

Predicting Tiller Survival in Sorghum

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Crop growth models (CGM) are a valuable tool for **interpreting** crop responses to multiple scenarios. Demaree, Paula, van Oosterom, Erik, and Hammer, Graeme



Canopy dynamics plays an important role in the **simulation** of crop growth, biomass accumulation, and **grain yield** predictions.



Sorghum can **adapt** its canopy development to the availability of resources by **tillering**.



Due to **competition for assimilate**, some initiated tillers will **cease development**. Only a subset of tillers will remain to form the **total fertile tiller number (FTN)**.

Objective

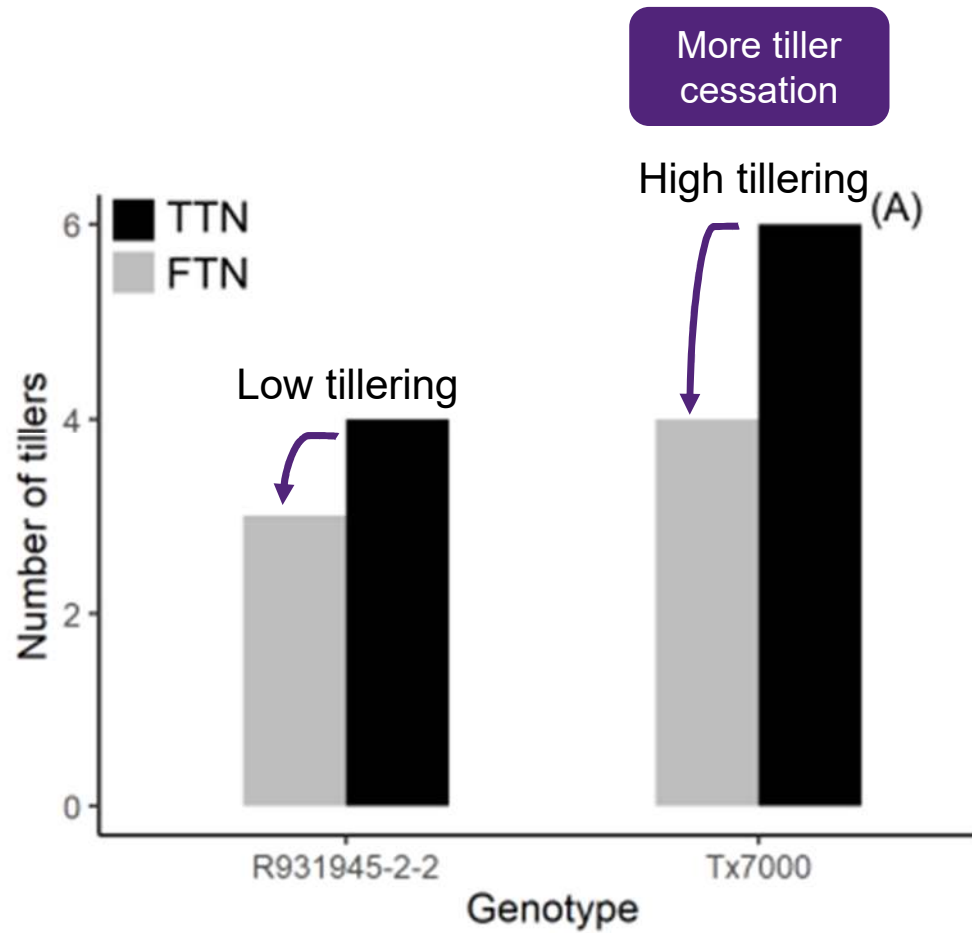
Improve tillering dynamics simulation for sorghum by understanding the physiological traits underlying fertile tiller number in sorghum.

Methods

Two glasshouse experiments were conducted during March and September 2023.

Genotype	Propensity to tiller
R931945-2-2	Low tillering
RTx7000	High tillering

Results

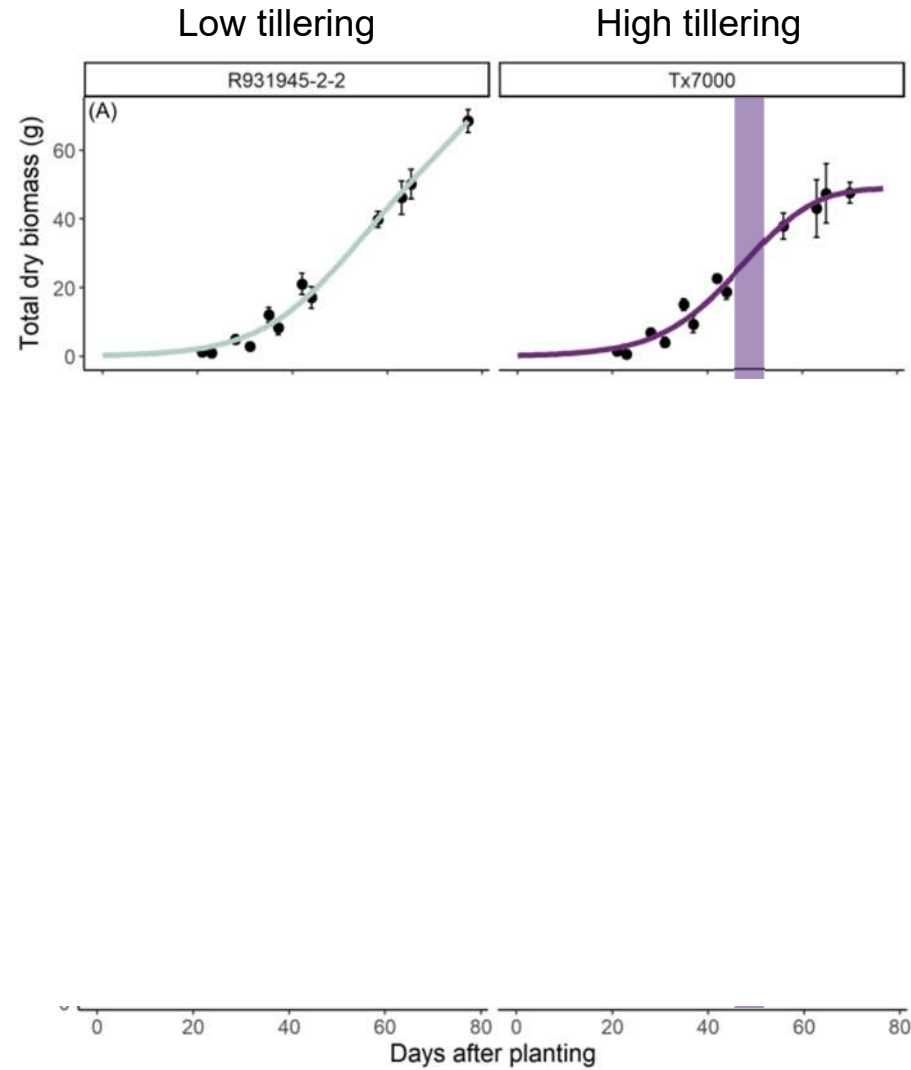


TTN = Total Tiller Number
FTN = Fertile Tiller Number

Main culm

Results

What happened in the main culm?



Internal plant competition at 40-50 DAP

Leaf area development and biomass allocation during the vegetative period play a fundamental role in canopy development and influence the development and cessation of growth of tillers.

Thank you!

Paula A. Demarco

Understanding and quantifying the physiological mechanisms underpinning tillering dynamics is essential for pursuing enhanced adaptation to variable production environments.

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