

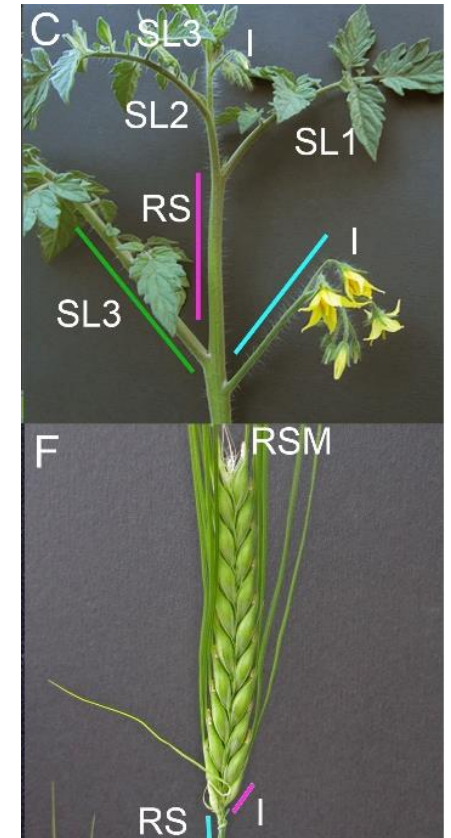
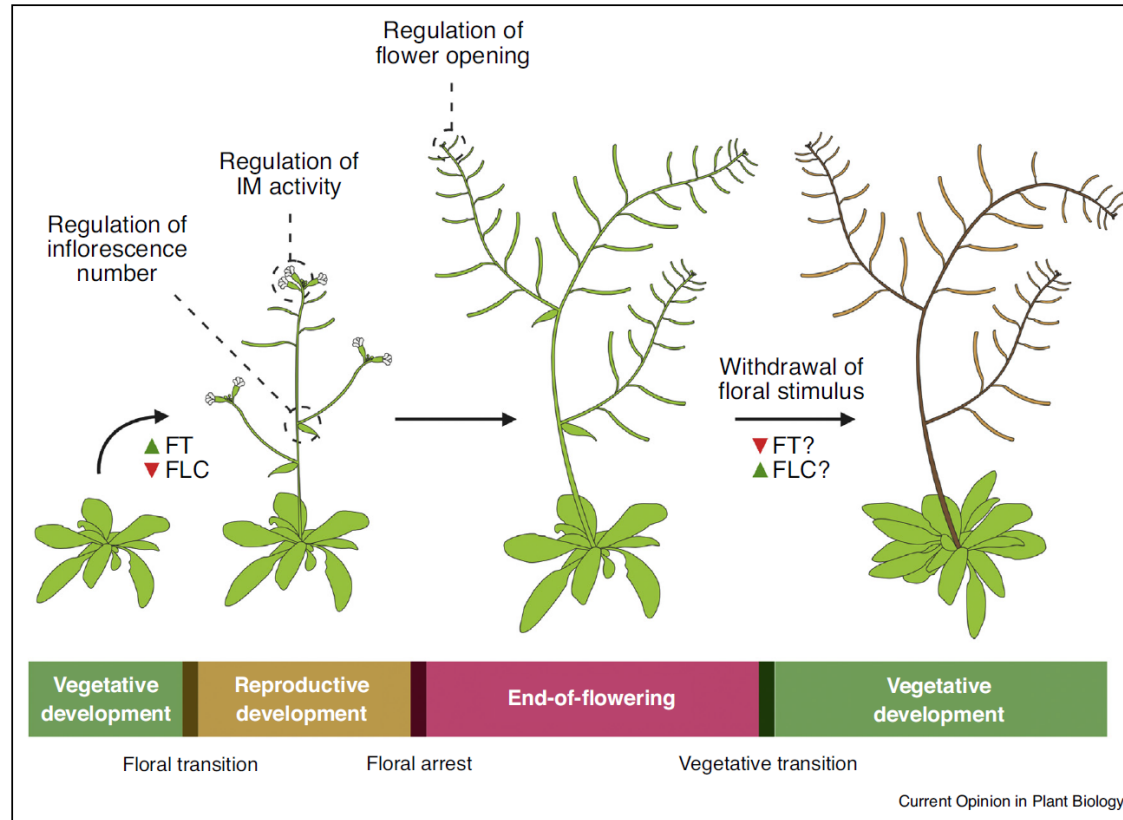
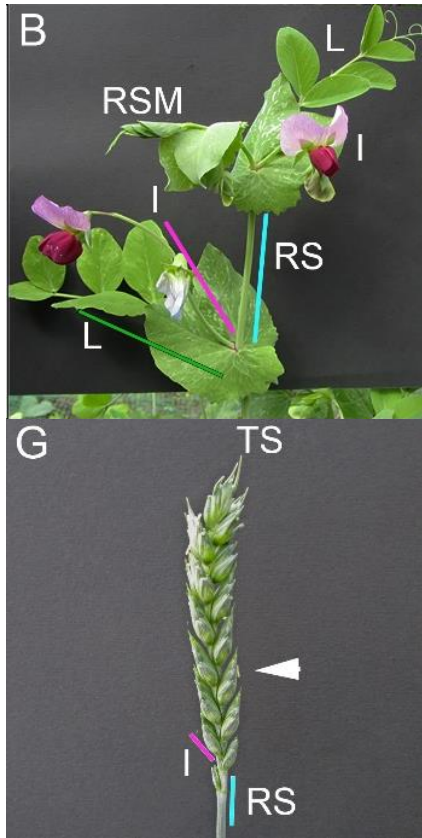
In Need of Arrest

Understanding floral duration in OSR

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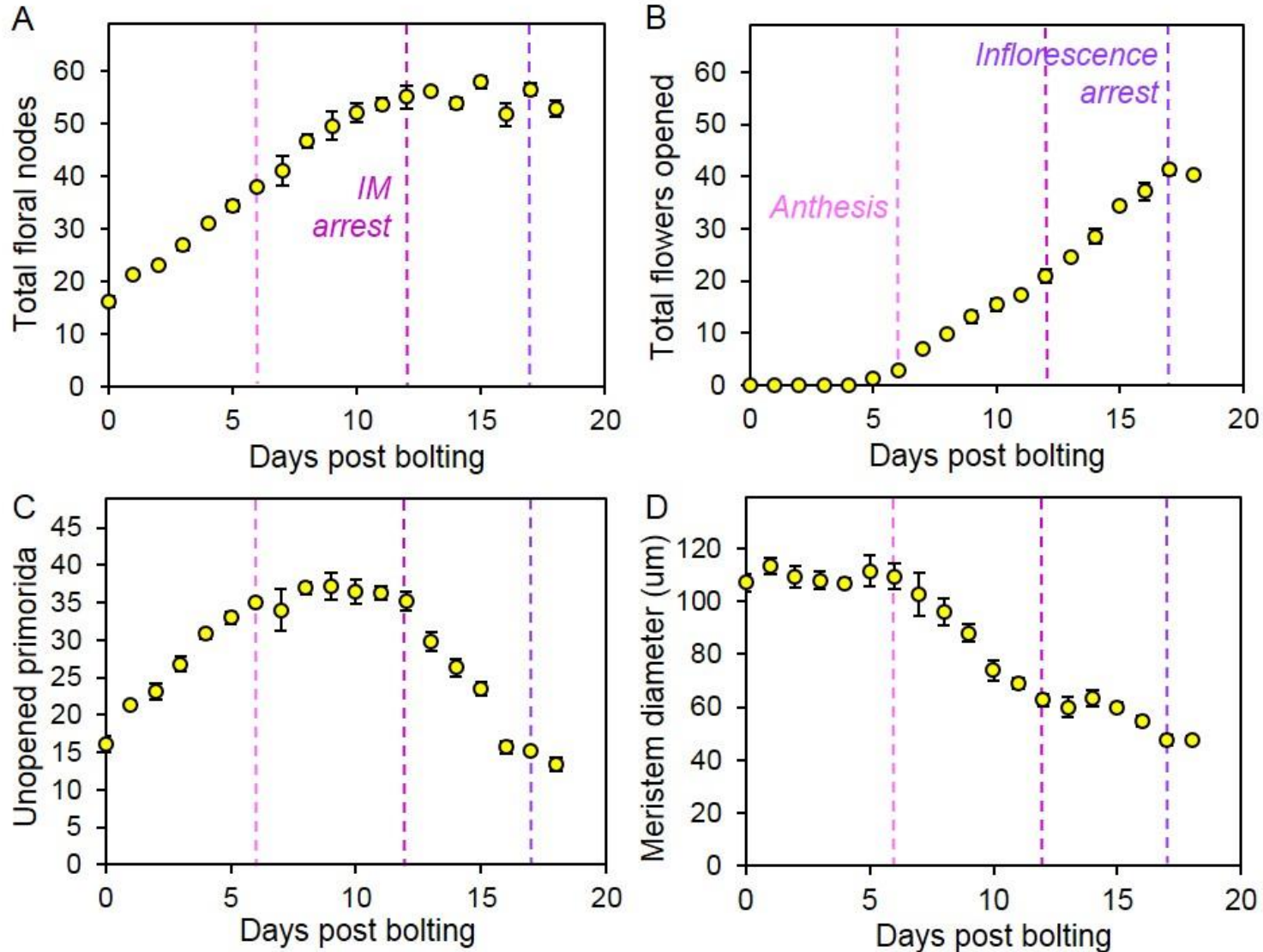
When do plants stop flowering?



Gonzalez-Suarez et al, Curr Opin Plant Biol, 2020

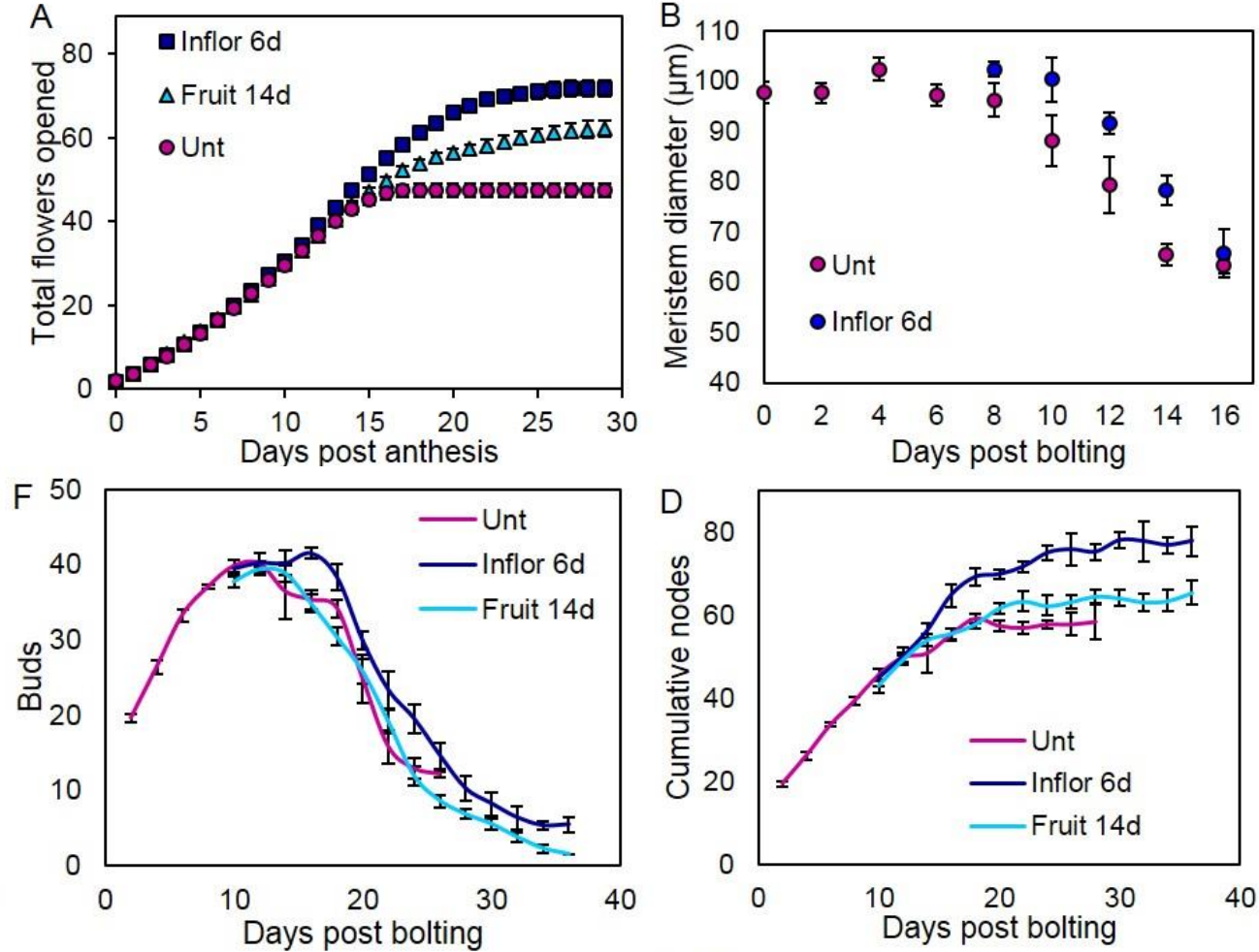
- When do they stop opening flowers, right?
- What is the relevant control point?

How, when and why do plants stop flowering?



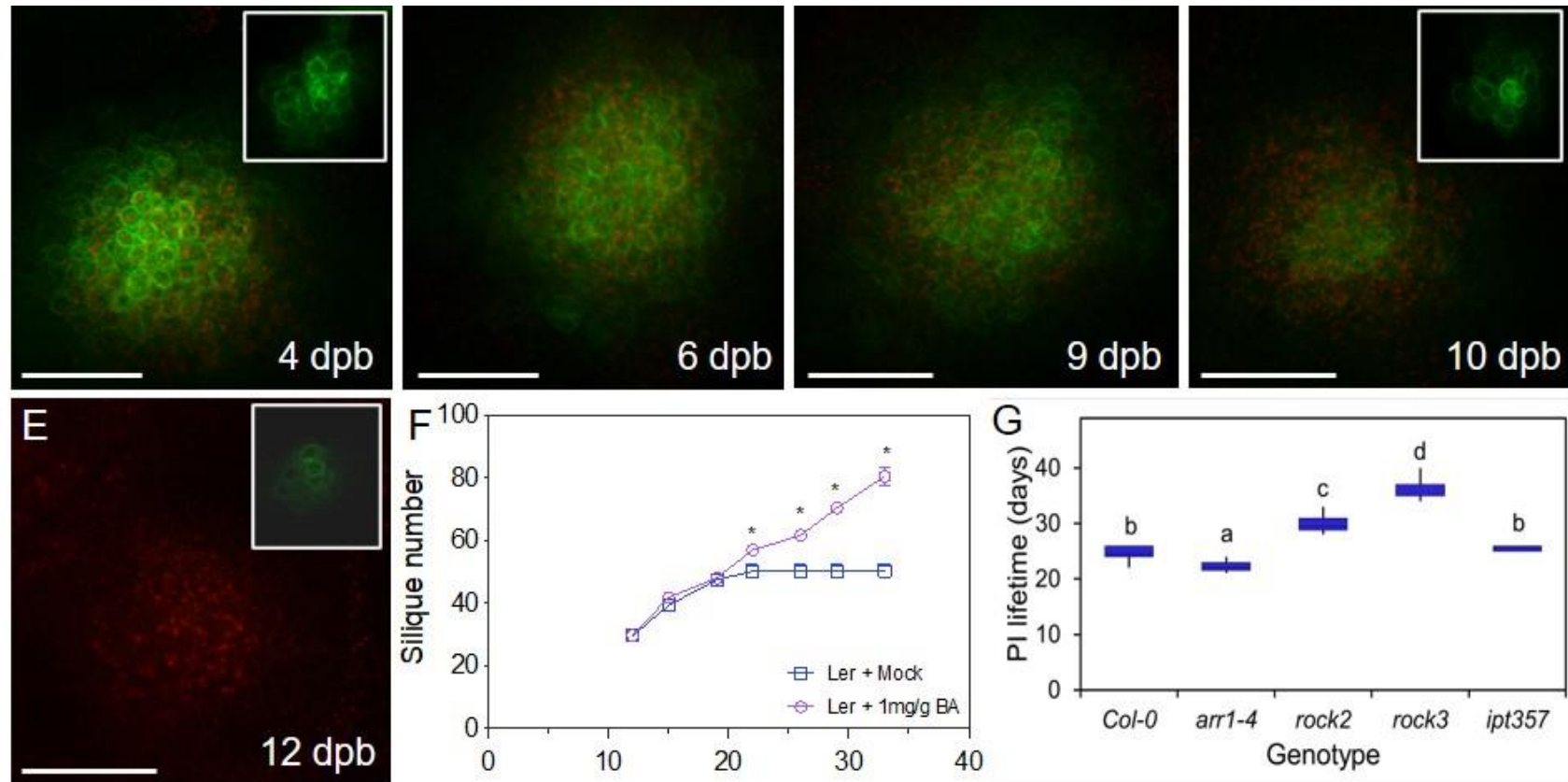
- In Arabidopsis, visible end-of-flowering occurs by inhibition of further flower opening.
- But IMs had already arrested, limiting total flower production.
- How does this system work?

Two-stage inflorescence arrest in Arabidopsis



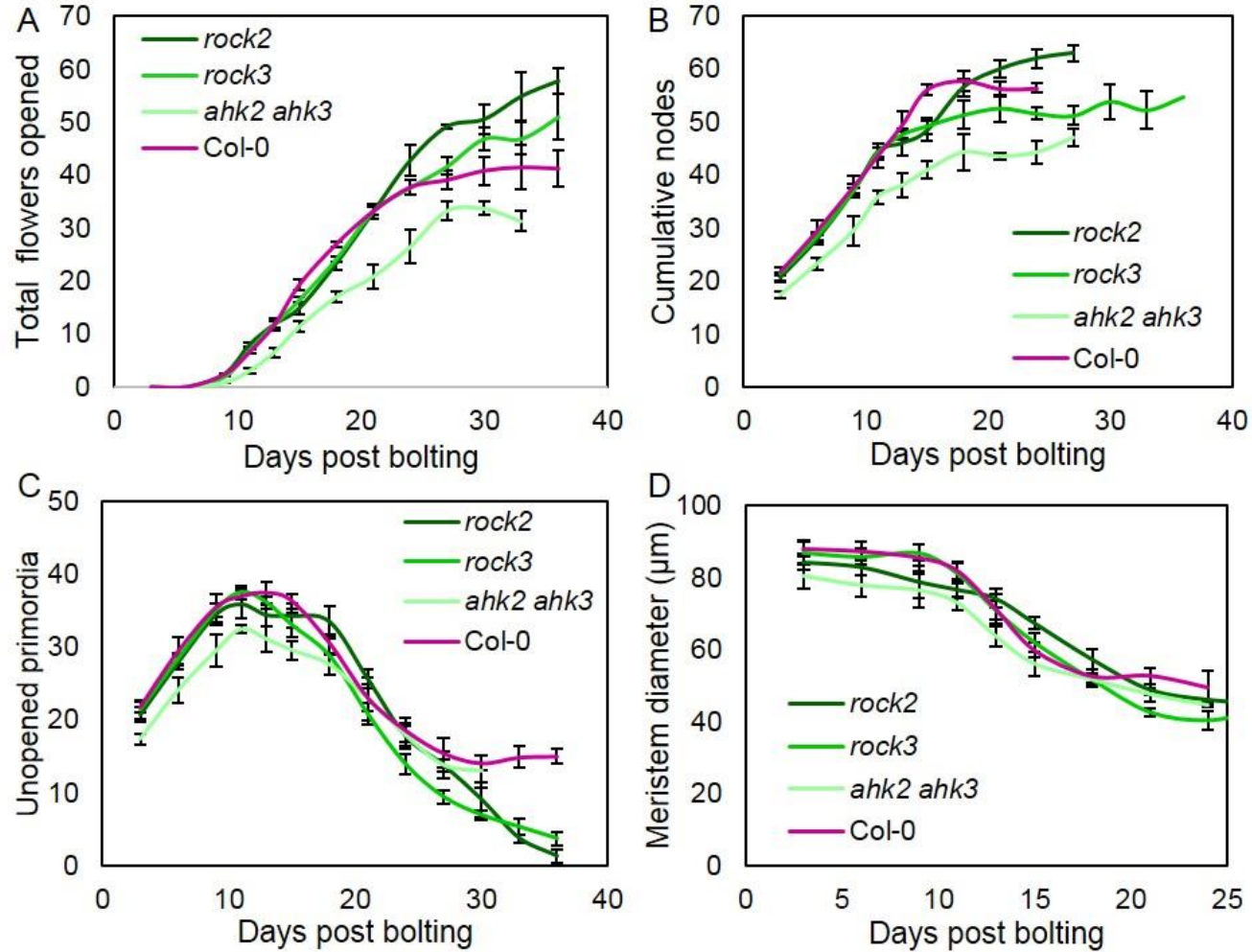
- Global branch removal extends IM activity and flower opening
- Local fruit removal extends flower opening only.

Is it cytokinin?



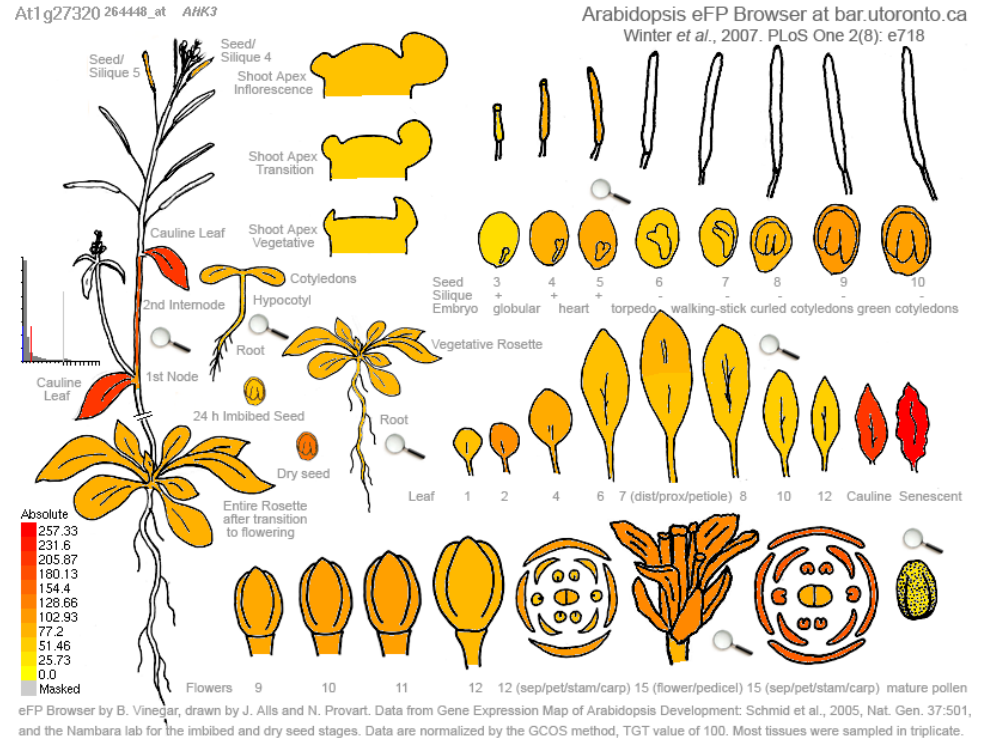
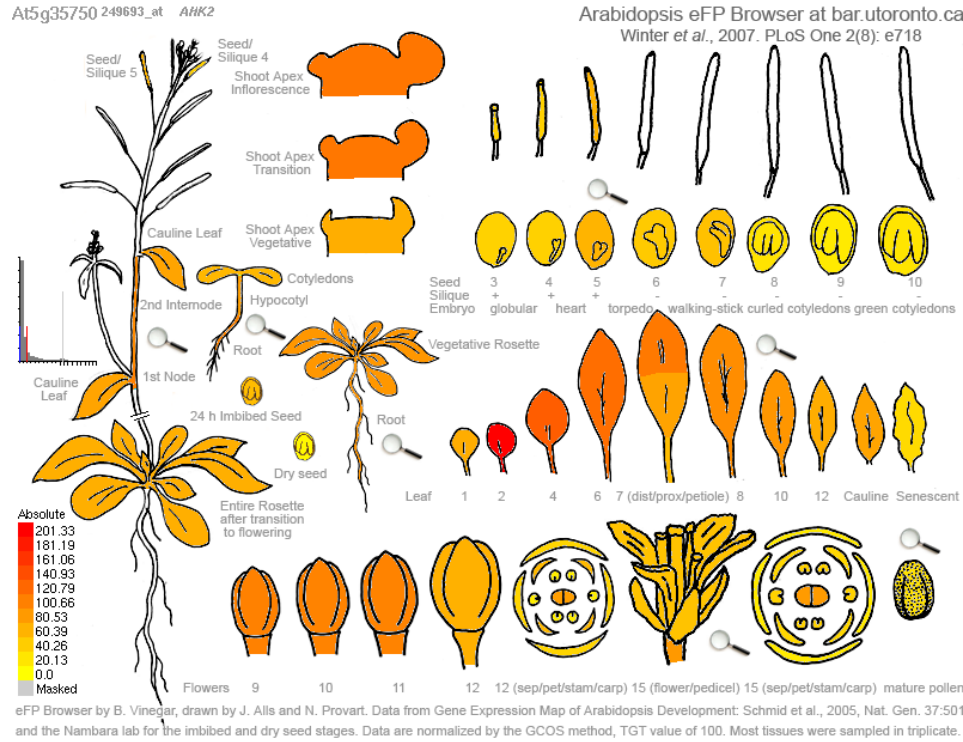
- Cytokinin signalling in the IM declines in the run up to IM arrest.
- Cytokinin treatment prevents IM arrest
- Cytokinin mutants shorten or lengthen flowering.

Is it cytokinin?

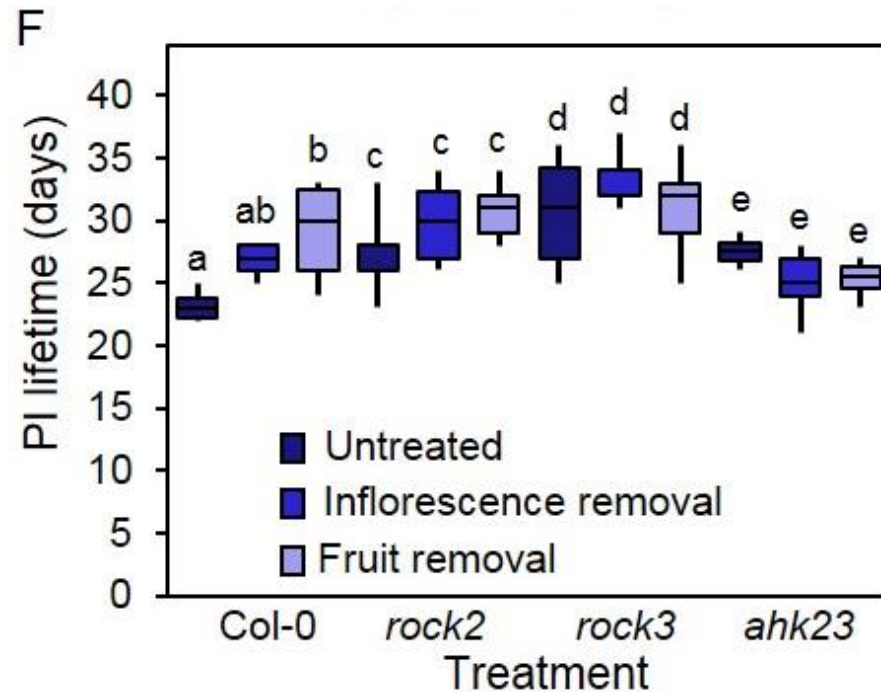
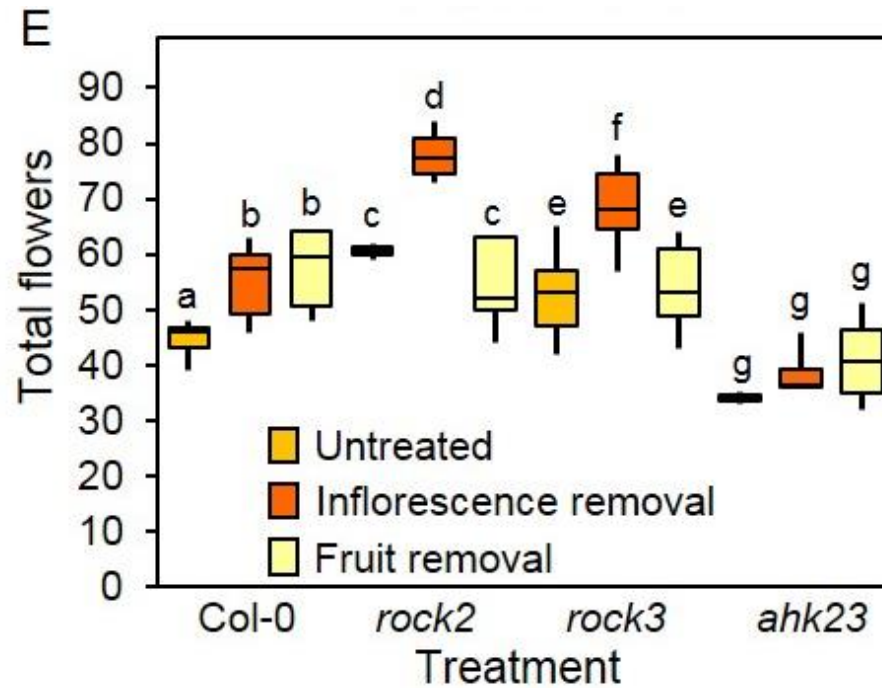


- *rock2* mutants behave like global debranching treatments
- *rock3* mutants behave like local defruiting treatments

Is it cytokinin?

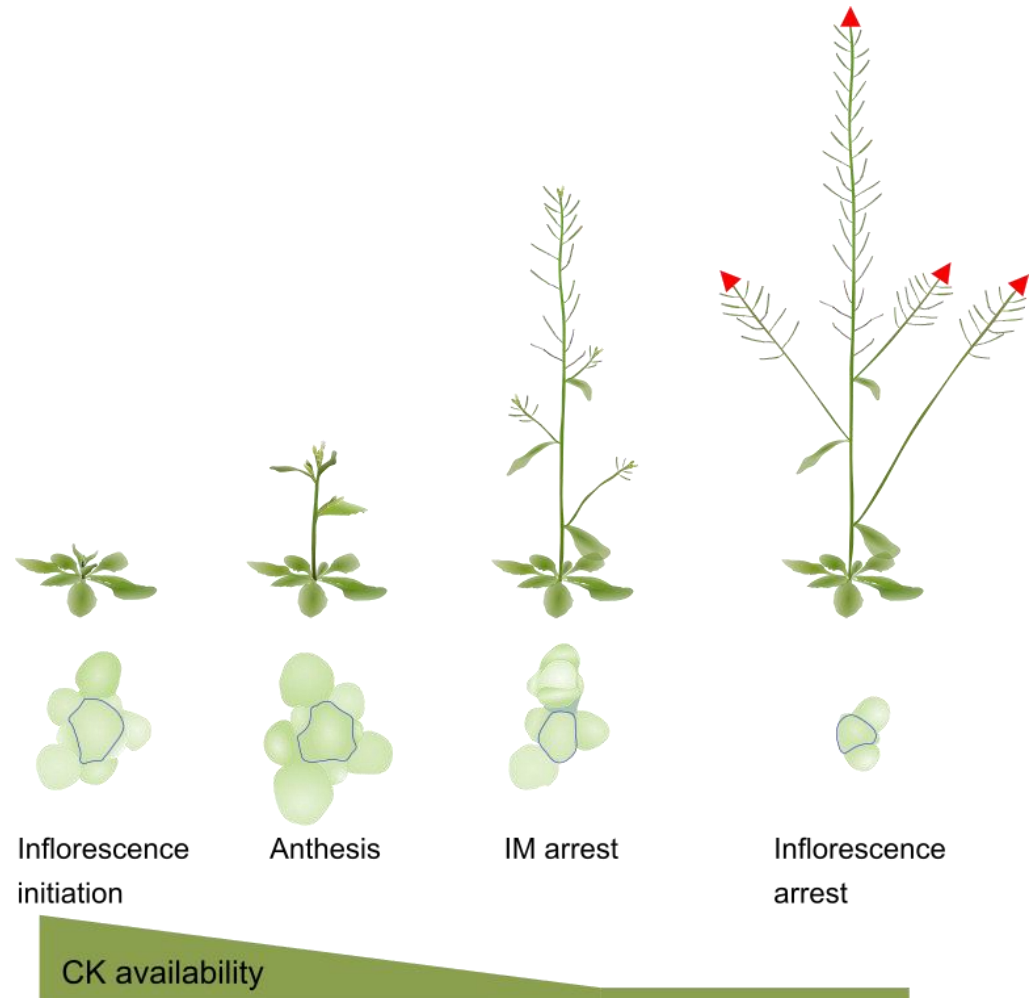


Is it cytokinin?



- *ahk2 ahk3* mutants do not respond to global debranching or defruiting

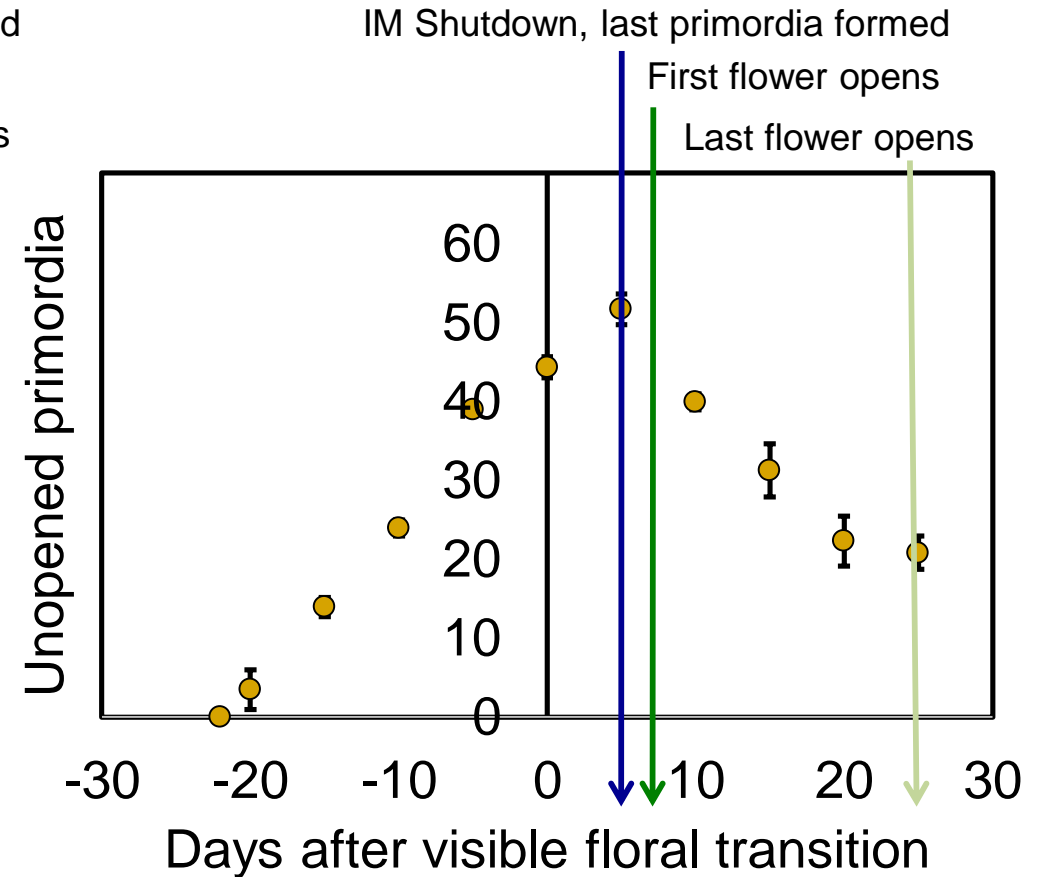
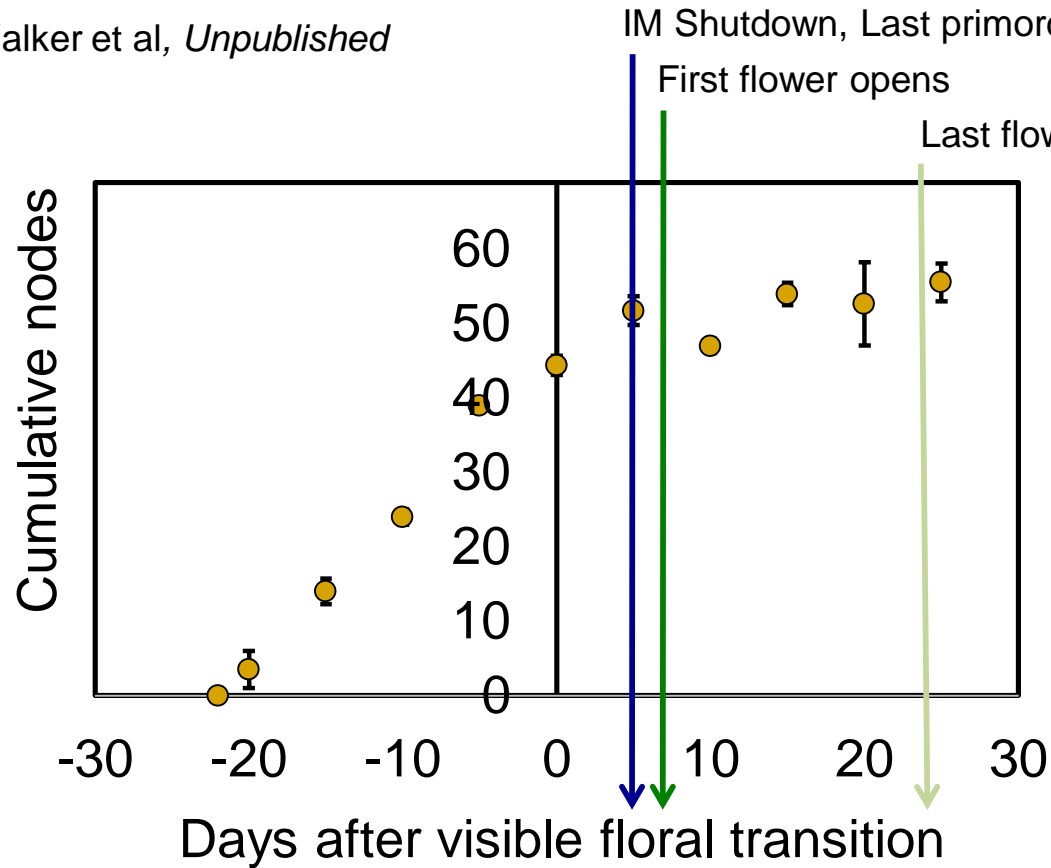
A cytokinin model for the end-of-flowering



- Dilution of root-derived cytokinin among inflorescences determines the course of flowering in response to soil resource availability.

The life and times of an OSR inflorescence

Walker et al, *Unpublished*



- When it 'flowers', all OSR is doing is opening flowers it has already made.
- Yield determined very early.
- Boost cytokinin sensitivity in inflorescence meristems!

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