

Spathe Re-greening in *Zantedeschia*

Progress Report
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Introduction

- Two groups of *Zantedeschia*

- Winter flowering: *Z. aethiopica*
(white calla lily)



Z. aethiopica

- Summer flowering: *Z. Elliottiana*,
Z. rehmannii ('Best Gold')

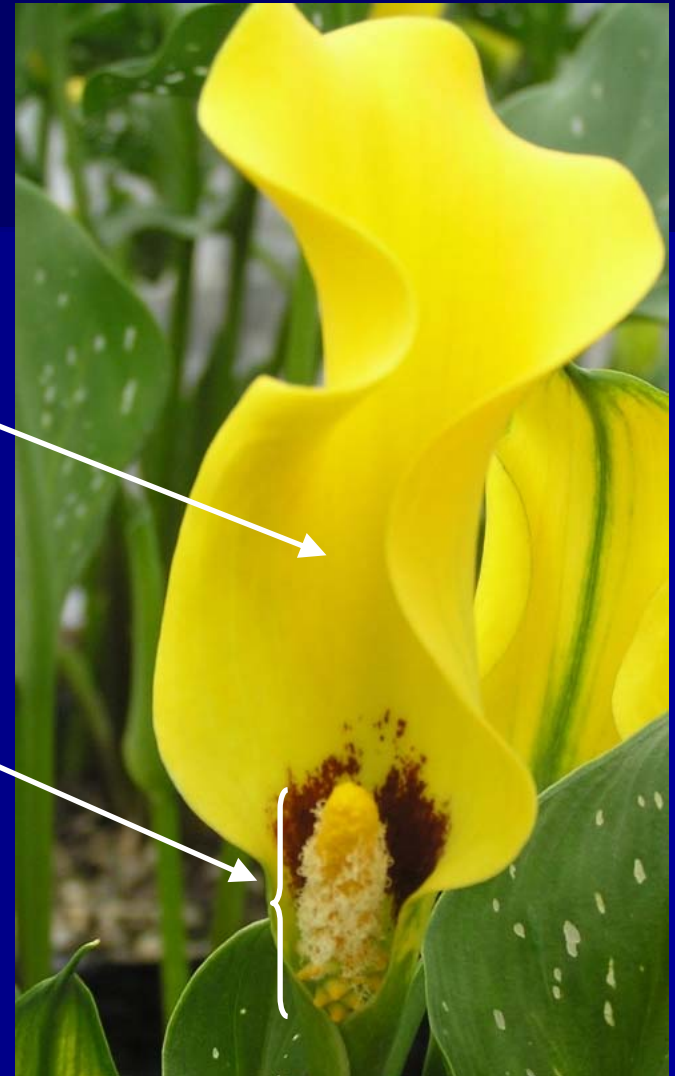


Z. 'Best Gold'

Introduction

- Background

- Spathe: a modified leaf
- Spadix: male & Female flowers



Introduction

- Spathe re-greening in *Zantedeschia* starts 2-3 days after full colour



0 days



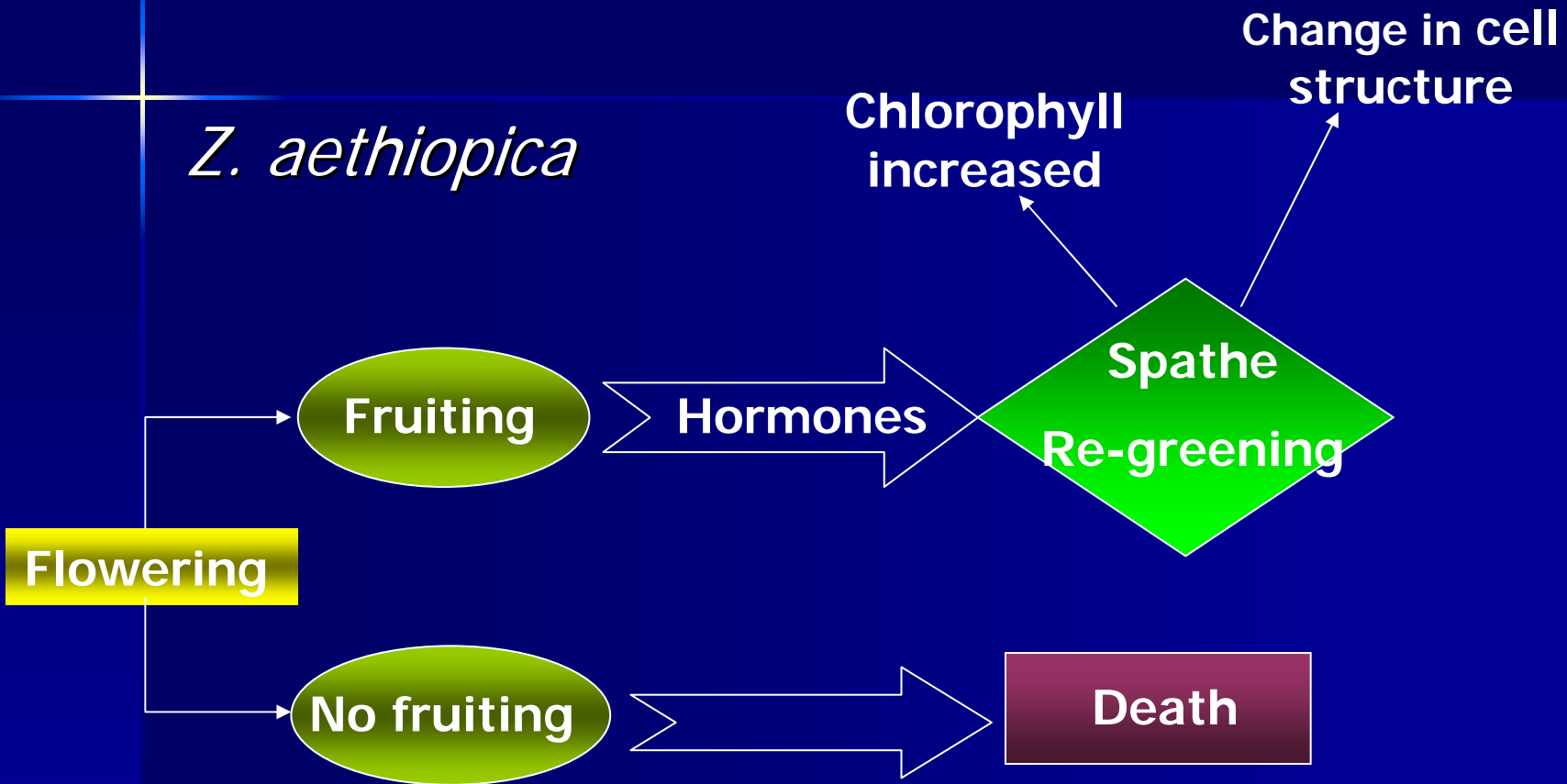
1 week



3 weeks

What do we know about re-greening in *Zantedeschia*?

Z. aethiopica



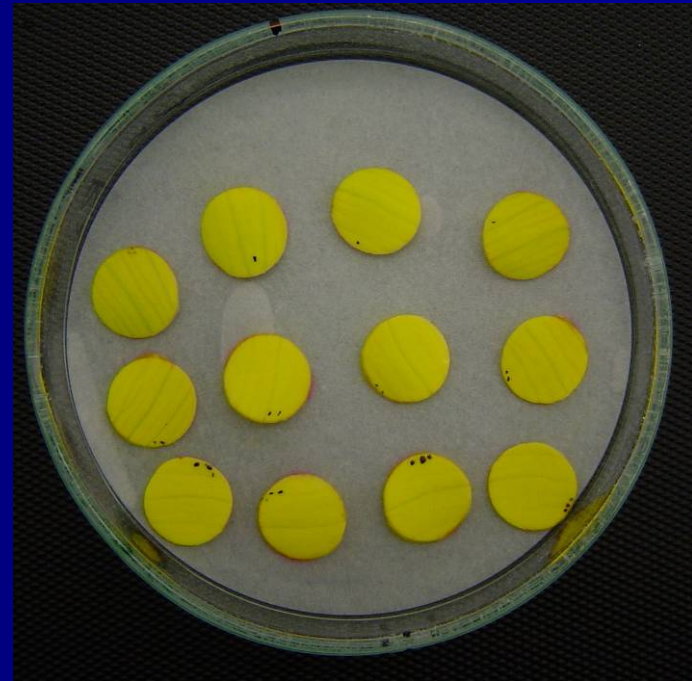
How about re-greening in the summer flower group (e.g., 'Best Gold')?

Goals for Research Programme

- Postpone re-greening to improve post-harvest quality of *Zantedeschia* for growers
- Understand the mechanism of the spathe re-greening
 - Physiological level
 - Cellular level
 - Molecular level

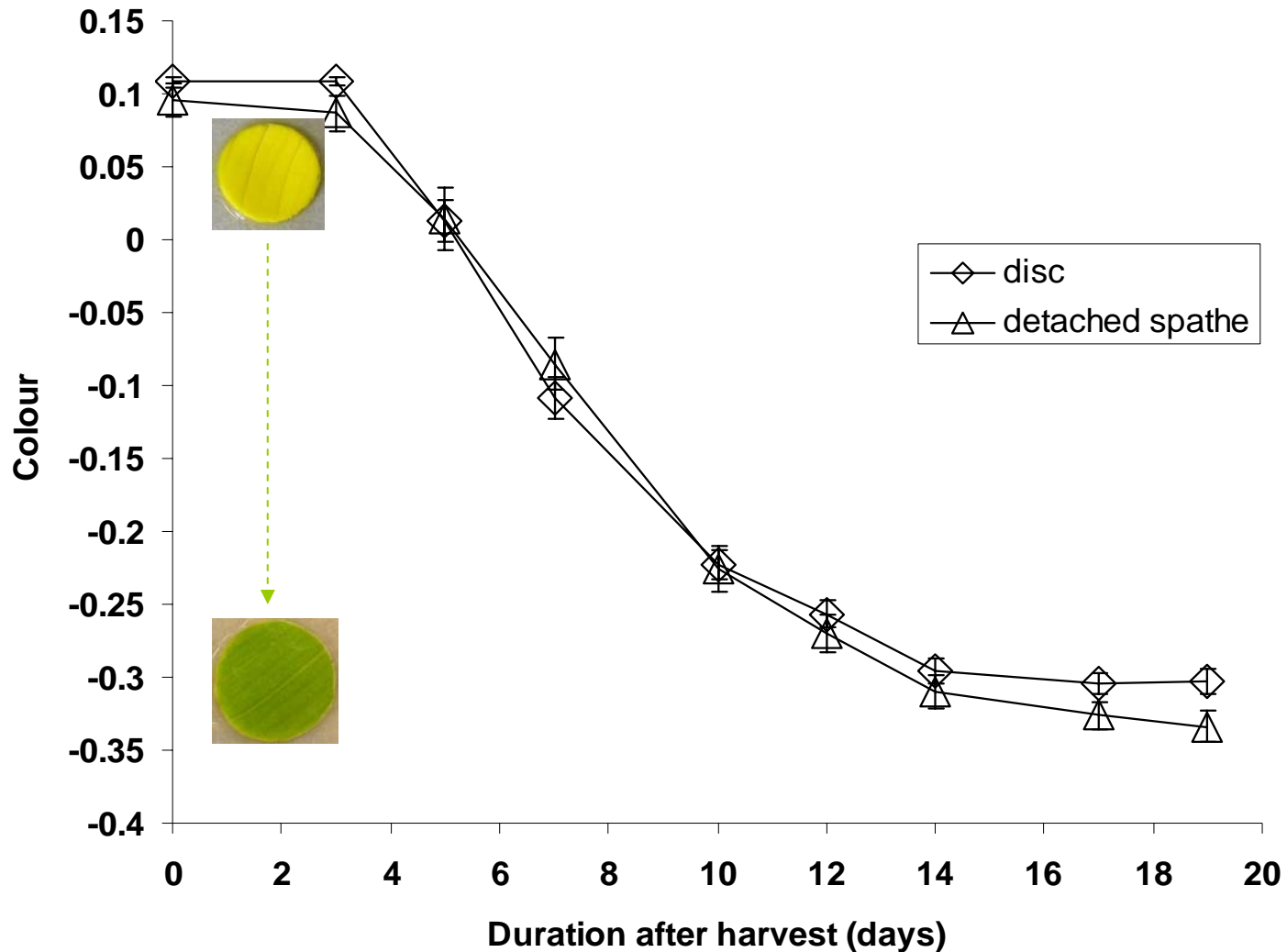
Methodology development

- Discs of spathe rather than whole spathe



Discs versus whole spathe

- Discs = Detached Spathes

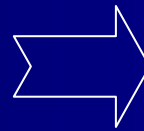


Effect of flowers

- Spadix removal



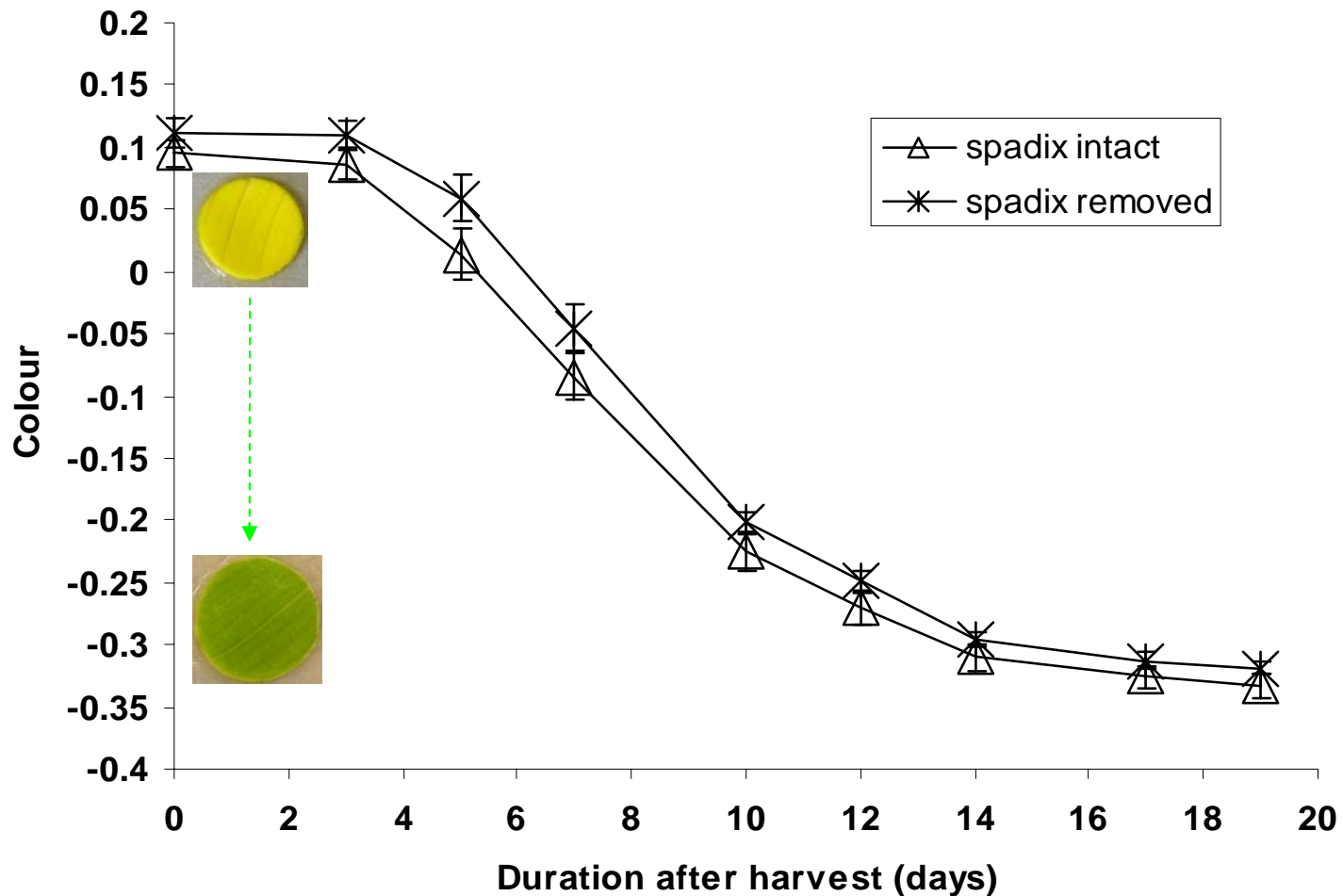
Intact



Removed

Effect of flowers

- Spadix intact = spadix removed



Effect of female flowers/fruit

Two types of stems:

1) + female flowers

2) - female flowers

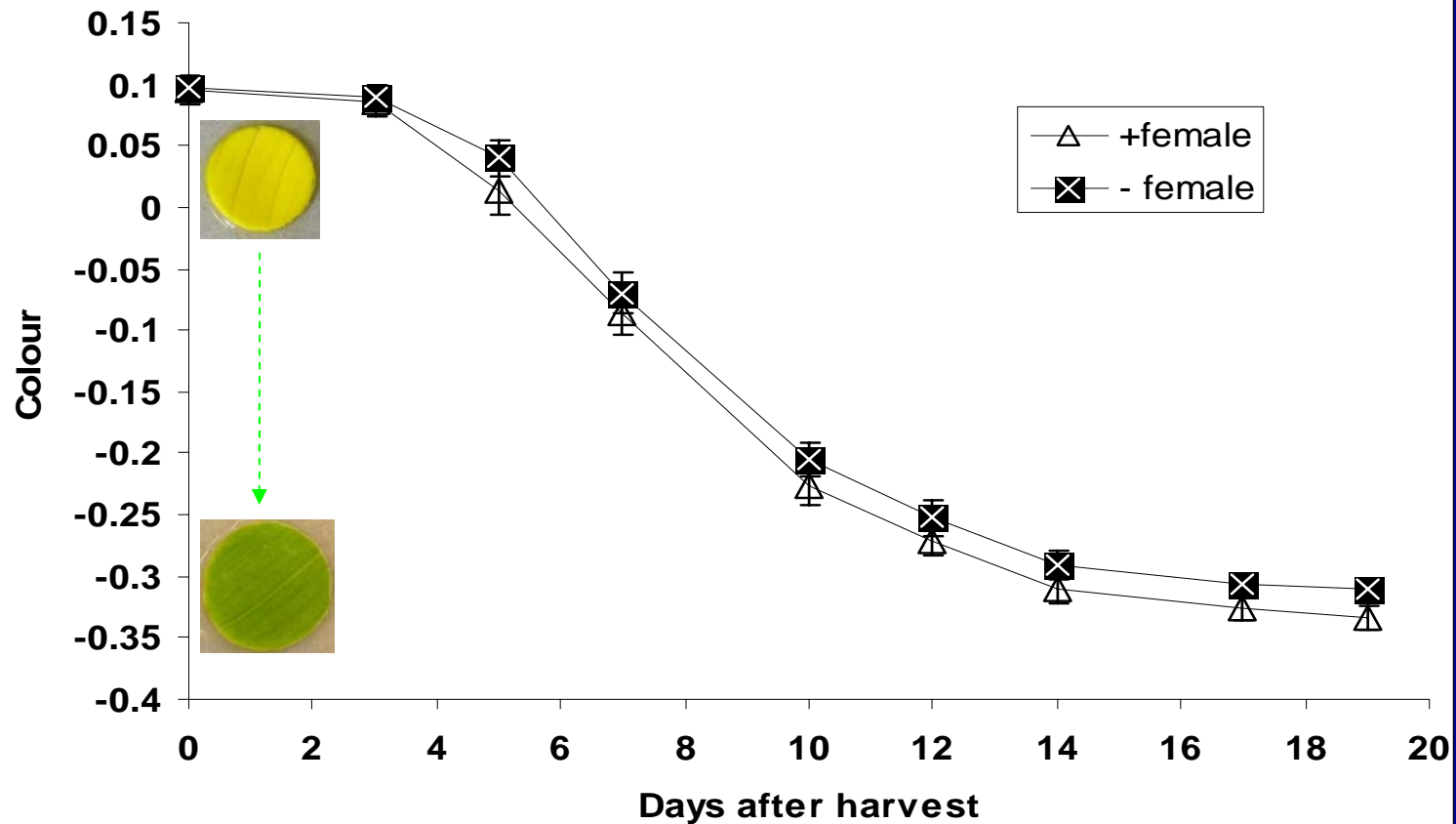
male

female



Effect of female flowers/fruit

■ Fruit not involved in regreening



Is a 'flower' involved at all ?

- Regreening in yellow leaf



2 weeks later

Current results - effect of flowers/fruit

Regreening:

- discs = whole spathe
- + spadix = - spadix
- + female = - female flower
- even coloured leaves regreen

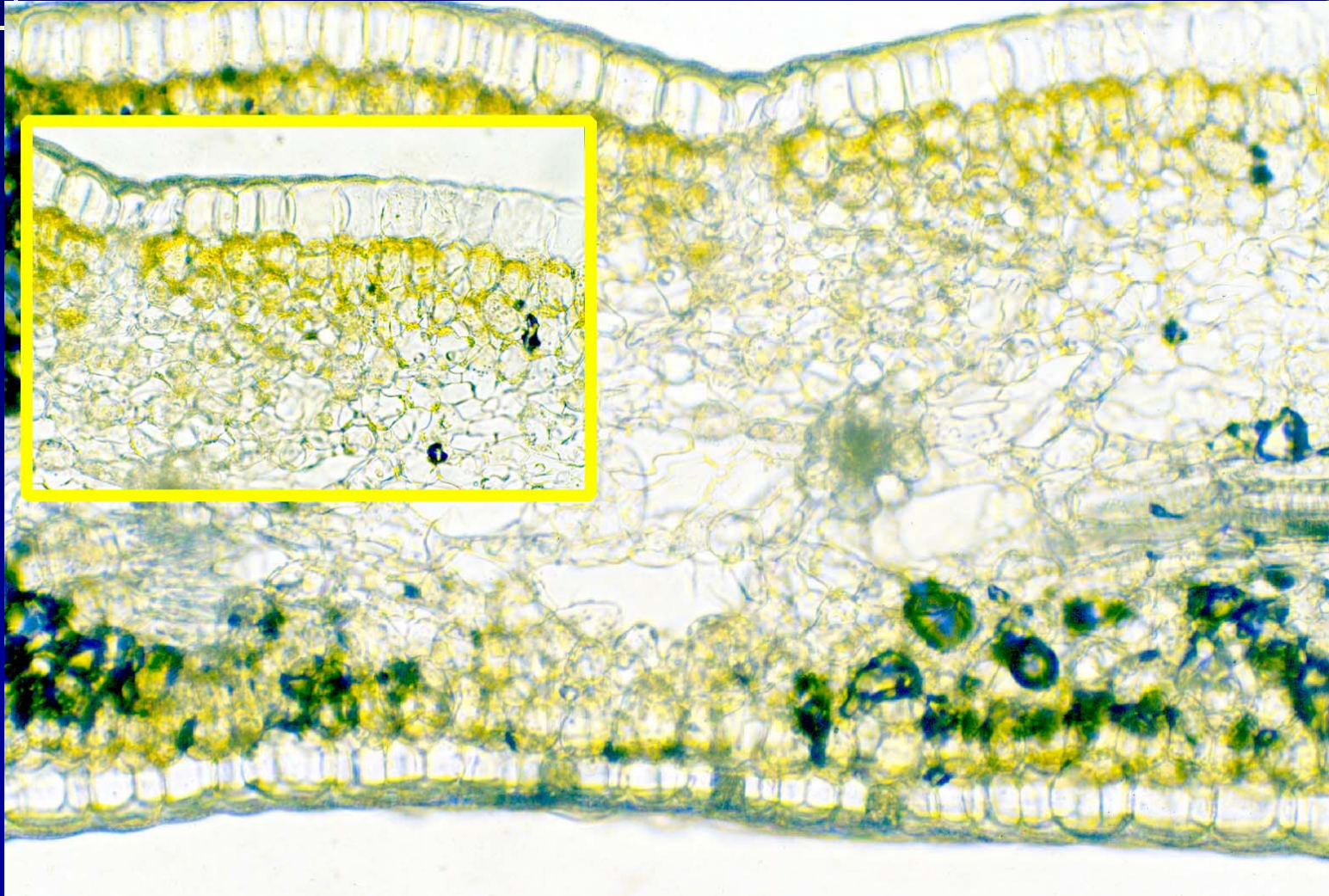
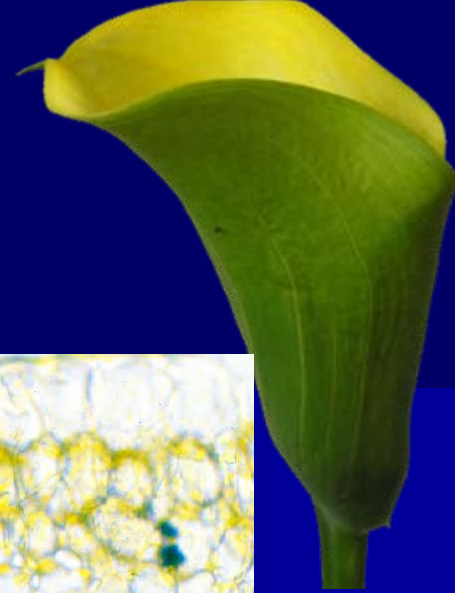
No effect of flowers/fruit on re-greening of 'Best Gold'

❖ Re-greening differs between *Z. aethiopica* and 'Best Gold'

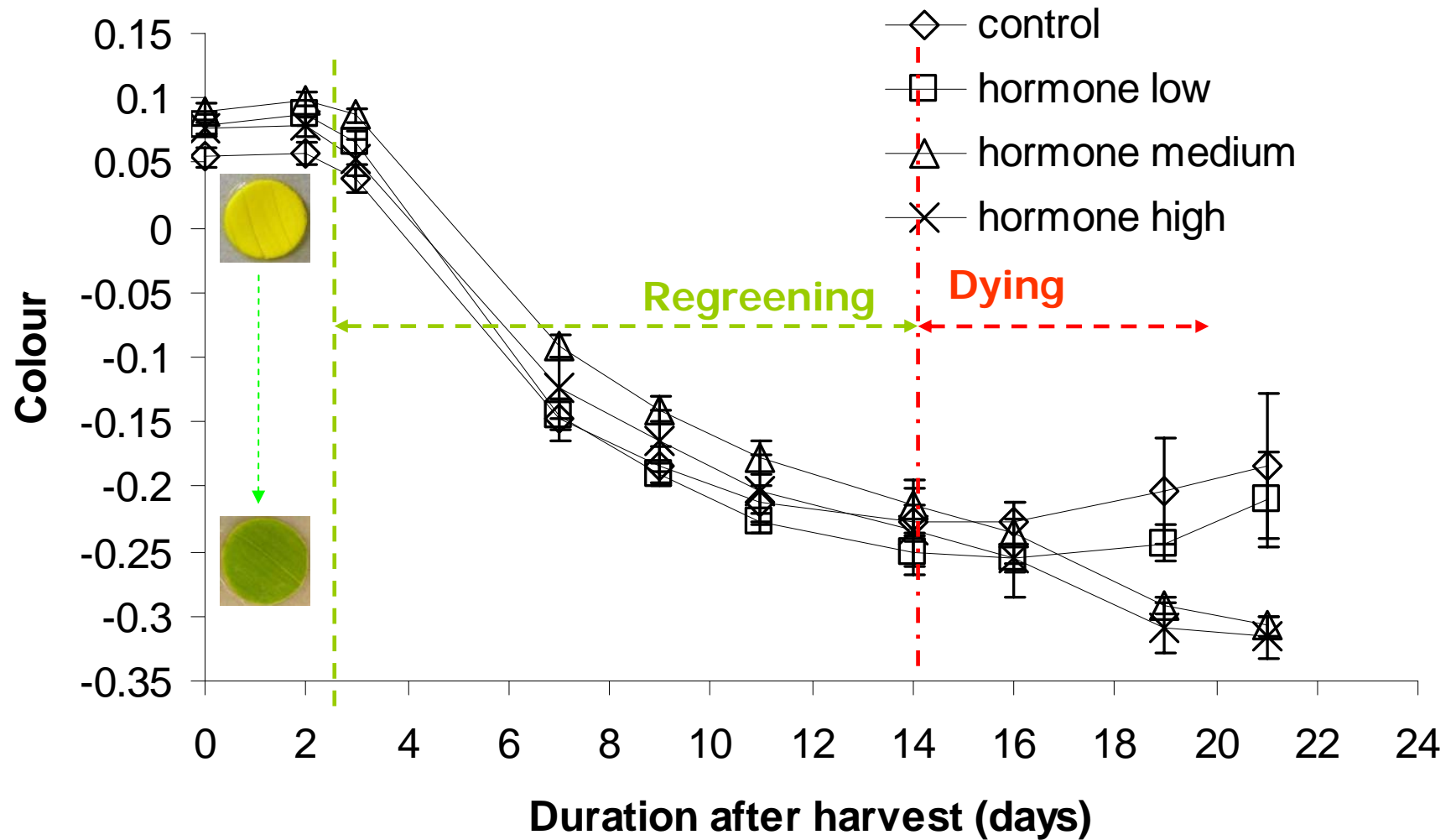
Further results

Regreening differs re:

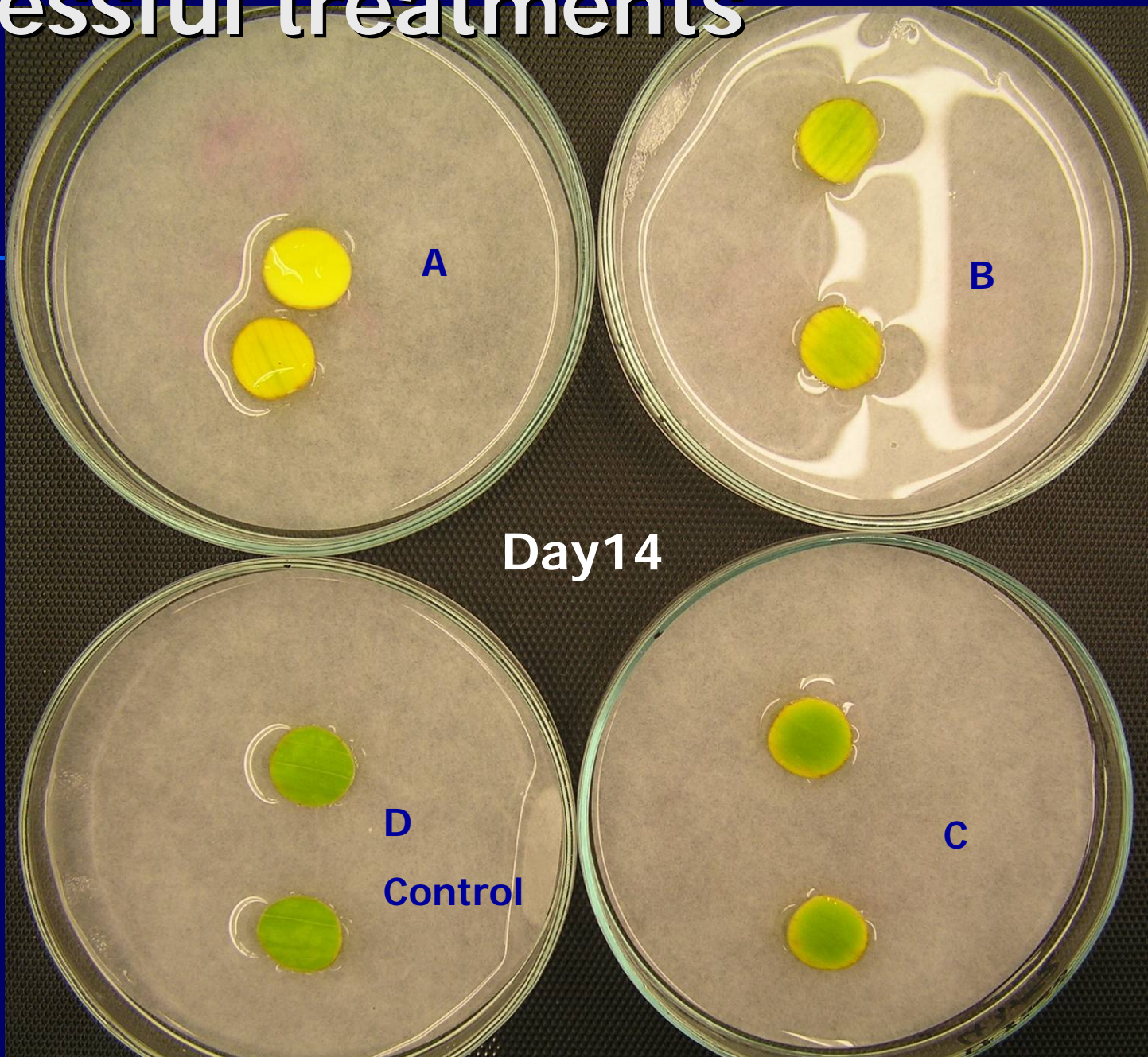
- Outer and inner surface



Hormone effects



Successful treatments



Focus for the Next 6 months?

- Refine successful treatments
- Evaluate on cut stems and potted plants
- Determine structural changes at a cellular level
- Possibly determine differences in critical proteins during regreening.

Acknowledgement

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