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**Variable trends in major diseases of maize in the global climate change scenario**

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Maize (*Zea mays* L.) is an important cereal crop of the tropical and subtropical regions of the world and holds an important position in agricultural economy of the world. Maize is the third most important cereal crop in India next to wheat and rice with about 9.26 million hectares area under cultivation and an annual production of 2.4 million tons. To meet out the rising demand of maize for food, feed, fodder and industrial consumption huge investment is done for crop improvement program every year. However, yield losses due to pre and post-harvest diseases particularly wilts, seed rots, seedling blights, root and stalk rots, foliar diseases and ear rots caused by several genera of fungi (*Rhizoctonia*, *Fusarium*, *Macrophomina*, *Bipolaris*, *Excerohilum*, *Polysora*, *Sclerophthora*, *Peronosclerospora*, *Curvularia* and *Cephalosporium*), bacteria (*Erwinia*) and viruses (maize streak virus, sugarcane mosaic virus, maize stripe virus, maize chlorotic virus) is a serious concern for maize program in India and amounts to monetary loss to the farmers. In the global climate change scenario the virulence pattern of the diseases on maize is changing every year. Investigation was undertaken to study the disease pattern of eight major diseases in maize in the last five years (2014-18). Severity of diseases on inbreds/hybrids was examined. Survey and surveillance was

done in the maize cropping zones of India to examine the spread of diseases to new areas. The foliar and soil borne diseases showed increased severity over the period of five years. diseases were also recorded to new areas for banded leaf and sheath blight (BLSB), curvularia leaf spot, maydis leaf blight (MLB) and post flowering stalk rot (PFSR). Yield loss assessment showed a sharp increase for BLSB, MLB and PFSR over the years. The rising trend of maize diseases may be due to emergence of more virulent races of the pathogens in nature due to unpredictable environmental conditions in the changing climate scenario.



**Biography**

Mehra R has completed his Ph. D from CCS Haryana Agricultural University Hissar, in Plant Pathology. He is Principal Scientist (Plant Pathology) at CCS Haryana Agricultural University, Regional Research Station, Karnal (India), associated with maize and sugarcane research in India. He has received several excellence awards, owns editorial board and position in different professional societies, guided 7 MSc/PhD students in Plant Pathology & developed/identified several varieties of maize, sugarcane and vegetable crops high yielding and resistant to major diseases. He has expertise in epidemiology studies, host resistance and integrated management of important diseases. Dr. Mehra has headed several monitoring visits of nationwide experiments for sugarcane and maize in various agro ecological zones of India. He has published more than 80 papers in reputed Journals; presented 75 papers in different National/International conferences; 33 book chapters/manuals; 3 edited books, 115 magazines articles, delivered 300 lectures as resource person in different National/International trainings, delivered 19 radio/TV talks.

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