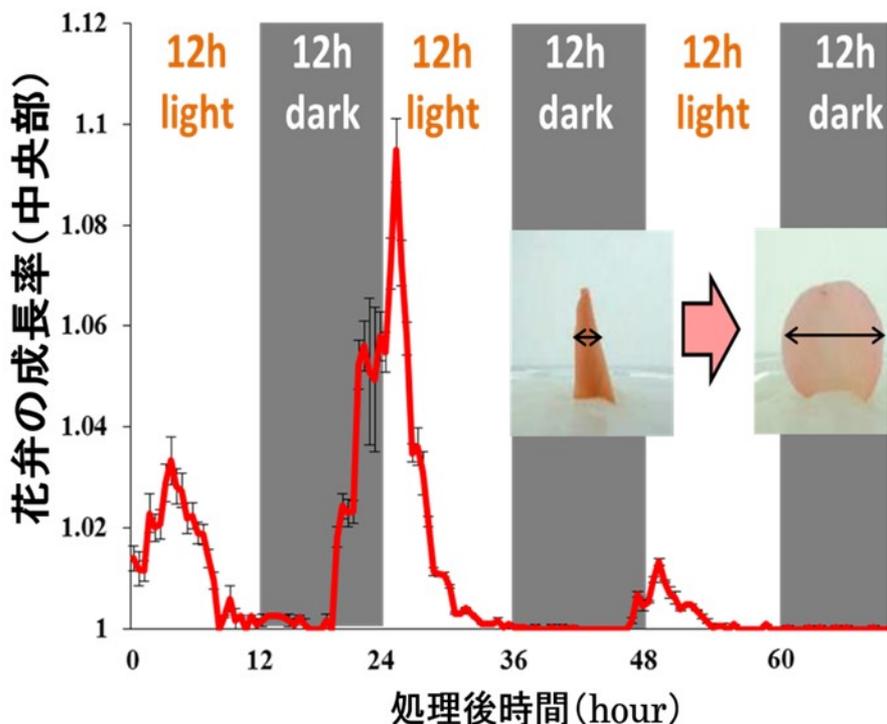


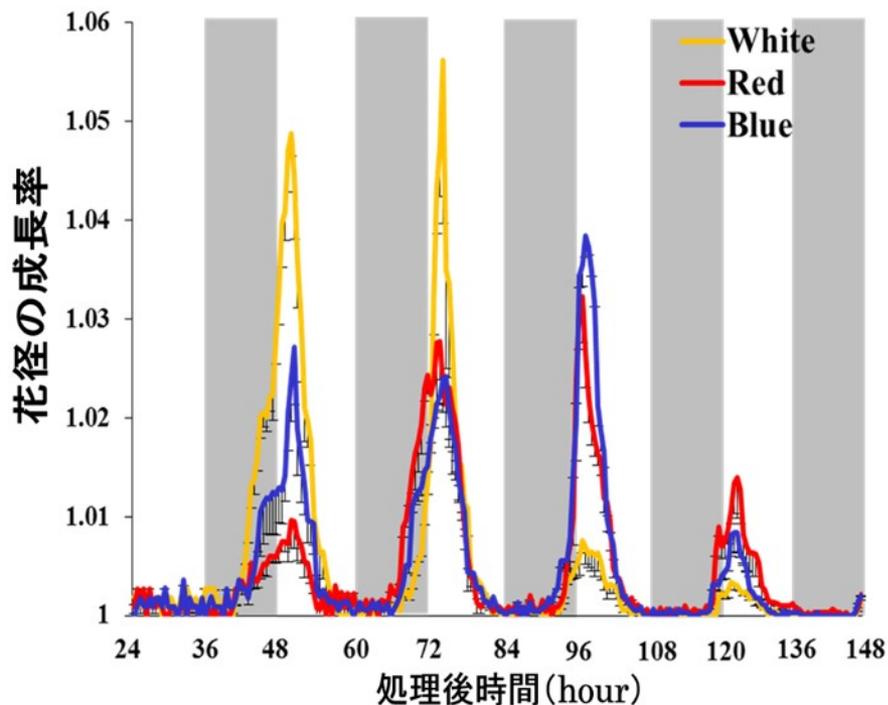
# 花組：光を使った切り花の品質向上技術の開発

我々はこれまでに花卉は光を感知すること、光は花卉生長に影響することなどを明らかにしています。切り花の品質保持は主に生け水への薬剤処理によって行われていますが、LEDなど光を利用できればより省力的で多様な切り花品目に適応可能な品質保持技術の開発につながると期待しています。

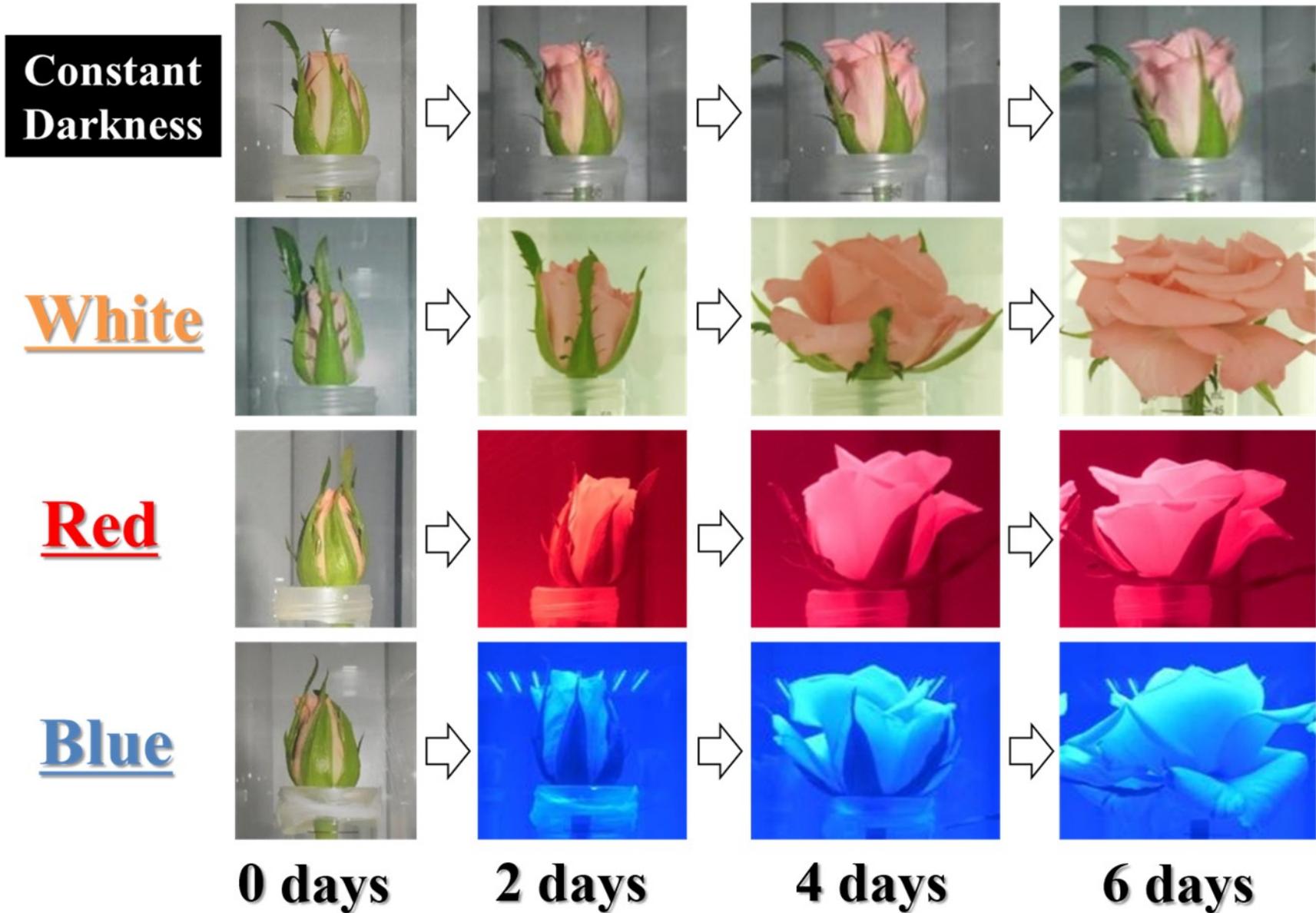
## バラ花卉の花卉生長リズム



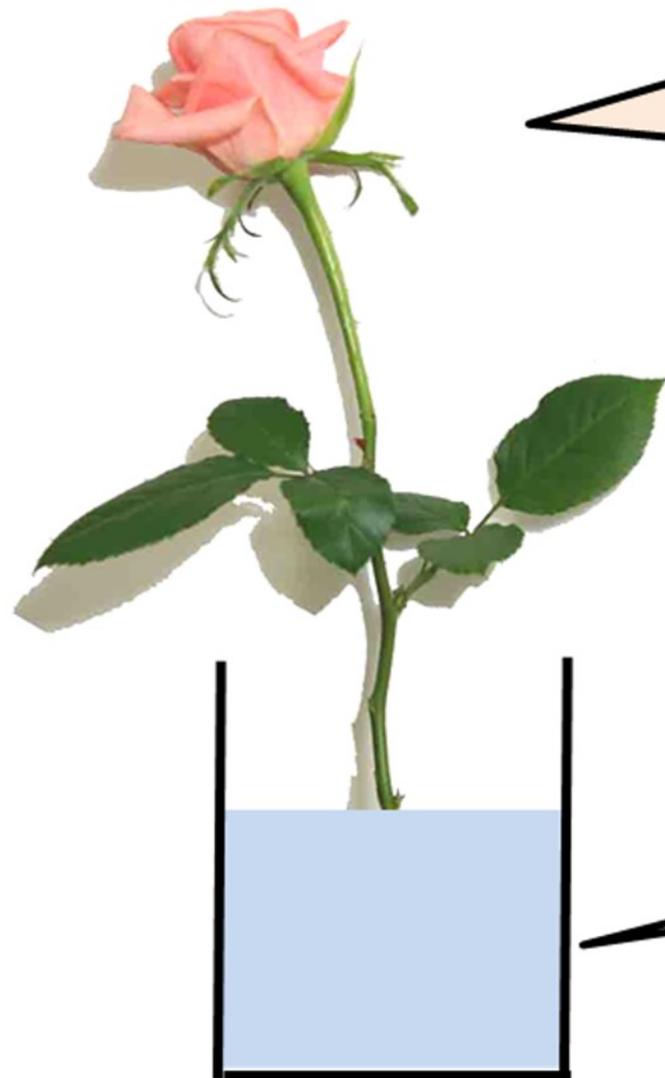
## 照射波長が花卉生長リズムに与える影響



# 花組：光を使った切り花の品質向上技術の開発



# 花組：光環境制御による新しい開花調節技術



## Light Environment

- Wavelength
- Strength
- Photoperiod

## Base Solution

- Sugar
- Antibacterial agent
- Plant growth regulators
- Ethylene inhibitor

Mini Review

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# Approach towards the control of rose flower opening by light environment

## Abstract

The fact that plants bloom in rhythmic patterns has been widely known since ancient times.<sup>1</sup> Morning glories (*Ipomoea nil*), for example, open in a synchronized fashion once a set amount of time passes after dusk (the beginning of the dark period). This means that, although morning glories open at dawn in early summer when it is light late into the evening, they begin opening at night in early autumn when it gets dark earlier in the evening. Meanwhile, rose petals develop only for a set period of time after dawn, after which the bud's development is halted until the next morning.<sup>2</sup> Our research has shown that this rhythmic growth of rose petals can be observed even in cut flowers, and it is affected by day length and the wavelength of the light.<sup>3</sup> By uncovering the relationship between this rhythmic petal growth and light stimuli, thus deepening our understanding of the mechanisms of petal development, we can pave the way for new technical advances in regulating flower opening through light environmental control. Here we discuss the relationship between rhythmic petal development in cut roses and light stimuli, as well as approaches for controlling light-dependent petal development.

**Keywords:** circadian rhythm, cut rose, flower opening, led, petal growth, photoperiod, post-harvest, *Rosa*,

Volume 2 Issue 4 - 2018

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**Received:** August 05, 2018 | **Published:** August 09, 2018