

# Changes in Anthocyanin and Chlorophyll Contents During Fruit Growth of Lilac and Dark-purple Paprika



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## Introduction

There are two types of purple paprika, lilac (light purple) and dark purple. During fruit development, they change from green to purple, before turning red when fully ripe. These color changes during ripening are probably related to changes in pigment concentrations. In this study we investigated changes in anthocyanin and chlorophyll during fruit development.

## Materials and Methods

### Plant materials

Two crops of both Lilac “Tequila” and dark-purple “Mavras” paprika plants (*Capsicum annuum* L.) were grown in a greenhouse hydroponic system:

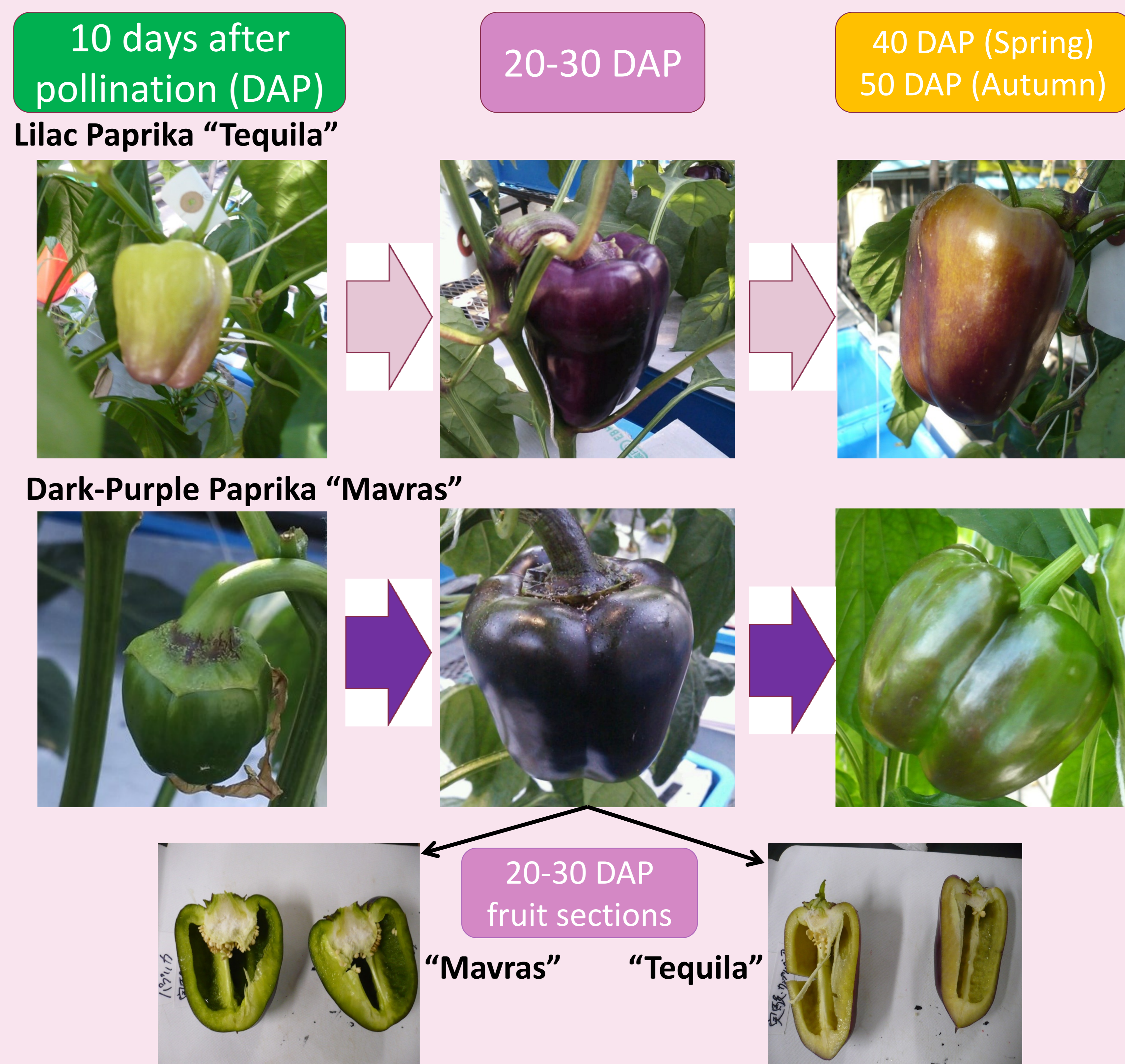
- Spring 2015 (Spring crop)
- Autumn 2015 (Autumn crop)

Fruits were harvested every 10 days after pollination (DAP). Skin and flesh samples were taken from the middle parts of the harvested fruits.

### Pigment analysis

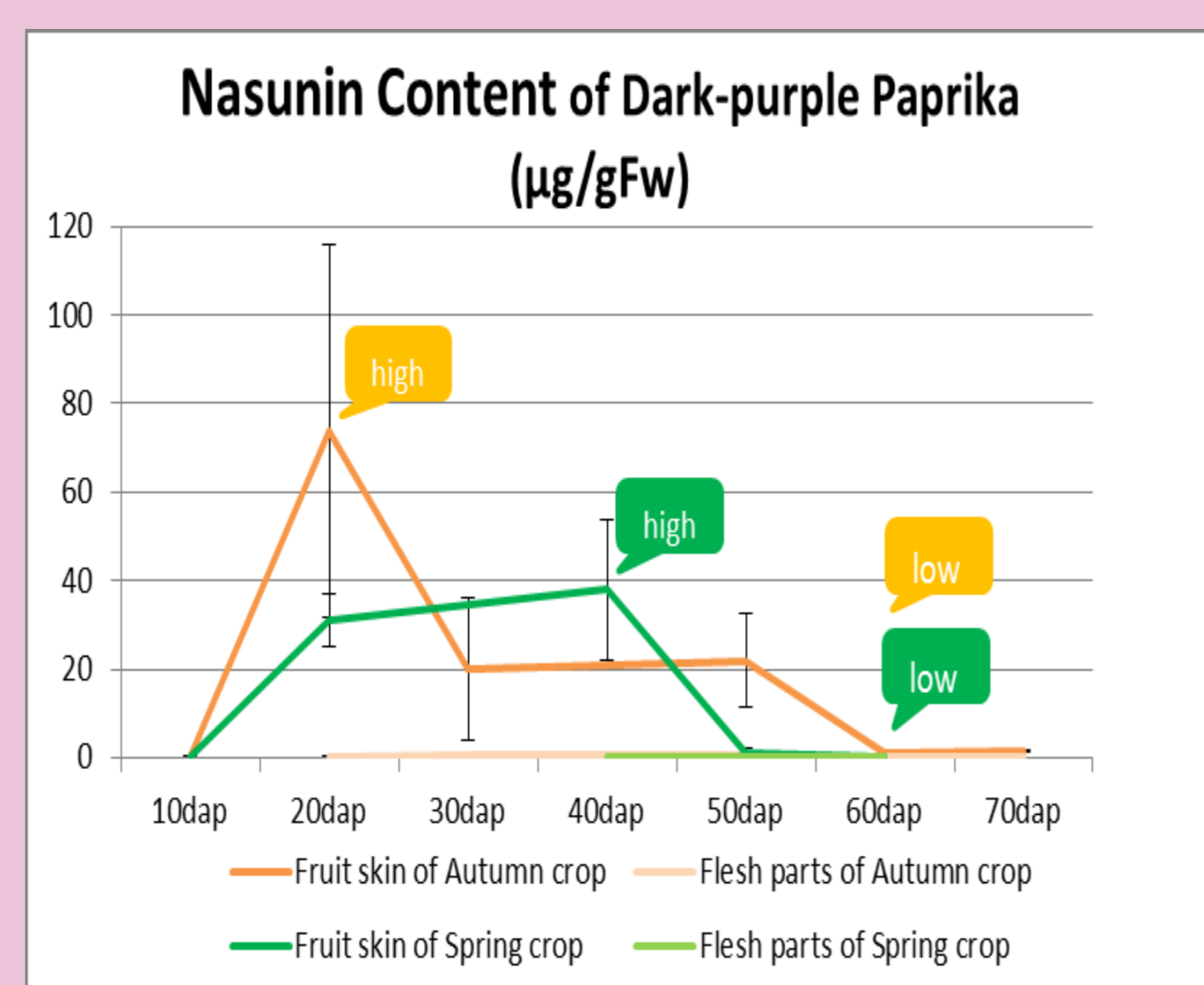
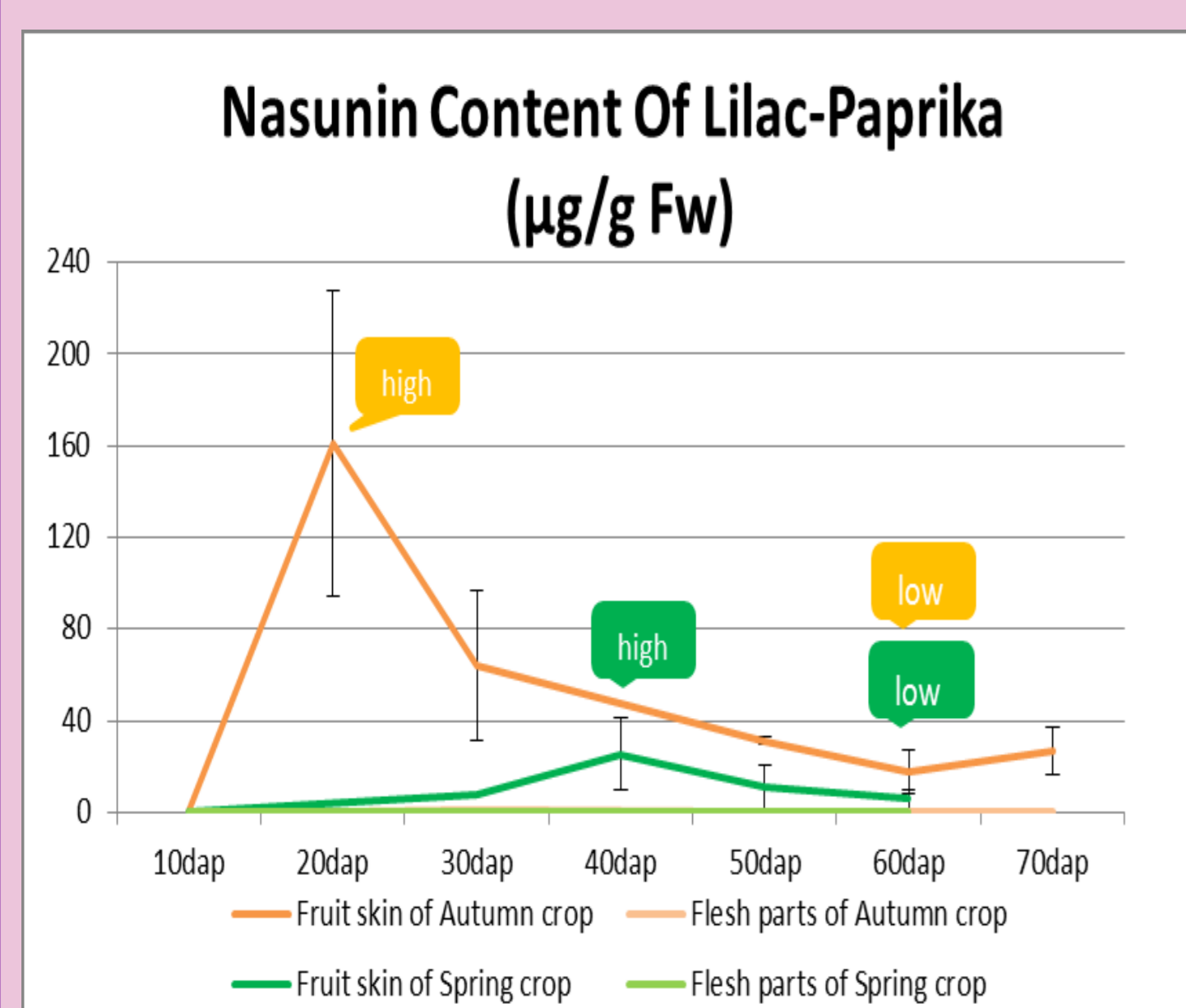
Anthocyanin (nasunin) and chlorophyll were extracted from the skin and flesh samples with acetic acid and acetone, respectively.

Anthocyanin and chlorophyll concentrations were measured by HPLC at 525 nm and 480 nm, respectively.



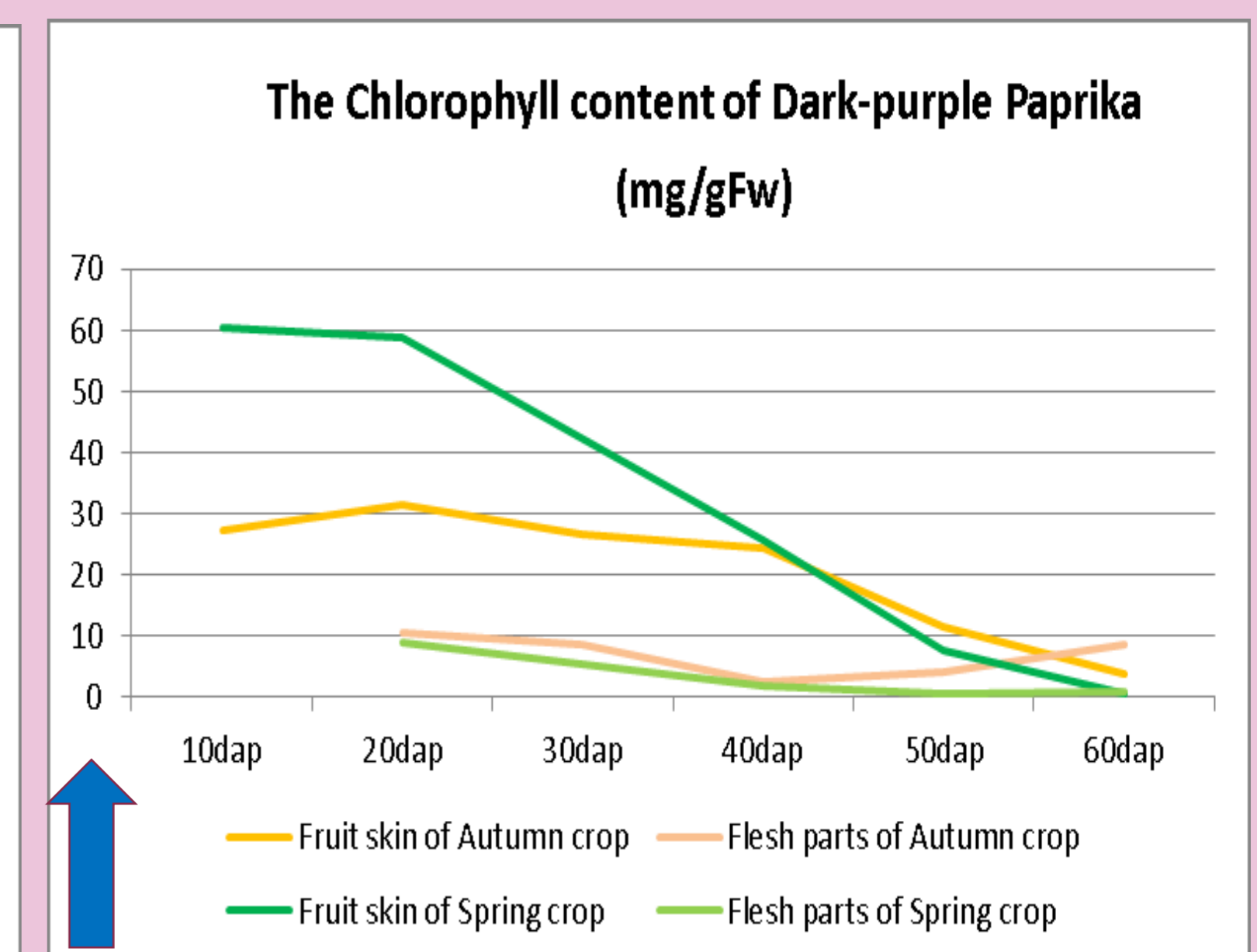
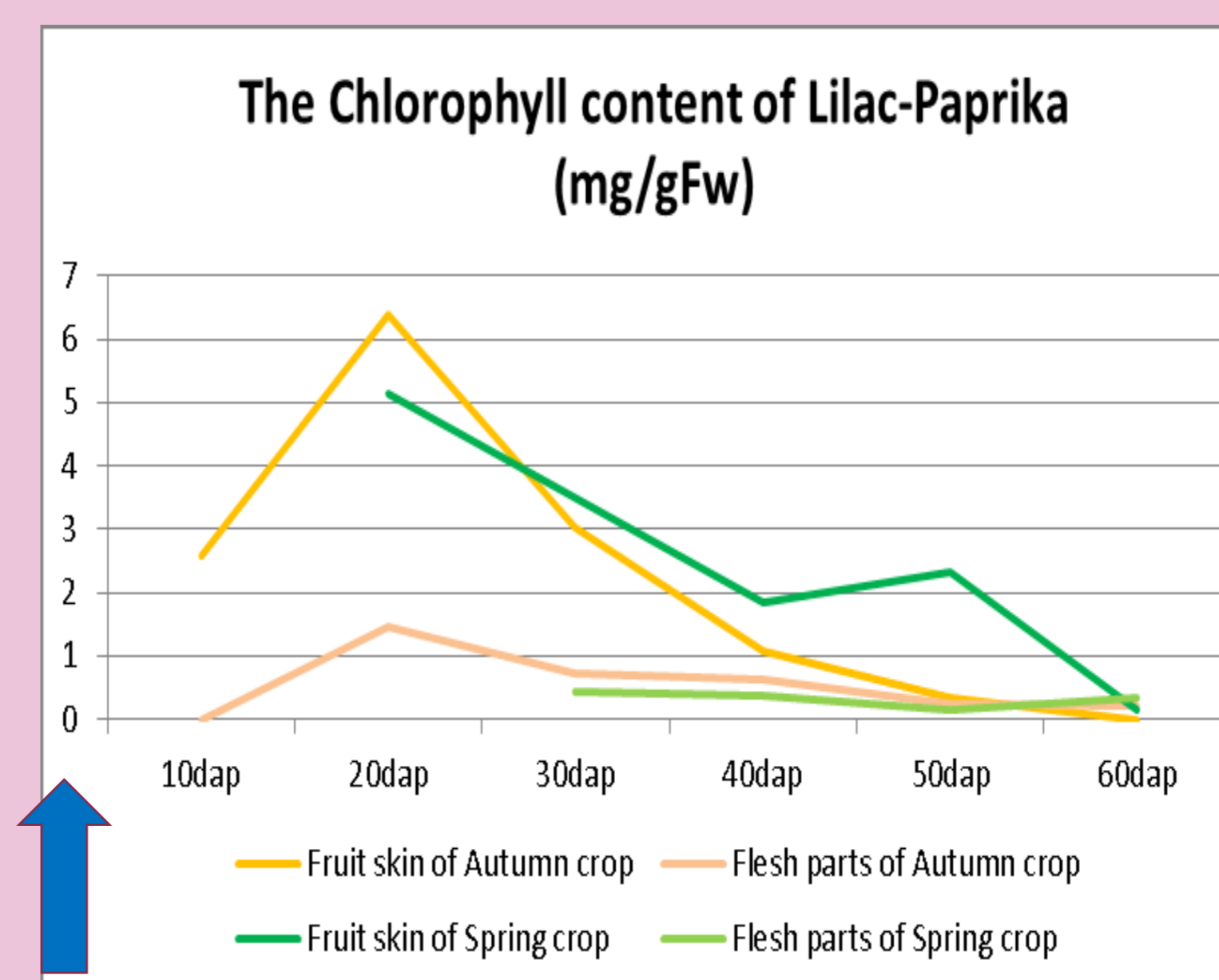
## Result and Conclusions

### Anthocyanin peak between 20-40 DAP



Green line: Spring crop  
 Orange line: Autumn crop

### Chlorophyll falls during ripening



Chlorophyll content of dark-purple paprika about ten times higher than in lilac paprika.

- Anthocyanin contents (nasunin) peaked 20-40 DAP in fruit skin of both varieties
- Much higher chlorophyll content in the dark-purple paprika. This might contribute to its darker purple color.