

## **BIOTECHNOLOGICAL TOOLS APPLIED FOR FLOWERING PROCESS.**

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The transition of shoot apical meristem from vegetative growth to flowering is the major developmental switch in the plant life cycle. The timing of flower initiation is critical for reproductive success, and plant species have evolved multiple flowering pathways in order to control precisely flowering time. These pathways control both developmental state of the plant and environmental clues of season. Sugarcane become an important crop of the tropics which its biomass is used for sugar and ethanol production. Brazil is responsible for 25% world production and the Brazilian northeast only by 14.3%. This reduced production is because of the genetic background variation (early and late flowering time) and environmental conditions (soil, temperature, photoperiod, genetic variation. In the northeast, flowering has a dramatic effect reducing up to 60% in sugar or ethanol production due to the fact that all the sucrose goes to the flower. The aim of this work is characterized some genes that are involved in the flowering process by subtractive libraries using both early and late flowering time varieties. It has been made six libraries. Ours results have shown that 15-25 % of genes found correspond to unknown genes, 17-30% correspond to transcription factors or related to cell cycle control. It has also observed that some gene expression might be specific to the genetic background. The results obtained will give more information in order to understand how is the flower transition in sugarcane and probably will give some idea when it will be the best time during plant development to spray the flowering inhibitor.

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