P 510

DNA-BASED MOLECULAR CHARACTERIZATION OF FUNGI ISOLATED FROM 'HURMA' OLIVE

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Turkey is an important table olive (Olea europaea L.) producer. 'Hurma' olives grown in Karaburun Peninsula, differ from other varieties that fully ripen on the tree before harvesting and loose its bitterness caused by phenolic compounds (oleuropein). Thus, they can be directly consumed after the harvesting. It was stated in limited literature that the debittering phenomena during maturation occurs by a fungus, Phoma olea with the climatic conditions. The identification of fungi has mainly been made through morphological and physiological parameters. Additionally, molecular techniques have been used, such as the sequencing of β-tubulin and calmodulin genes, ribosomal DNA genes, their flanking internal transcribed spacers (ITS1–5.8S–ITS2 rDNA region). This study investigated the fungal diversity of 'Hurma' olives that fresh black table olive during the period of between the start of debittering to full ripeness lasted about 8 weeks between the October-December of 2011-2012 harvest years. For the fungi isolation, Potato Dextrose Agar (PDA), Oatmeal Agar (OA), Sabouraud Dextrose Agar (SDA), Czapek Agar (CZA) were used with incubation at 25℃ for 3-5 days. Pure cultures were isolated by streaking onto PDA incubated at 30℃. Then the isolates were grouped based on morphological characteristics as color, texture of the mycelia, cell structures and spore formation under stereo and light microscopic observations of fresh cultures on PDA and CZA plates. Identification included comparison of their polymerase chain reaction applied with V9G and ACTIN primers, followed by nucleotide sequence analysis. Aspergillus and Penicillium genus were found, followed by Phoma, Colletotrichum, Emericella, Botryosphaeria, Fusarium.

Keywords: Hurma olive, fungi, molecular, PCR, actin, V9G

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