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Functional Plant Biology

Supplementary Material

Growth, ultrastructural and physiological characteristics of *Abelmoschus* cytotypes under elevated ozone stress: a study on ploidy-specific responses

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Supplementary Table S1: Three-way ANOVA (F ratios) test to find the effect of Cytotypes(C), elevated O₃ treatment (O₃) plant growth stage (A) and their interactions (C×O₃), (C×A), (O₃× A) and (C×O₃×A) on different growth, physiological and biochemical parameters of *Abelmoschus moschatus*, *Abelmoschus esculentus* and *Abelmoschus caillei*.

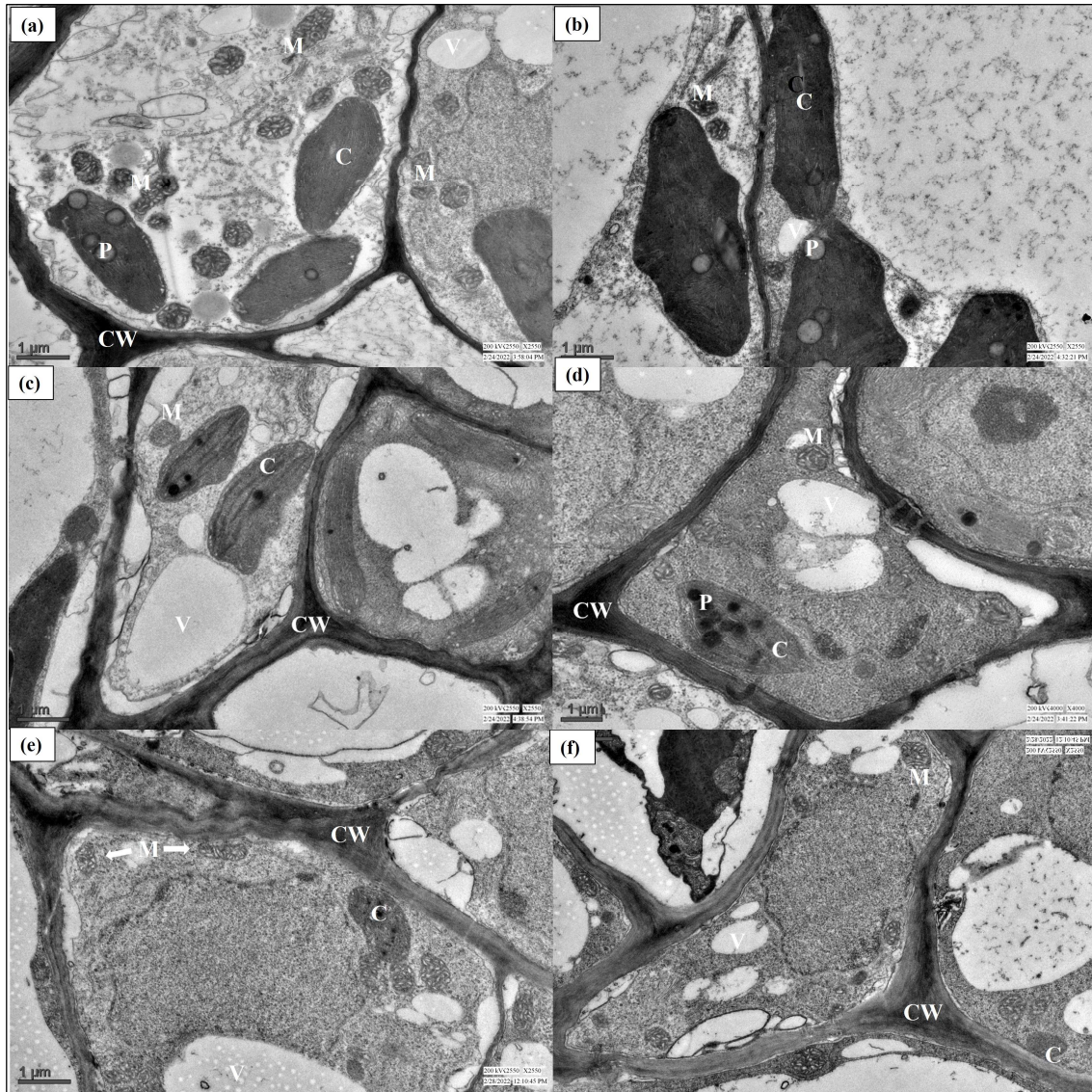
	C	A	O ₃	C×O ₃	A×O ₃	C×A	C×A×O ₃
Chl.	525.6***	1652.3***	925.8***	78.7***	12***	143.7***	16.6***
Caro	777.1***	2773***	1342.2***	128.9***	29.5***	298.8***	67.5***
P _s	277.1***	328.7***	359.8***	2.2ns	19.2***	16.3***	3.3*
g _s	1.7ns	12.5***	5.9*	9.9***	0.3ns	0.8***	19.5***
C _i	4.9*	7.1**	1.7ns	6.1**	14.6***	0.5ns	5.5**
E	0.9ns	151.8***	5.1*	1.4ns	14.3***	0.6ns	4.2**
F _v /F _m	0.7ns	29.9***	53.6***	0.5ns	12***	15***	2.4ns
NOL	450.6***	97.6***	154.6***	47.8***	17.1***	50.3***	7.2***
PH	410.7***	3243.1***	585.6***	25.6***	129.1***	168.4***	7.8***
LA	6769.4***	14429.5***	3397.4***	181.8***	430.2***	715.9***	107.8***
Biomass	9374.8***	6819.5***	1528.8***	826.1***	502.1***	2852.5***	257.6***

level of significance; ns - non-significant,

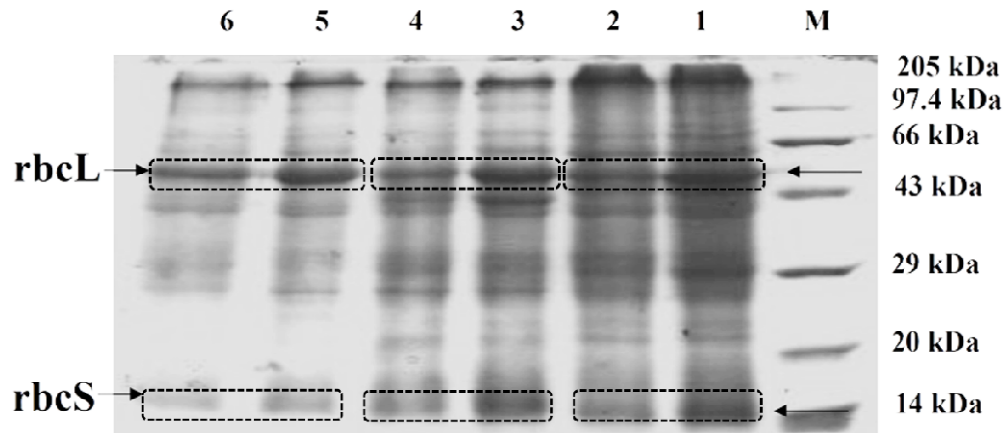
* $p \leq 0.05$,

** $p \leq 0.01$,

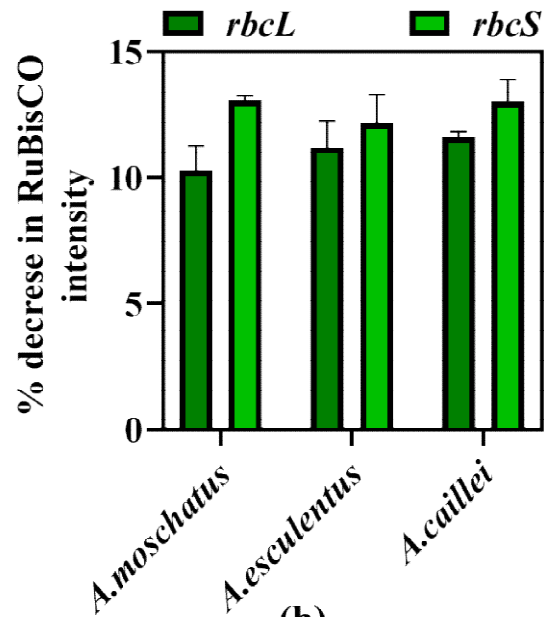
*** $p \leq 0.001$.



Supplementary Fig. S1: Scanning electron microscopy (SEM) images (at 1.0 KX) of leaves surfaces of *Abelmoschus moschatus* under (a) AO₃ (b) EO₃, *Abelmoschus esculentus* (c) AO₃ (f) EO₃ and *Abelmoschus caillei* (e) AO₃ (d) EO₃ respectively. Yellow arrow indicates stomata.



(a)

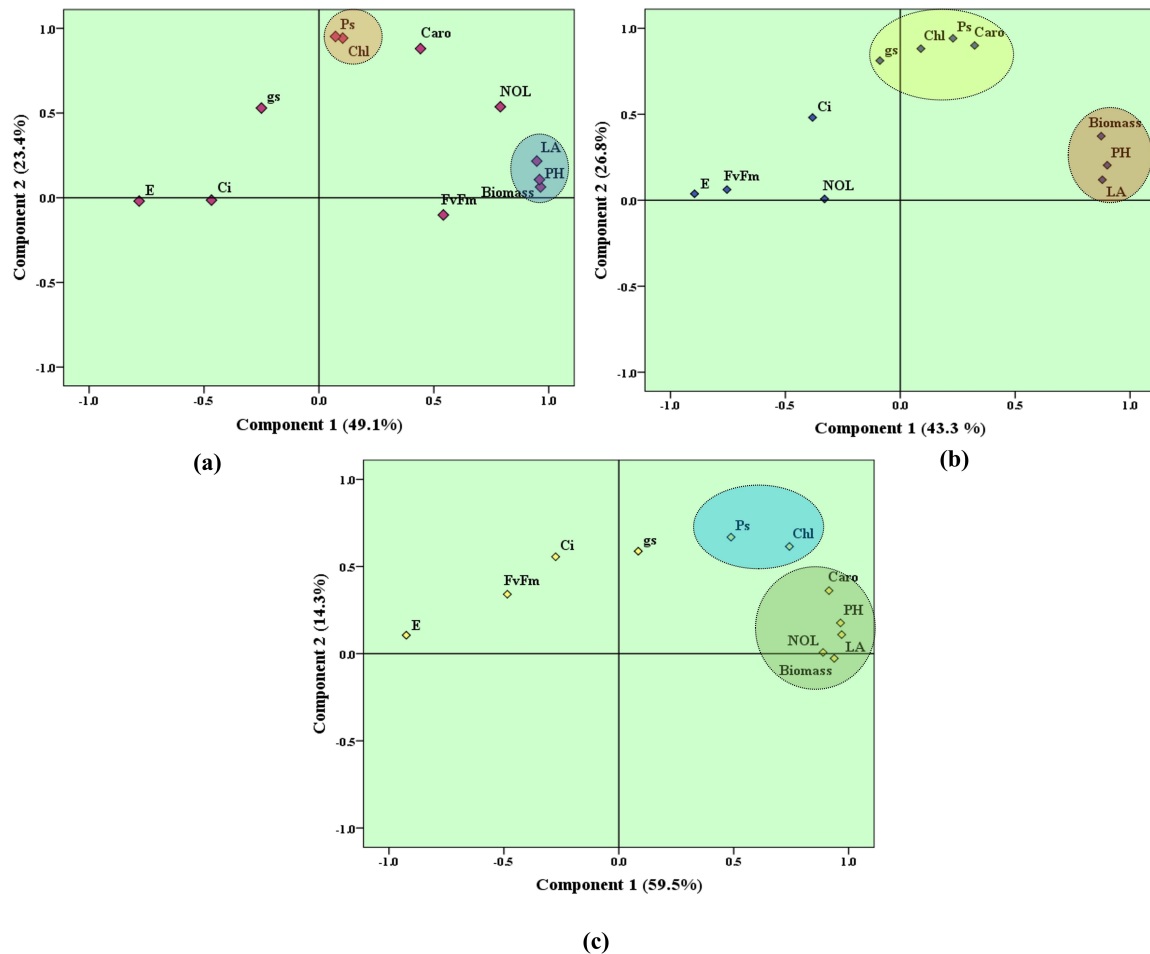


(b)

Supplementary Fig. S2: (a) SDS-PAGE profile of soluble protein isolated from the leaves of *Abelmoschus* cytotypes under AO₃ and EO₃ treatments. Large (*rbcL*) and small (*rbcS*) subunits of RuBisCO are marked in dotted boxes. M: marker lane (3.5–205 kDa); 1–2: protein isolated from *A. moschatus* (monoploid) plants grown in AO₃ and EO₃, respectively, 3–4: protein isolated from *A. esculentus* (diploid) plants grown in AO₃ and EO₃ respectively, and 5–6: protein isolated from *A. caillei* (triploid) plants grown in AO₃ and EO₃, respectively.

(b) Relative intensity of the bands of *rbcL* and *rbcS* as quantified by ImageJ (Fiji) software.

The results are representative of three biological replicates. The error bars are standard errors.



Supplementary Fig. S3: Principal component analysis (PCA) shows two main components for the relationship between growth, physiology and biomass related attributes in *Abelmoschus* cytotypes at all the three growth stages of the experiment. Abbreviations: NOL— number of leaves; LA—leaf area; PH—plant height; Chl—Chlorophyll; Car— Carotenoid; B—biomass; Ps—photosynthetic rate; gs—stomatal conductance; Ci—Internal CO₂; E—transpiration rate; F_v/F_m—Maximum quantum yield of PSII. Different colours of circles represent different groups of correlation. where (a) *Abelmoschus moschatus* (b) *Abelmoschus esculentus* (c) *Abelmoschus caillei*.