

**Impacts of Climate Change on Biodiversity of Plant Pathogens**

Eray ŞİMŞEK<sup>1</sup>, Mehmet MAMAY<sup>1</sup>, Mehmet E.GÜLDÜR<sup>1</sup>

<sup>1</sup>Plant Protection Department, Agricultural Faculty, Harran University, Şanlıurfa/Turkey  
eraysim@harran.edu.tr

**Aim of the Study:** Climate change is thought to cause some behavioral and metabolic changes in plant pathogens as well as in all other living organisms. With the decrease in precipitation, increase in the amount of CO<sub>2</sub> in the atmosphere and changes of ozone level could be seen as visible part of the iceberg. Plant pathogens adapt more quickly to changing environmental conditions than plants. For this reason, some countries whose economies based on agriculture will be in danger and perhaps starvation problems will begin. The number of studies on this subject is relatively scarce. The aim of this study is to compile and discuss the studies on plant pathogen biodiversity resulting from global climate change.

**Material and Methods:** This report used observation method and study literature method. Current studies in this area have been compiled and discussed. And the data obtained from databases of European and Mediterranean Plant Protection Organization (EPPO) and The American Phytopathological Society (APS) were evaluated. This report presents an interpretive review of the literature in biodiversity of plant pathogens.

**Results:** Plant protection is the science and practice of managing pests, diseases and weeds that damage crops and other plants, and which can have a devastating effect on farmer livelihoods. Pathogen development, survival rates, and interferences with host susceptibility are predicted to affect the impacts of disease on crop plants. The change in biodiversity of endophytic microbial organisms living in the soil will indirectly affect the effects of plant pathogens on plants. With these changes, many plant pathogens will spread to new geographical areas and will be able to infect new hosts. Studies have shown that climate change is adding new challenges to plant protection. Because of changes in the distribution of different pathogens to new areas with climate change, the fungicide market will definitely change. Not only chemical control methods but also biological control methods will change because the effectiveness of biological management agents varies with different environmental conditions. Evaluating and estimating the efficacy of current control methods under changing climatic conditions for overcome the predicted changes will be of great strategic importance.

**Keywords:** Climate change, pathogen biodiversity, temperature, plant pathogens.