
# Gene Controls Flowering Time in Corn

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**WARF: P130256US02**

Inventors: Shawn Kaeppler, Natalia de Leon Gatti, German Muttoni, Jillian Foerster

**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing genetic methods to hasten or delay flowering in maize, rice, sorghum and other plants.**

## Overview

Plant development is marked by three phases: juvenile, adult vegetative and flowering. The timing between phases is known to impact traits like yield, productivity and tissue digestibility. However, the genetic triggers that drive these phase changes are not fully understood.

UW–Madison researchers previously identified a gene in maize that helps control the transition between the juvenile and adult stage (see WARF reference number P120179US02). A similar understanding of flower timing would be valuable as well, potentially leading to improved crops that are optimized for different climates.

## The Invention

The researchers now have found a gene in maize that affects flowering time. By modulating this gene, *GRMZM2G171650*, the onset of flowering in maize may be delayed or accelerated. Standard vector and transgenic methods can be employed to overexpress or suppress the gene, or introduce it into new crop lines.

The gene was identified by studying more than 500 different maize lines. The researchers mapped single nucleotide polymorphisms (SNPs) correlating to early or late flowering traits. A large concentration of such SNPs was located in *GRMZM2G171650*, a transcription factor on chromosome 3. The gene was of previously unknown function in corn.

## Applications

- Controlling flowering time in maize, rice, sorghum, switchgrass and other plants
- Optimizing crops for different climates (e.g., earlier flowering/harvesting for shorter growing seasons)

## Key Benefits

- Altered flowering time could improve properties relating to yield, biofuel, processing, animal feed and disease resistance.

## Additional Information

**For More Information About the Inventors**

- Shawn Kaeppler
- Natalia de Leon Gatti

**Related Technologies**

- WARF reference number P120179US02 describes a gene that can be knocked out to lock plants in the juvenile stage.

- WARF reference number P01338US describes a gene from *Arabidopsis* that delays flowering and can be used to improve production of vegetables and forage crops.

**Tech Fields**

- Animals, Agriculture & Food : Plant biotech

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842