



# BIOMARKERS FOR SELECTION OF PARTHENO-CARPIC VARIETIES OF ZUCCHINI

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# INTRODUCTION



PRODUCTION OF ZUCHINI IN GREENHOUSE IN WINTER



**FRUIT SET FAILURES**

**LOW POLLINATOR ACTIVITY**

**POLLEN PRODUCTION**

**CONVENTIONAL**

**AUXIN SPRAY**

# AIM

**BIOMARKERS TO HELP  
PARTHENO CARPY SELECTION**

**ORGANIC AND INTEGRATIVE**



3<sup>rd</sup> INTERNATIONAL SYMPOSIUM ON  
ORGANIC GREENHOUSE HORTICULTURE  
11 - 14 APRIL 2016 / IZMIR, TURKEY



# MATERIAL AND METHODS

## THREE CULTIVARS

MUCU16	traditional
WITHAKER	Parthenocarpic
CAVILI	Parthenocarpic

PLANTLETS  
RESPONSE TO LIGHT:  
AUXINES

GROWTH CHAMBER

FRUIT  
ETHYLENE  
CUANTIFICATION

GAS  
CROMATOGRAPHY



BioGreenhouse

cost  
EUROPEAN COOPERATION  
IN SCIENCE AND TECHNOLOGY

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# RESULTS

## Selection of parthenocarpic lines in seedlings by phototropism

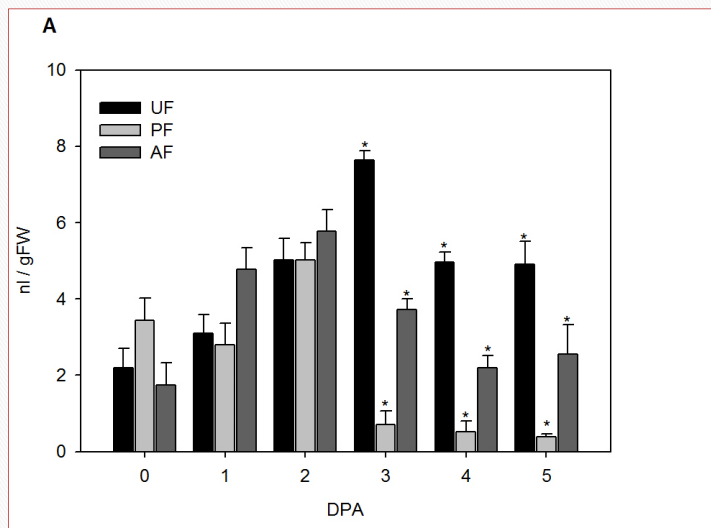
Association of their parthenocarpic potential and phototropism as a method of early selection



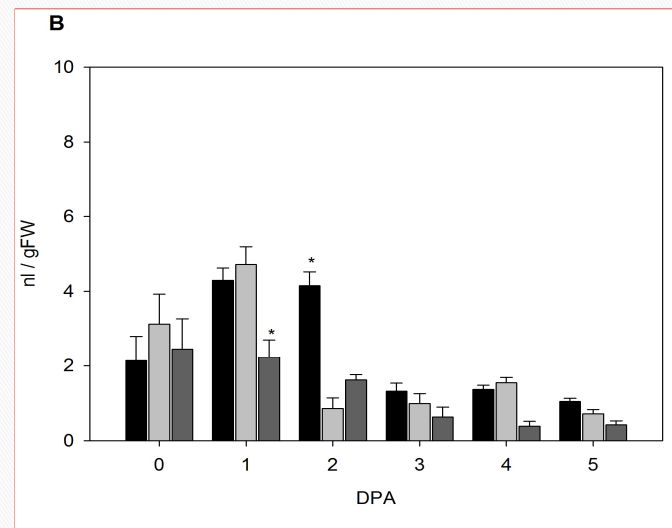


# RESULTS

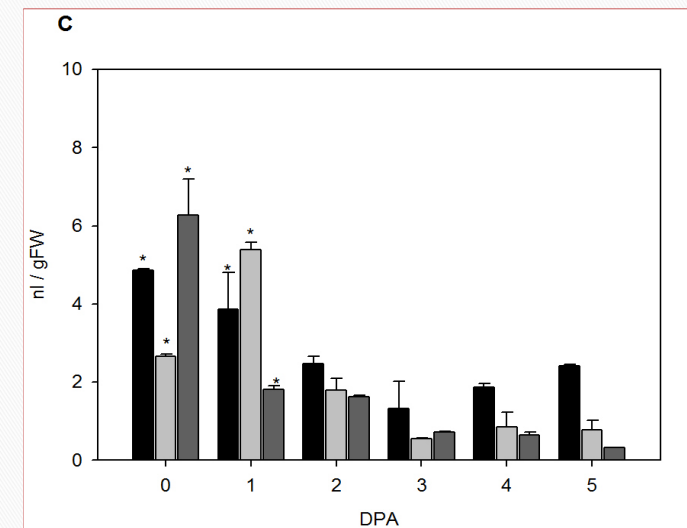
## Evolution of ethylene production during early fruit development in zucchini fruits of the non-parthenocarpic variety versus parthenocarpic varieties



MUCU16



WITHAKER



CAVILI



# CONCLUSION

- Parthenocarpic cultivars show phototropism as traditional cultivar MUCU16. Phototropism is not enough discriminative to be implemented as biomarker in breeding programs of parthenocarpy
- Unpollinated fruit of cultivar withaker, as cavili, show a clear pattern of ethylene release along fruit growth without the peak showed by traditional cultivar MUCU16. This is a clear pattern of differentiation of parthenocarpic cultivar, but the implementation as a biomarker is limited by prize and time to record in breeding programs.

