

Additional file 1 - Carotenoid concentrations ($\mu\text{g g}^{-1}$ fresh weight) in all four developmental stages (S1-S4) of *L. barbarum* and *L. ruthenicum* fruits.

Compound	S1	S2	S3	S4
<i>L. barbarum</i>				
Zeaxanthin	ND	ND	77.16 \pm 28.26	381.60 \pm 26.78
β -Cryptoxanthin	ND	ND	3.00 \pm 0.05	17.59 \pm 4.81
β -Carotene	12.91 \pm 2.29	10.18 \pm 2.76	16.70 \pm 3.45	28.99 \pm 6.46
Total carotenoids ^a	44.36 \pm 2.38	21.70 \pm 3.23	105.36 \pm 28.26	508.90 \pm 20.31
<i>L. ruthenicum</i>				
Zeaxanthin	ND	ND	ND	ND
β -Cryptoxanthin	ND	ND	ND	ND
β -Carotene	18.01 \pm 1.04	8.48 \pm 0.65	3.22 \pm 0.44	ND
Total carotenoids ^a	34.46 \pm 2.18	25.97 \pm 2.00	9.57 \pm 2.00	0.01 \pm 0.00

^aOnly three major carotenoids (zeaxanthin, β -cryptoxanthin and β -carotene) were quantified for the HPLC results, while the total amount of carotenoids was measured by spectrophotometer method.