

Title: “Influence of hedgerows in agroforestry systems on variations in canopy humidity and temperature in maize crops”

The study aims to investigate how the presence of hedgerows at the edges of agroforestry systems affects canopy humidity and temperature in maize fields. By combining field measurements and data analysis, the research will provide insights into the potential benefits or challenges of hedgerows on the microclimatic conditions of maize crops.

Objectives:

1. Measure and compare canopy humidity in maize crops adjacent to agroforestry hedges with those in open environments.
2. Assess the impact of hedgerows on temperature and humidity variations within the maize canopy.
3. Explore the spatial extent of hedgerow influence on microclimatic parameters, considering the distance from the edge.
4. Assess the potential benefits or challenges associated with hedgerows on maize crops.
5. Provide recommendations for optimizing agroforestry system design and hedge management practices based on the findings.

Methodology:

1. Deploy environmental sensors to measure humidity and temperature within maize canopies at varying distances from agroforestry hedge rows.
2. Analyze the influence of hedges on wind patterns and their impact on humidity and temperature.
3. Assess the correlation between microclimatic conditions, crop growth, and yield in areas influenced by hedgerows.
4. Integrate field measurements with spatial analysis to map the extent of the hedgerow effect on maize microclimate.

Expected Outcomes:

1. Understanding the influence of agroforestry hedge rows on canopy humidity and temperature in maize crops.
2. Identification of spatial patterns in microclimatic variations near the edges of agroforestry systems.
3. Insights into the potential benefits or challenges posed by hedgerows on maize crop health and yield.
4. Recommendations for optimizing agroforestry system design and hedge management practices.