit mosaic, leaf curl and leaf abnormal formations. However, 4 farms in different areas of RPF were expected as target areas to obtain virus-free shoots. From the selection and collection of virus-free shoots of passion fruit, 720 healthy shoots were obtained and then cultivated by grafting method. We found that more than 90 percent of passion fruit trees were infected by viruses within 2 month after cultivation. However, 9 samples were identified as the virus-free plants by ELISA technique. Furthermore, in the surface sterilization, it was found that the sterilization with 5% (v/v) clorox solution and 0.1% (v/v) Tween-20 on a shaker or a sonicator for 10 minutes were the effective procedures showing the low percent of contamination and the highest percent of explant forming shoots.