



Evaluation of different microclimatic conditions in a linear planting with rows of hybrid biomass poplars combined with maize

Introduction

Linear planting with rows of hybrid biomass poplar trees associated with maize was used to evaluate the effect of microclimatic conditions on the crop's water status and production. The results show that the two poplar rows reduce wind speed by up to 50-70% and that the height of the trees at the end of the shift has a shading effect on approximately one third of the inter-row area. This is the major limiting factor for the crop, but the degree of competition for water also varies within the inter-row, as the presence of the rows changes evapotranspiration: soil moisture is higher in the central part of the inter-row. If on the one hand shading allows the water status to recover, on the other hand it negatively affects production; when compared to the production of the central part of the plot (the least shaded) the decrease in production is more than 25% . The situation is different when compared to the control in 2022, a year characterised by excessive drought: the presence of the rows of trees (and presumably the positive effect on evapotranspiration) makes a difference of 54% when compared to the control.

Lessons learned

Since drought is becoming a more limiting factor in agriculture, there's the need to improve research looking for innovative and traditional solutions. Agroforestry approach is very important in order to mitigate climate change and make ecosystems more resilient to changing conditions.

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Further information

<https://gonewton.it/>



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