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“Development on the margin”

Symptoms of *Fusarium proliferatum* on Maize Leaves

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Abstract

Maize (*Zea mays*) is an important food crop and a well-known host of *Fusarium* species. Some of these including *F. proliferatum* are capable of producing large quantities of mycotoxins that are harmful to humans. Different *Fusarium* species have been isolated from maize showing typical rot symptoms at ears or stems. However, no report is available on the symptom development of *Fusarium* spp. on maize leaves, especially for *F. proliferatum* producing fumonisin. Maize plants, cultivar Tassilo, were grown under two different light intensities and durations of 5800–6000 lux, 9 hours per day and 18000–20000 lux, 15 hours per day under climate chamber condition. The plants were inoculated by hand spraying the leaves at BBCH 13–15. Data on disease incidence (*i.e.* the proportion of symptomatic plants within a sampling unit) and re-isolation frequency (*i.e.* the proportion of the leaf tissues colonized by *F. proliferatum*) were collected. For microbial initiation, symptomatic and asymptomatic leaves were incubated on CZID media. Disease incidence of *F. proliferatum* was 40%. Re-isolation frequency from leaves with symptoms was higher than from asymptomatic leaves, with a colonisation frequency of 100% and 63%, respectively. Heavy symptoms of *F. proliferatum* appeared on young leaves emerging from the whorl from 7 days after inoculation. Holes were present in the emerging leaves or folded leaves were rotten. Mild symptoms including white- or brown- round or oval spots were observed on upper leaves. On old leaves, the symptoms appeared later and less severity with brown or yellow lesion ranging from 0.5 to 2.5 cm in length and mostly at the leaf edges. The same symptoms of *F. proliferatum* were also detected in the green house during winter with low light conditions. This indicates that the symptoms of *F. proliferatum* appear on maize leaves under less ideal condition of plant growth.

Keywords: *Fusarium proliferatum*, maize leaves, symptoms