

Join us for your Master's thesis research

Assessing the temperature response of Sorghum as a future C4 crop for Germany under climate change

Are you passionate about adapting crop production to climate change? Join us in unraveling the temperature response of sorghum as a future crop that can help to cope with the challenges of climate change! Yet, there is a lack of knowledge and understanding regarding the production potential of Sorghum in Germany.

- **Project Duration:** January 2024 - April 2024
- **Location:** Julius Kühn-Institute, Kleinmachnow, Germany

What we are exploring: Temperature is the most critical factor influencing crop development rates. Cardinal temperatures (base, optimum, and maximum) describe the temperature range over which the development rate in a particular species changes. We are studying to **identify the cardinal temperatures** of new cold-tolerant sorghum hybrids tailored for German conditions. We aim to understand how sorghum responds to temperature changes, **tracking its growth and development under varying conditions**. Systematically adjusting temperature variables will help us identify cardinal temperatures and their impact on development rates, **providing crucial data for crop modeling**. To enhance the value of our research, we plan to compare these hybrids with some common French and African varieties.

Research Components:

1. **Germinators:** We use germinators with precise temperature controls to **impose various temperature** conditions. These devices will enable us to investigate sorghum seed germination with high accuracy. We will closely **monitor germination rates to understand the response of sorghum seeds under different temperature regimes**.

2. **Climate Chambers:** Our research extends into climate chambers as controlled environmental conditions. These chambers offer the advantage of **mimicking diverse climates**. By subjecting sorghum to these conditions, we can precisely measure its **responses to temperature fluctuations during its growth**.

How You Can Get Involved:

Are you a fellow researcher, student, or agricultural enthusiast eager to contribute to agricultural science? Join us on this scientific expedition by simply contacting us at Amir.Hajjarpoor@julius-kuehn.de.

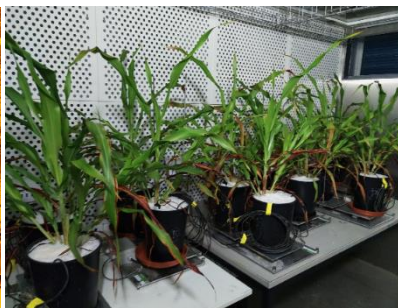
Your involvement in this project could be the key to unlocking Sorghum's potential and ensuring food security for future generations.



Seed germination



Climate chamber experiment



Sorghum's panicle