Prevalence and incidence of sorghum diseases in production fields in Niger during the 2019 growing season

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Introduction

Sorghum is the second cereal consumed in Niger after millet. An average of 3.3 million hectares are cultivated per year. Sorghum occupies 20.44% of cultivated areas, which represents 19% of national cereal production. Naturally, sorghum faces high parasitic pressure due to insects, pests, weeds, and diseases. This study was conducted to investigate the occurrence, distribution, and severity of foliar and panicle diseases affecting sorghum in farmers’ fields from the top 4 major production regions in Niger and to validate the information gathered during the 2019 growing season.

Material and Methods

Major sorghum production regions of Dosso, Maradi, Tahoua, and Tillabéri were surveyed for foliar and panicle diseases of sorghum in Niger (West Africa). Plants at soft to early hard dough stages of development were assessed for disease prevalence, incidence, and severity. To cover the whole field, a W-shaped pattern was used. 121 fields in the regions of Tillabéri, Tahoua, Dosso, and Maradi in Niger were surveyed. Sixty plants/field were assessed/filed.

Results and discussions

Twenty-one different sorghum diseases, including anthracnose, long smut, oval leaf spot, leaf blight, head smut, and zonate leaf spot were documented in Niger. Prom et al. (2021) and Prom et al. (2023) found respectively 15 and 19 sorghum diseases in Senegal and Niger.

The highest mean incidence of anthracnose, leaf blight, and rough leaf spot was recorded in Maradi; whereas, the regions of Dosso and Tahoua exhibited the highest mean oval leaf spot incidence. Among the regions, overall mean long smut incidence was highest in Tahoua, Dosso, and Tillabéri.

Conclusion

The information generated on the prevalence and incidence are vital components that can be utilized by scientists, producers, funding agencies, and government officials to estimate relative economic impact of these various sorghum diseases in Niger.

Litterature cited: