

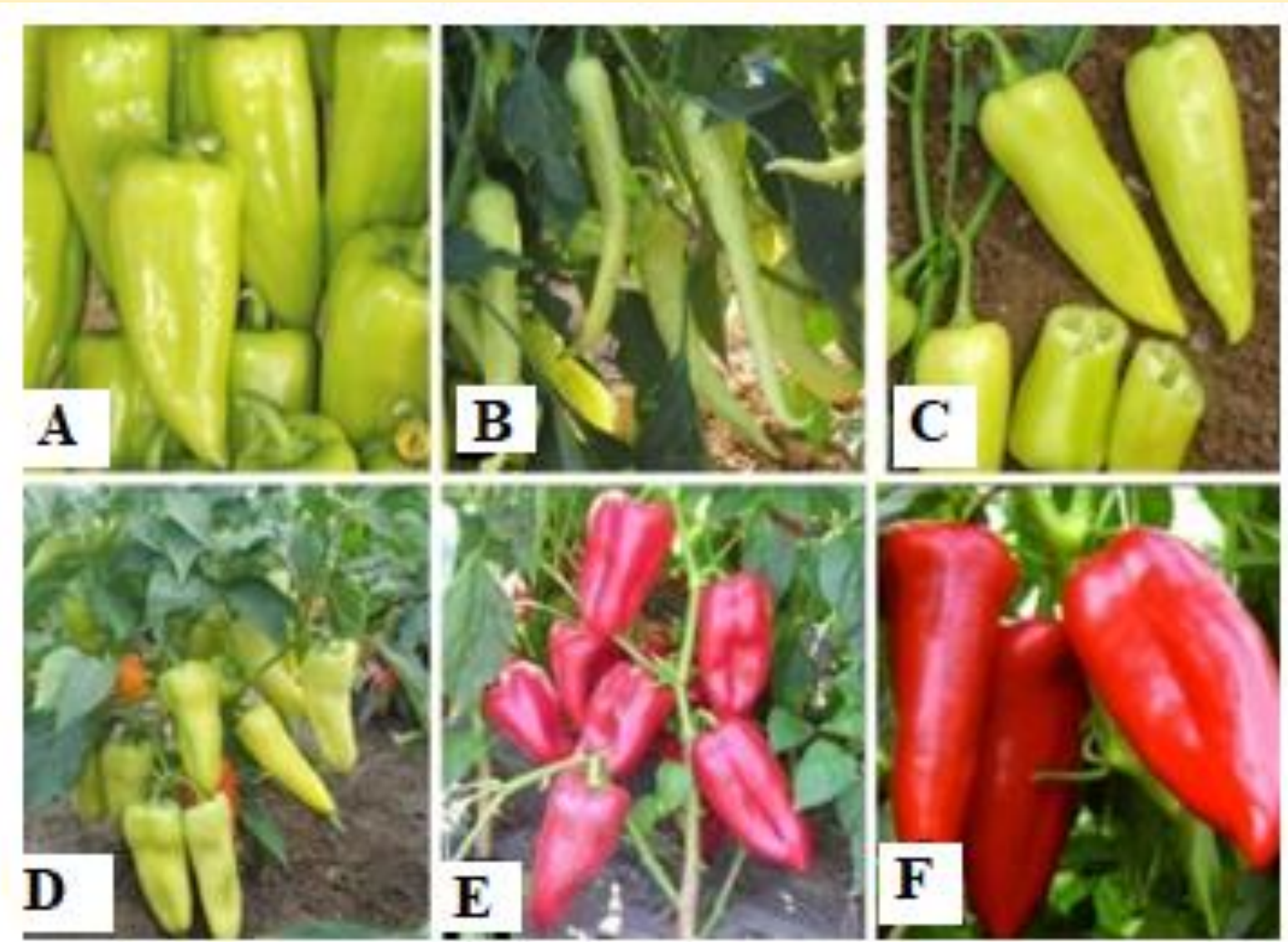
Determination of photosynthetic pigments in fruits from pepper androgenic plant

Marija Pockovska¹, Fidanka Trajkova^{1*}, Liljana Koleva Gudeva¹

¹Faculty of Agriculture, Goce Delcev University – Stip
Krste Misirkov, 10 A, 2000 Stip, Republic of North Macedonia

*Corresponding author: fidanka.trajkova@ugd.edu.mk

Series of cultures of anthers from different genotypes of pepper (*Capsicum annuum* L.) were cultivated to determine their androgenic potential during the two-year research. Six pepper genotypes (Edita F1, Homera F1, Duga bela, Una, Amfora and Kurtovska kapija) were used in the research with different number of anthers as starting material.

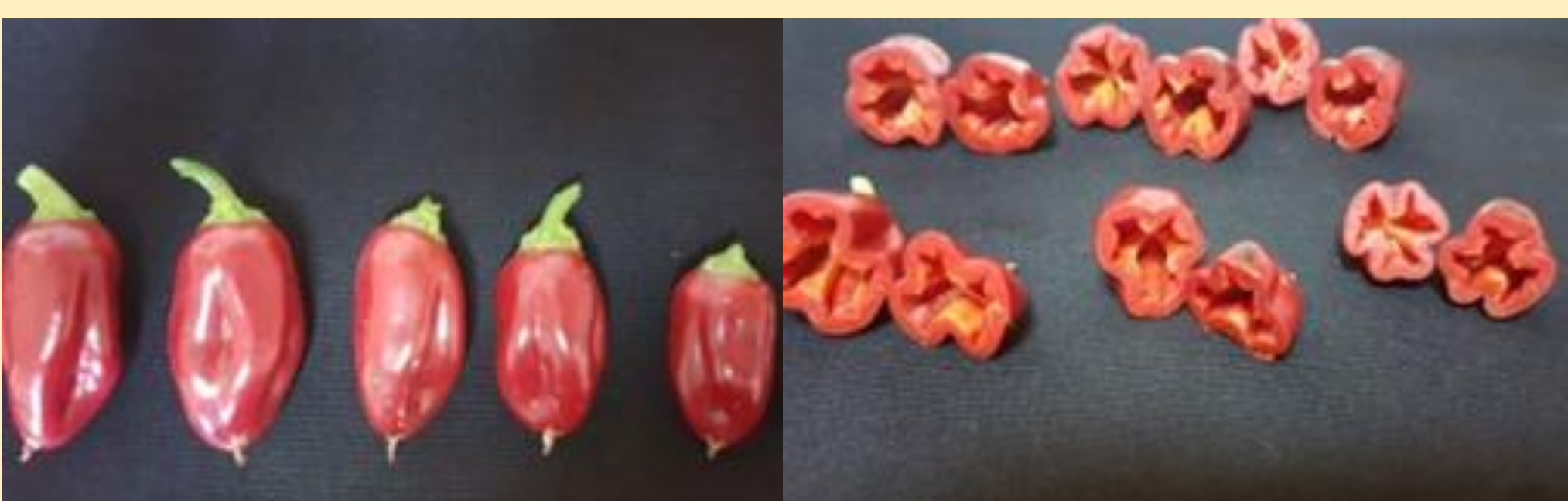


Donor genotypes for androgenesis
A) Edita F1 B) Homera F1 C) Bela duga D) Una
E) Amfora, F) Kurtovska kapija.

Androgenesis was induced only in Edita F1 and Bela duga. The anthers from both genotypes yield different number of androgenic embryos. As a final result, only one fully acclimatized androgenic plant (Edita_R1) from Edita F1 was obtained.



Fruits from A) androgenic plant Edita_R1
B) donor genotype, hybrid Edita F1



Fruits from androgenic plant Edita_R1 in botanical maturity



Extraction of chlorophyll and carotenoids and their determination on UV/VIS spectrophotometer

The absorbances of chlorophylls and carotenoids were measured spectrophotometrically at the wavelengths:

- Chlorophyll a (Ch_a) – 665 nm wavelength
- Chlorophyll b (Ch_b) – 649 nm wavelength
- Total chlorophyll a+b (Ch_{a+b}) – 654 nm wavelength
- Carotenoids (Car) – 470 nm wavelength

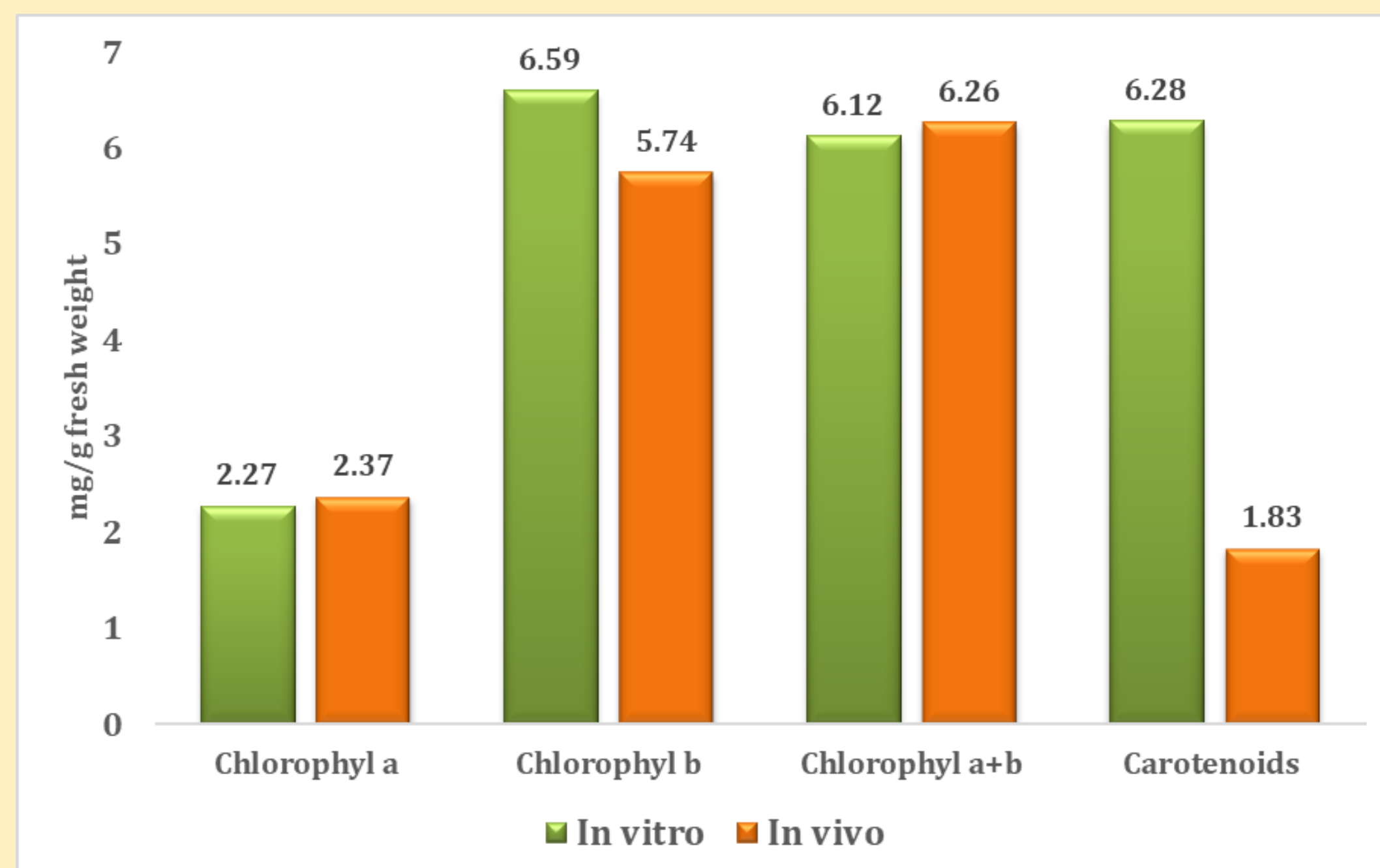
The analyzed photosynthetic pigments were calculated according to the formulas (Velesanova, 2019; Palta, 1990):

$$Ch_a = (13,7 \times A_{665} - 5,76 \times A_{649})$$

$$Ch_b = (25,8 \times A_{649} - 7,6 \times A_{665})$$

$$Ch_{a+b} = \frac{1000 \times A_{654}}{39,8}$$

$$Car = \frac{(1000 \times A_{470} - 2,13 \times A_{665}) - (97,64 \times A_{649})}{209}$$



The content of photosynthetic pigments in ripe fruits from the androgenic plant Edita_R1 was analysed and compared to the same physiological parameters in ripe fruits from donor genotype Edita F1. The average value of the content of carotenoids in the fruits of androgenic plant Edita_R1 was significantly higher as compared to the fruits of the mother genotype Edita F1.