



## Prevalence, Incidence and Severity of Sorghum Diseases in Production Fields in Niger during the 2022 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, that represents 19% of national cereal production. Naturally, sorghum faces high parasitic pressure due to insect 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 five major production regions of Niger and to validate the information gathered during the 2019 growing season

### Material and Methods

Major sorghum production regions of Dosso, Maradi, Tahoua, Tillabéri and Zinder were surveyed for foliar and panicle diseases of sorghum in Niger (West Africa).

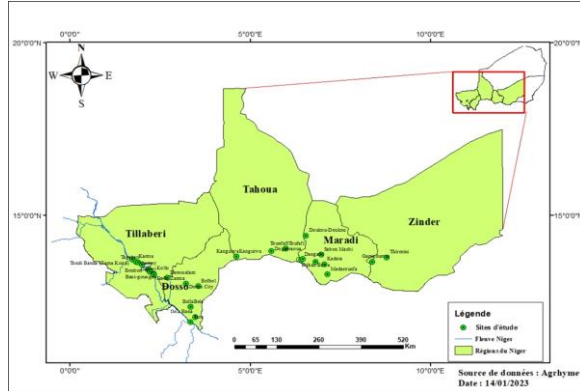
Plants at soft to early hard dough stages of development were assessed for disease prevalence, incidence and severity, To cover the whole field, a W-shaped pattern was used.

### Results and Discussion

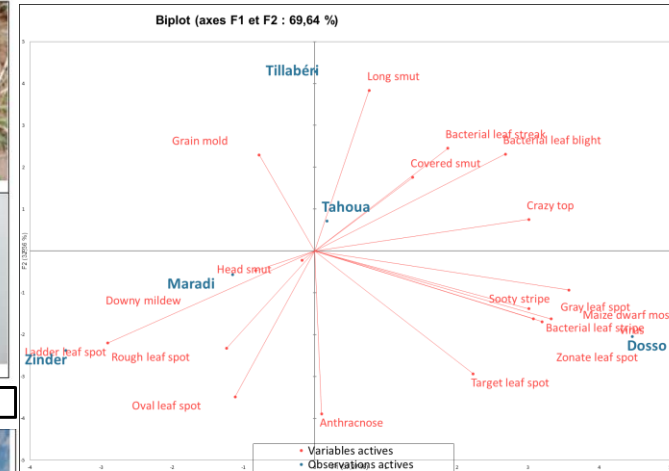
19 diseases were encountered in farmers' fields . Prom et al. 2019 found 21 foliar and panicle diseases in the same area.

### Literature Cited:

- \*Prom, L. K., Haougui<sup>1</sup>, A., Adamou, I., Abdoukadi, A. A., Karimou, I., Ali, O. B., and Magill, C. (2020). Survey of the prevalence and incidence of foliar and panicle diseases of sorghum across production fields in Niger. *Plant Pathology Journal*, 19 (2) : 106-113.
- \*Campbell, C. L. and Madden, L.V. 1990. *Introducing to Plant Disease Epidemiology*. John Wiley & Sons, Inc. New York. 532 pp.



Foliar (up) and panicle (down) diseases found in Niger



Prevalence of the various sorghum diseases observed across 96 production field in Niger, West Africa

Anthraxose ( <i>Colletotrichum sublineola</i> )	82
Bacterial leaf stripe ( <i>Burholderia andropogonis</i> )	7
Long smut ( <i>Sporisorium ehrenbergii</i> )	46
Oval leaf spot ( <i>Ramulispora sorghicola</i> )	71
Leaf blight ( <i>Eserenihum necroticum</i> )	100
Target leaf spot ( <i>Bipolaris sorghicola</i> )	36
Bacterial leaf streak ( <i>Xanthomonas campestris pv. holcicola</i> )	5
Sooty stripe ( <i>Ramulispora sorghi</i> )	23
Covered smut ( <i>Sporisorium sorghi</i> )	16
Rough leaf spot ( <i>Ascochyta sorghina</i> )	71
Downy mildew ( <i>Plasmopara sorghis</i> )	1
Head smut ( <i>Sporisorium reilianum</i> )	27
Maize dwarf mosaic virus	1
Crazy top ( <i>Sclerophthora macrospora</i> )	15
Gray leaf spot ( <i>Cercospora sorghi</i> )	38
Bacterial leaf blight ( <i>Acidovorax avenae subsp. avenae</i> )	8
Grain mold (Various fungal genera)*	8
Zonate leaf spot ( <i>Gloeosporium sorghi</i> )	43
Ladder leaf spot ( <i>Cercospora fusimaculans</i> )	7

Mean incidence and severity of Anthracnose, Leaf Blight, and Rough Leaf Spot across the five regions surveyed in Niger 2022

Region	Anthracnose		Leaf blight		Rough leaf spot	
	Inc	Sev <sup>2</sup>	Inc	Sev	Inc	Sev
Dosso	43	10	80	20	42	8
Maradi	56	11	89	30	30	8
Tahoua	35	7	95	29	48	10
Tillabéri	24	5	72	17	18	4
Zinder	55	7	94	18	38	10

### Conclusion

The information generated on the prevalence, incidence and severity 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.

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