

Project Title : Determination of *Fusarium Spp.* as Causal Agents of Stalk and Ear Rot Diseases, Their Mycotoxins and Sources of Resistance Against Mainly Species in South Marmara Region Maize Areas

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Supporting Body : GDAR

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Summary : In this study, *Fusarium* spp. on maize as causal agents of stalk and ear rot diseases and their mycotoxins formed on corn were determined in South Marmara maize areas where is one of the important maize growing area in Turkey. In addition determination of source of resistance was studied for solution of problems.

To determine of situation of diseases and *Fusarium* species as causal agents of these diseases, survey studies were carried out in South Marmara region. For stalk rot diseases in 2003, 66 maize samples were collected, and 149 samples in 2004. The diseases rate was determined 75% and 85% in 2003 and 2004, respectively. The most important *Fusarium* sp. caused stalk rot disease was found as *F. moniliforme* in both 2003 and 2004 years. In 2003, 177 maize samples were collected for ear rot diseases, 232 samples in 2004. The diseases rate was determined 51% and 56% in 2003 and 2004, respectively. The most important *Fusarium* sp. as a causal agent of stalk and ear rot diseases was found *F. moniliforme* in both 2003 and 2004 years.

Because of *F. moniliforme* and *F. graminearum* were found the most important species for ear rot on maize, the mycotoxins tests were carried out for Fumonisin and Deoxynivalenol. In these tests, high mycotoxin amount was found on samples showing high isolation rates. The average of Fumonisin in investigation area was found 6,54 ppm in 2003 and 1,73 ppm in 2004. The average of Deoxynivalenol was founded 0,74 ppm in 2003 and 2,64 ppm in 2004. Mycotoxin amounts were occurred relatively greater than limits of Turkey and EU. The tests to determine the source of resistance, none of 48 genetic materials was found resistant to both diseases.