

Project Title : Investigations on Natural Spread of Hypovirulent *Cryphonectria parasitica* Strains Used for Biological Control of Chestnut Blight

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Supporting Body : GDAR (General Directorate of Agricultural Research and Policy)

Leader : Dr. Mükerrerem ÇELİKER

Co-researchers : Prof. Dr. Ersin ONOĞUR, Dr. Dilek POYRAZ, Dr. Barbaros ÇETİNEL, Dr. Cevdet KAPLAN, Ayşe UYSAL

Summary : Chestnut trees are economically important for fruit and timber production. There are 2,470,000 chestnut trees in Turkey and 1,379,229 chestnut trees in the Aegean Region (Anonymous, 2005). Chestnut blight is the most important disease in the chestnut groves of Turkey and chemical control of the disease is not exist. Quarantine measures and cultural practices are recommended for controlling the disease in Turkey. In addition to cultural practices, biological control with hypovirulent strains against to chestnut blight is in practical use in several countries (Heiniger and Rigling, 1994).

A study was carried out to tackle this serious problem of chestnut groves between 2003 and 2005 in a pilot area of Manisa province , which had only virulent population. There is no hypovirulent strain in Ege Region. So that all the cankers (29 active cankers on 18 chestnut trees) were inoculated with the hypovirulent isolates from Marmara region.

One year after the inoculation, cankers inoculated with hypovirulent isolates healed and the hypovirulent strain was re-isolated from all the healing cankers in 2004-2005. In the study, doing sanitation practices to decrease of infection sources was planned but could not be done. Thus lots of inoculated trees (11 of 18 trees) were killed by the chestnut blight and other diseases. Because of this reason, the study was ended in 2005. In the study, aim of biological control of chestnut blight using hypovirulent strain was achieved but the natural dissemination of hypovirulent strains couldn't be determined in the pilot area.

When the topic plot area was visited in 2007 and 2008, occurrence of new healing cankers were seen on the stem of some trees (22 trees). Because of this reason, natural dissemination is thought to be present in the same area and so a new research project is prepared. In the study, we will collaborate with Ege University Ege University Faculty of Agriculture Department of Plant Protection and İzmir Regional Environment and Forestry Foundation.

In the project, firstly infected branches and killed trees will be cut and destroyed in the studying area. Then cause of the new

healing cankers will be determined by laboratory tests as hypovirulence or low virulence. Effects of vectors and some environmental factors (temperature and relative humidity) on natural spreading of hypovirulens will be searched.

The study on 'biological control of chestnut blight by hypovirulent strains in chestnut grove' was the first experiment for Turkey (Çeliker ve Onoğur, 2007; 2008). The study on 'natural spreading of hypovirulens' also will be first experiment for Turkey