

**Project Title** : Determination of the Best Forecast Model for the Prediction of the Tomato Late Blight [*Phytophthora infestans* (Mont.) de Bary] in the Field Tomato Growings of Aydın Province

**Start Date** : 2015

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

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**Summary** : Tomato is produced in every provinces of Turkey. Turkey produced a total of 11 003 433 tonnes of tomatoes in 2011. This consolidates its position of the fourth largest producer of tomatoes, after China, India, the United States. Late blight caused by *Phytophthora infestans* (Mont.) de Bary is the most important limiting factor during tomato production. It is a severe disease of tomatoes and it causes great economic losses. The application of fungicides plays a significant role in the control of late blight of tomatoes. Taking into consideration the relationships among the pathogen, host and environmental conditions, appropriate forecasting systems which avoid epidemics can be developed. Stations of electronic estimation and early warning indicate risk times for late blight activity and reduce the amount of fungicide sprays needed to effectively manage late blight. In this project it is aimed to determine the most appropriate forecasting model to predict infection of tomato late blight in the tomato growing areas of Aydın. In Aydın a late blight epidemics was occurred in 2011. The Plant Health and Quarantine Work Program and Principles 2012 took a decision to study forecasting systems in Aydın. This project is prepared to realize this decision and will be carried out in tomato growing areas of Aydın province (Merkez) between the years of 2015-2017. An electronic estimation and early warning station will be established in Aydın and the validation of three forecasting models (SMITH, TOMCAST and modified TOMCAST) for the prediction of tomato late blight will be carried out. After the emergence of tomato, the study will be started. It is planned to visit the fields twice a week or weekly to determine the occurrence of the symptoms of late blight until harvest. Meteorological data of temperature, relative humidity, leaf wetness and rainfall will be provided by electronic estimation and early warning station. Actual data when late blight naturally observed in the field and predict infection data of models will be compared. The most suitable disease forecasting system for Aydın will be chosen. This project will indicate risk times for late blight activity and aid in identifying critical times for preventative fungicide application and therefore the use of disease-forecast systems will reduce the amount of fungicide sprays needed to effectively manage late blight. As forecasting systems become widespread, unfavourable results of chemical disease control methods such as high costs and environmental pollution, will be avoided.