Cotton growth compensation affected by *Fusarium oxysporum* and root-knot nematodes in Benin (West Africa)

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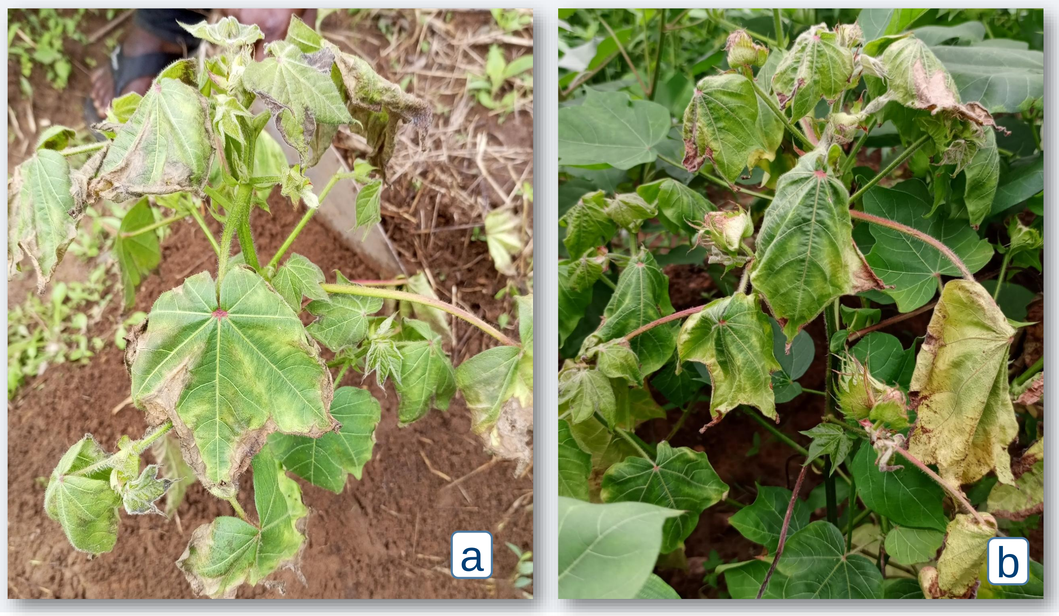
Introduction

- *Fusarium oxysporum* f. sp. *vasinfectum (FOV)* infects cotton roots causing wilting (a) and vascular discoloration (b)
- Severity increases with *Meloidogyne incognita* co-infection
- Dual infection leads to severe damage



Objective:

Assess *FOV* densities and root-knot nematodes effects on collar diameter, height, flowering and bolls production of three cotton varieties: OKP 768, ANG 956, and KET 782.

Material and Methods

- Cotton varieties OKP 768, ANG 956, and KET 782 tested against Meloidogyne incognita (1.500 J2/pot) and Fusarium oxysporum (conidial doses of 2.10^6 to 1.10^7);
- 12 treatments: Control, Nem, Fusarium only (D1–D5), and Fusarium combined with nematodes (D1Nem–D5Nem); randomized block design with 6 replicates;
- Collected growth, disease, and nematode data; analyzed using ANOVA, linear models, Pearson correlation in R (v4.4.2).

Results

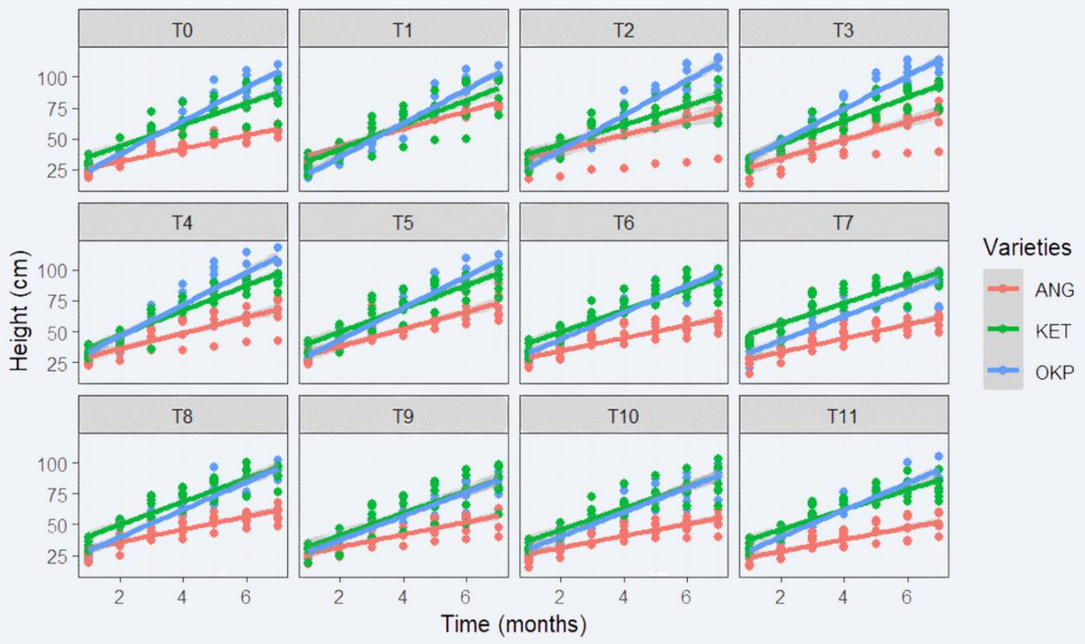


Figure 1:Cotton plants height evolution

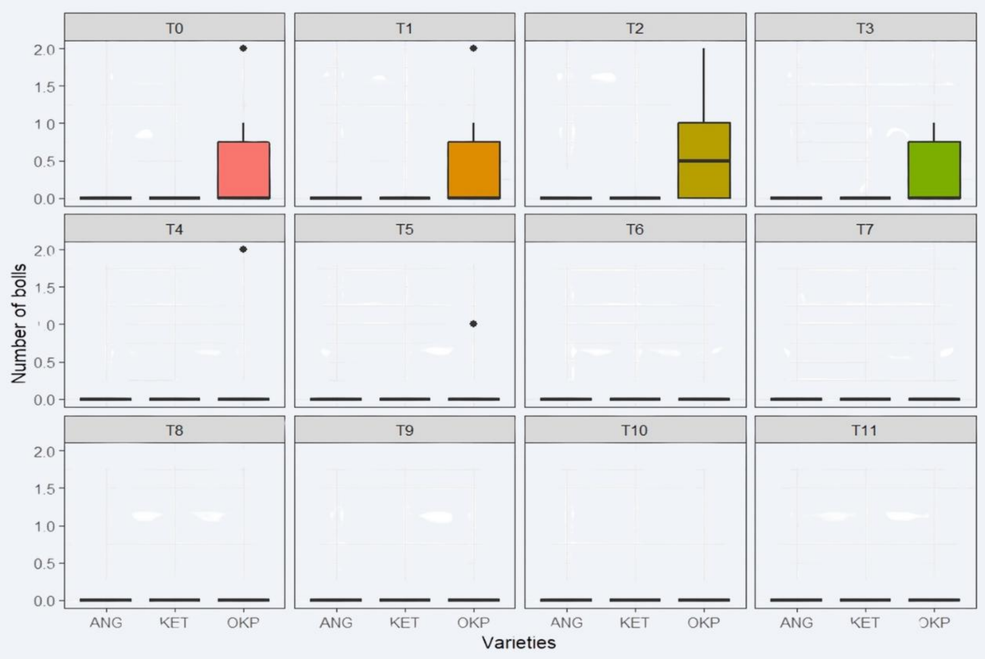


Figure 2:Cotton bolls production

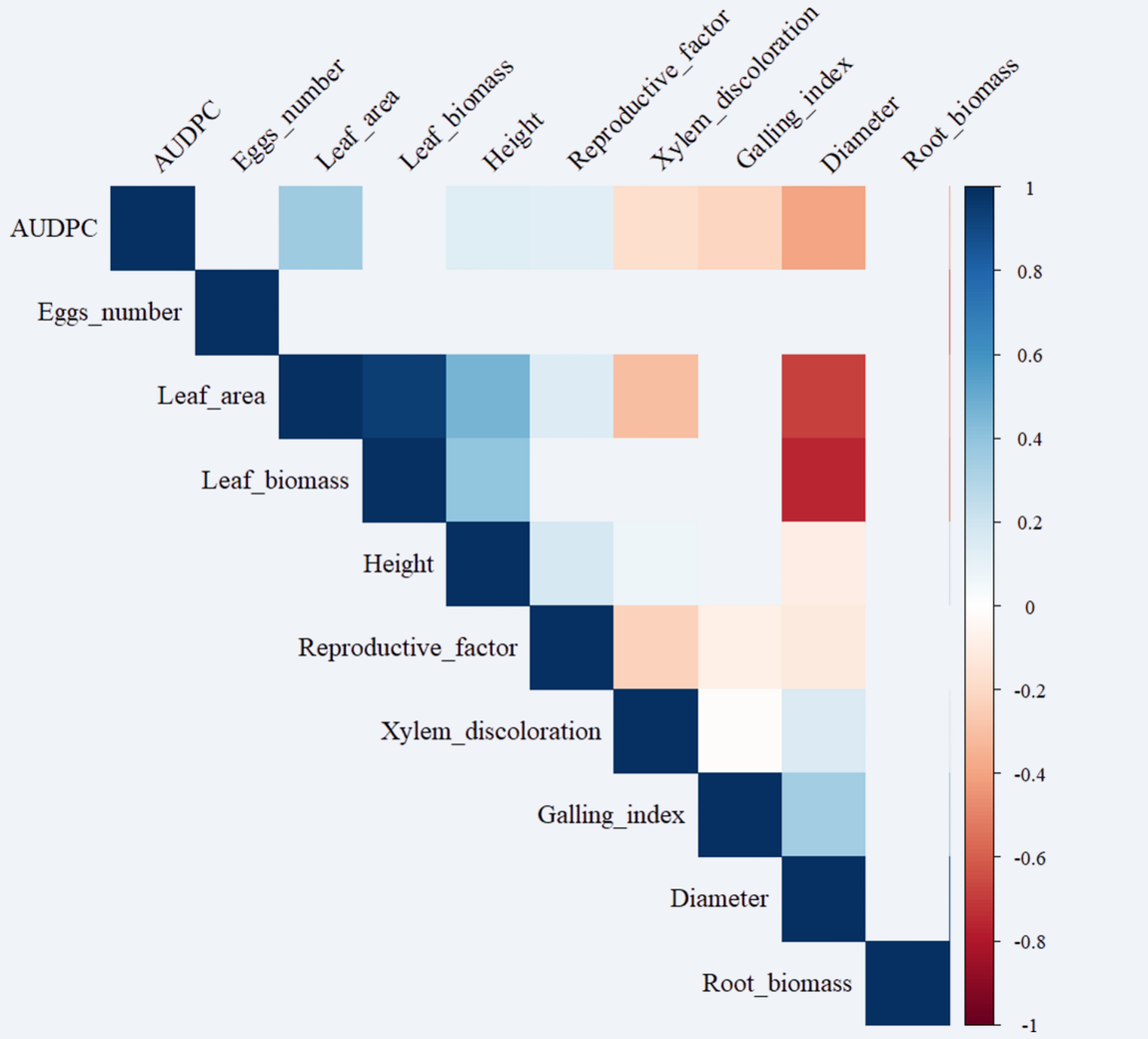


Figure 3:Correlation between cotton growth, disease infestation and nématodes

- OKP 768 showed higher tolerance with sustained growth and reproduction;
- Nematodes presence generally affected plants growth;
- *Fusarium* applied at 8.10^6 and 1.10^7 with nematodes are more threaten to plants.

Conclusion

❖ **High *FOV* and *M. incognita* levels severely reduced cotton growth.**

❖ **ANG 956 and KET 782 were highly susceptible to *FOV* with no reproductive development.**

❖ **OKP 768 showed greater tolerance to *FOV*, making it suitable for resistance breeding.**

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