

O-28 (57)**SCREENING FOR PATHOGENS: AN ALTERNATIVE METHOD FOR PRODUCTION OF VIRUS-FREE PROPAGATING MATERIALS**

Masoud Naderpour, Dept. of Res. Techno. and Seedling Quality, Improvement, Seed and Plant Certification, and Registration Institute, Karaj, Iran; m.naderpour@areo.ir (Presenting author)

Ms. Raheleh Shahbazi, Seed and Plant Certification and, Registration Institute SPCRI, Nabovvat BLVd, 31535-1516 Alborz Karaj, Iran; Rahelehshahbazi@ut.ac.ir

Ms. Fatemeh Ramazani, Seed and Plant Certification and, Registration Institute SPCRI, Nabovvat BLVd, 31535-1516 Alborz Karaj, Iran; ramazani_f@yahoo.com

Mr. Omid Khalese, Seed and Plant Certification and, Registration Institute SPCRI, Nabovvat BLVd, 31535-1516 Alborz Karaj, Iran; khalesehosseini@yahoo.com

Dr. Abdolreza Kavand, Seed and Plant Certification and, Registration Institute SPCRI, Nabovvat BLVd, 31535-1516 Alborz Karaj, Iran; ar_kavand@yahoo.com

Significant number of plant pathogens specifically systemic pathogens introduced into fields and orchards by plant propagating materials. As no control measures have been developed so far to cope with systemic pathogens, production of "pathogen-free" propagating materials is suggested as the only control strategy. Several methods including thermotherapy, chemotherapy, shoot-tip culture, cryotherapy or a combination of these methods have been developed for production of healthy propagating materials. These methods are expensive and do not guarantee 100% successfulness in eliminating systemic pathogens. Moreover, these methods demand testing materials for pathogens of interest. Here we present an alternative method, "screening of plant propagating materials for pathogens", to establish pathogen-free mother plants. In this method, stocks and scions are checked for pathogens of interest by several reliable detection methods and pathogen-free stocks and scions are grafted. The resulted plants are kept under the screen house conditions and met several times of checking for pathogens for two growing seasons. The healthy plants could be used as a reliable mother plants. This method has been used successfully for production of mother plants of several olive, pome and stone fruit cultivars. Serological, biological and molecular assays using endemic isolate-specific primer pairs, revealed that the resulted plants are free from viruses indicated in the national standards of propagating materials of olive (4 viruses), pome and stone fruits (11 viruses). Compared to the other techniques, this method is more reliable, cheaper, and specifically, quite safe regarding on genetic variations that normally happens in some of the present methods.

Keywords: Pathogen elimination, RT-PCR, nuclear stocks