

**Table S1.** Evolution of the carotenoid composition ( $\mu\text{g/g}$  dry weight)<sup>1</sup> during long-term storage (12 months) of durum wheat (Don Pedro variety) whole-grain flours.

Carotenoid	T (°C)	Time (months)												
		Initial content ( $\mu\text{g/g}$ )	1	2	3	4	5	6	7	8	9	10	11	12
(All- <i>E</i> )-Zeaxanthin	-32	0.08 ± 0.00	0.08 ± 0.00	0.07 ± 0.00	0.08 ± 0.00	0.08 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.08 ± 0.00	0.08 ± 0.00	0.08 ± 0.00	0.08 ± 0.00	0.08 ± 0.00	0.08 ± 0.00
		a	ab	ab	a	a	ab	ab	b	b	b	ab	ab	b
	6		0.08 ± 0.00	0.08 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.00
		a	abc	d	bc	abc	ab	abc	d	abc	c	bc	a	a
	20		0.07 ± 0.00	0.07 ± 0.00	0.07 ± 0.01	0.06 ± 0.00	0.06 ± 0.00	0.05 ± 0.00	0.05 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.03 ± 0.00
		ab	c	a	b	d	d	e	d	e	e	e	f	f
(all- <i>E</i> )-Lutein	37		0.06 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
		a	b	c	d	e	f	e	e	g	g	g	h	h
	50		0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-	-	-
		a	b	c	cd	de	f	ef	f	f	f	-	-	-
	-32	1.08 ± 0.02	1.06 ± 0.01	1.04 ± 0.02	1.05 ± 0.02	1.05 ± 0.01	1.06 ± 0.02	1.05 ± 0.01	1.09 ± 0.03	1.09 ± 0.04	1.05 ± 0.02	1.07 ± 0.00	1.07 ± 0.00	1.08 ± 0.02
		abcd	ae	abe	abce	e	abcd	bcd	f	f	bcd	cd	df	df
Total (Z)-Lutein	6		0.98 ± 0.01	1.02 ± 0.01	1.03 ± 0.00	1.03 ± 0.01	1.04 ± 0.05	1.04 ± 0.01	1.04 ± 0.02	1.04 ± 0.01	0.98 ± 0.01	1.03 ± 0.02	1.00 ± 0.01	0.98 ± 0.01
		abc	a	def	abc	abc	de	bcd	d	ef	bcd	bcd	abc	ac
	20		0.99 ± 0.00	0.95 ± 0.01	0.92 ± 0.02	0.86 ± 0.01	0.85 ± 0.01	0.79 ± 0.00	0.79 ± 0.00	0.73 ± 0.01	0.71 ± 0.01	0.67 ± 0.00	0.56 ± 0.01	0.53 ± 0.00
		a	b	a	c	d	d	e	d	e	e	f	g	g
	37		0.77 ± 0.01	0.60 ± 0.01	0.47 ± 0.01	0.32 ± 0.00	0.32 ± 0.01	0.27 ± 0.01	0.23 ± 0.01	0.17 ± 0.00	0.15 ± 0.00	0.16 ± 0.00	0.10 ± 0.00	0.10 ± 0.00
		a	b	c	d	e	f	g	h	i	i	i	j	j
Lutein monolinoleate	50		0.30 ± 0.00	0.17 ± 0.00	0.16 ± 0.00	0.13 ± 0.00	0.07 ± 0.00	0.09 ± 0.00	0.06 ± 0.00	0.07 ± 0.00	0.03 ± 0.00	-	-	-
		a	b	c	cd	d	e	e	ef	e	f	-	-	-
	-32	0.18 ± 0.00	0.17 ± 0.00	0.17 ± 0.00	0.16 ± 0.00	0.16 ± 0.00	0.16 ± 0.00	0.17 ± 0.00	0.17 ± 0.00	0.18 ± 0.00	0.17 ± 0.00	0.17 ± 0.00	0.17 ± 0.00	0.16 ± 0.00
		abc	d	ab	ad	abc	ab	bc	e	f	ab	f	c	abc
	6		0.16 ± 0.00	0.15 ± 0.00	0.17 ± 0.00	0.16 ± 0.00	0.15 ± 0.01	0.16 ± 0.00	0.16 ± 0.01	0.17 ± 0.00	0.16 ± 0.00	0.17 ± 0.00	0.16 ± 0.00	0.16 ± 0.00
		abc	abcd	d	abc	acd	e	abcd	b	ab	cd	abc	abc	abcd
	20		0.15 ± 0.00	0.15 ± 0.00	0.16 ± 0.00	0.14 ± 0.00	0.14 ± 0.00	0.13 ± 0.00	0.13 ± 0.00	0.12 ± 0.00	0.13 ± 0.00	0.11 ± 0.00	0.11 ± 0.00	0.11 ± 0.00
		a	b	b	b	c	b	d	c	d	d	e	e	e
	37		0.16 ± 0.00	0.13 ± 0.00	0.09 ± 0.00	0.07 ± 0.00	0.07 ± 0.00	0.06 ± 0.00	0.05 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.02 ± 0.00
		a	a	b	c	d	e	d	f	g	g	g	h	h
	50		0.07 ± 0.00	0.05 ± 0.00	0.05 ± 0.00	0.04 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	-	-	-
		a	b	c	d	e	f	g	f	h	i	-	-	-

Lutein 3'- <i>O</i> -linoleate	6		0.03 ± 0.00 a	0.03 ± 0.00 b	0.04 ± 0.00 c	0.04 ± 0.00 c	0.05 ± 0.00 d	0.05 ± 0.00 e	0.06 ± 0.00 f	0.06 ± 0.00 g	0.06 ± 0.00 g	0.07 ± 0.00 hi	0.07 ± 0.00 h	0.07 ± 0.00 i
	20		0.04 ± 0.01 b	0.06 ± 0.01 c	0.08 ± 0.01 d	0.08 ± 0.00 d	0.09 ± 0.00 e	0.10 ± 0.00 f	0.11 ± 0.00 g	0.11 ± 0.00 g	0.11 ± 0.00 g	0.12 ± 0.00 g	0.10 ± 0.00 f	0.11 ± 0.00 h
	37		0.09 ± 0.01 b	0.12 ± 0.01 c	0.12 ± 0.00 c	0.12 ± 0.01 bd	0.11 ± 0.01 c	0.08 ± 0.01 d	0.07 ± 0.00 e	0.05 ± 0.01 f	0.04 ± 0.00 f	0.04 ± 0.00 f	0.03 ± 0.01 a	0.03 ± 0.00 a
	50		0.10 ± 0.02 b	0.08 ± 0.01 c	0.06 ± 0.00 d	0.05 ± 0.01 e	0.03 ± 0.01 f	0.03 ± 0.00 g	0.02 ± 0.00 h	0.02 ± 0.00 a	0.01 ± 0.00 i	-	-	-
	-32	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 c	0.01 ± 0.00 ab	0.01 ± 0.00 a	0.01 ± 0.00 b	0.01 ± 0.00 ab	0.01 ± 0.00 ab
	6	a	0.01 ± 0.00 a	0.02 ± 0.00 b	0.02 ± 0.00 c	0.02 ± 0.00 c	0.02 ± 0.00 d	0.02 ± 0.00 e	0.03 ± 0.00 f	0.03 ± 0.00 g	0.03 ± 0.00 g	0.03 ± 0.00 h	0.03 ± 0.00 h	0.03 ± 0.00 h
	20	a	0.02 ± 0.00 b	0.03 ± 0.00 c	0.04 ± 0.00 d	0.04 ± 0.00 d	0.05 ± 0.00 e	0.06 ± 0.00 f	0.06 ± 0.00 g	0.06 ± 0.00 gh	0.06 ± 0.00 gi	0.06 ± 0.00 h	0.06 ± 0.00 i	0.06 ± 0.00 gh
	37	a	0.05 ± 0.00 b	0.06 ± 0.00 c	0.06 ± 0.00 c	0.06 ± 0.00 b	0.06 ± 0.00 c	0.05 ± 0.00 b	0.04 ± 0.00 d	0.03 ± 0.00 e	0.03 ± 0.00 e	0.03 ± 0.00 e	0.02 ± 0.00 f	0.02 ± 0.00 af
	50	a	0.06 ± 0.00 b	0.04 ± 0.00 c	0.03 ± 0.00 d	0.02 ± 0.00 e	0.01 ± 0.00 a	0.02 ± 0.00 f	0.01 ± 0.00 a	0.01 ± 0.00 a	0.01 ± 0.00 g	-	-	-
	-32	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.01 ± 0.00 a	0.01 ± 0.00 ab	0.01 ± 0.00 a	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.02 ± 0.00 c	0.01 ± 0.00 ab	0.01 ± 0.00 ab	0.02 ± 0.00 bc	0.01 ± 0.00 ab	0.01 ± 0.00 ab
	6	a	0.01 ± 0.00 a	0.02 ± 0.00 b	0.02 ± 0.00 c	0.02 ± 0.00 c	0.02 ± 0.00 d	0.03 ± 0.00 e	0.03 ± 0.00 f	0.03 ± 0.00 g	0.03 ± 0.00 gh	0.04 ± 0.00 ij	0.04 ± 0.00 hi	0.04 ± 0.00 j
Lutein 3'- <i>O</i> -linoleate	20	a	0.02 ± 0.00 b	0.03 ± 0.00 c	0.04 ± 0.00 d	0.04 ± 0.00 e	0.05 ± 0.00 fg	0.05 ± 0.00 f	0.05 ± 0.00 h	0.05 ± 0.00 i	0.05 ± 0.00 hi	0.05 ± 0.00 i	0.04 ± 0.00 g	0.05 ± 0.00 fg
	37	ab	0.05 ± 0.00 c	0.06 ± 0.00 d	0.05 ± 0.00 e	0.05 ± 0.00 f	0.05 ± 0.00 e	0.03 ± 0.00 fg	0.03 ± 0.00 g	0.02 ± 0.00 h	0.02 ± 0.00 hi	0.02 ± 0.00 ai	0.01 ± 0.00 j	0.01 ± 0.00 bj
	50	a	0.04 ± 0.00 b	0.04 ± 0.00 c	0.03 ± 0.00 c	0.03 ± 0.00 d	0.02 ± 0.00 e	0.02 ± 0.00 f	0.01 ± 0.00 e	0.01 ± 0.00 a	0.00 ± 0.00 g	-	-	-
	-32	0.01 ± 0.00 abc	0.01 ± 0.00 a	0.01 ± 0.00 abc	0.01 ± 0.00 d	0.00 ± 0.00 d	0.01 ± 0.00 d	0.01 ± 0.00 abc	0.01 ± 0.00 bc	0.01 ± 0.00 b	0.01 ± 0.00 ac	0.01 ± 0.00 b	0.01 ± 0.00 abc	0.01 ± 0.00 abc
	6	a	0.02 ± 0.00 b	0.02 ± 0.00 c	0.03 ± 0.00 c	0.02 ± 0.00 d	0.03 ± 0.00 c	0.03 ± 0.00 e	0.03 ± 0.00 ef	0.04 ± 0.00 g	0.03 ± 0.00 f	0.03 ± 0.00 f	0.03 ± 0.00 f	0.03 ± 0.00 f
	20	a	0.03 ± 0.00 b	0.04 ± 0.00 c	0.05 ± 0.00 d	0.04 ± 0.00 d	0.05 ± 0.00 e	0.06 ± 0.00 f	0.07 ± 0.00 g	0.06 ± 0.00 gh	0.06 ± 0.00 gh	0.06 ± 0.00 h	0.06 ± 0.00 ef	0.06 ± 0.00 ef
	37	a	0.06 ± 0.00 b	0.08 ± 0.00 c	0.07 ± 0.00 d	0.07 ± 0.00 e	0.07 ± 0.00 d	0.05 ± 0.00 e	0.04 ± 0.00 e	0.03 ± 0.00 f	0.03 ± 0.00 f	0.03 ± 0.00 f	0.02 ± 0.00 g	0.02 ± 0.00 g
	50	a	0.07 ± 0.00 b	0.05 ± 0.00 c	0.04 ± 0.00 d	0.02 ± 0.00 e	0.01 ± 0.00 fg	0.01 ± 0.00 h	0.01 ± 0.00 af	0.01 ± 0.00 g	0.00 ± 0.00 i	-	-	-
	-32	0.00 ± 0.00 abc	0.00 ± 0.00 ab	0.00 ± 0.00 abc	0.00 ± 0.00 d	0.00 ± 0.00 d	0.00 ± 0.00 d	0.00 ± 0.00 abc	0.00 ± 0.00 abc	0.00 ± 0.00 abc	0.00 ± 0.00 a	0.00 ± 0.00 bc	0.00 ± 0.00 c	0.00 ± 0.00 abc
	6	a	0.00 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00
Lutein 3'- <i>O</i> -palmitate	-32	0.00 ± 0.00 abc	0.00 ± 0.00 ab	0.00 ± 0.00 abc	0.00 ± 0.00 d	0.00 ± 0.00 d	0.00 ± 0.00 d	0.00 ± 0.00 abc	0.00 ± 0.00 abc	0.00 ± 0.00 abc	0.00 ± 0.00 a	0.00 ± 0.00 bc	0.00 ± 0.00 c	0.00 ± 0.00 abc
	6	a	0.00 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00

Lutein 3- <i>O</i> -palmitate	<b>20</b>	a	a	b	c	bc	d	e	e	f	f	f	f	f
			0.01 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.03 ± 0.00
	<b>37</b>	a	b	c	d	d	e	f	g	g	g	g	f	f
			0.03 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00
	<b>50</b>	a	b	c	c	bd	c	bd	d	e	e	e	f	f
			0.04 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	<b>-32</b>	0.00 ± 0.00 abcd	a	b	c	d	e	e	f	f	f	f	f	f
			0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	<b>6</b>	a	ae	abc	ae	e	e	abcd	bcd	d	abe	cd	abc	abcd
			0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00
	<b>20</b>	a	b	c	c	b	c	d	d	e	d	d	d	d
			0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00
	<b>37</b>	a	b	cde	cdf	ce	fgh	fgh	i	gh	g	dfh	cde	e
			0.03 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00
	<b>50</b>	a	b	c	d	e	a	f	a	g	h	-	-	-
			0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-	-	-
(all- <i>E</i> )-β-Carotene	<b>-32</b>	0.02 ± 0.00 ab	a	b	c	d	e	e	f	f	f	f	f	f
			0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00
	<b>6</b>	a	cde	abc	ab	abcd	e	f	de	abc	e	de	bcde	bcde
			0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00
	<b>20</b>	ab	a	bc	bcde	adf	cde	cdef	bce	b	cde	cdef	adef	af
			0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00
	<b>37</b>	a	a	ab	bc	cd	cd	de	abc	de	e	f	g	g
			0.02 ± 0.00	0.02 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	<b>50</b>	a	b	b	c	de	c	d	e	f	f	f	g	g
			0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	-	-	-
Lutein dilinoleate	<b>-32</b>	0.00 ± 0.00 a	a	b	c	d	e	d	g	f	f	f	-	-
			-	-	-	-	-	-	-	-	-	-	-	-
	<b>6</b>	a	a	a	a	a	a	a	a	b	c	d	a	c
			0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.01 ± 0.00
	<b>20</b>	a	a	a	a	b	b	c	d	d	d	e	f	e
			0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00	0.02 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.05 ± 0.00	0.04 ± 0.00	0.05 ± 0.00
	<b>37</b>	a	a	a	a	b	b	c	d	d	d	e	f	e
			0.01 ± 0.00	0.03 ± 0.00	0.05 ± 0.00	0.06 ± 0.00	0.08 ± 0.01	0.07 ± 0.00	0.07 ± 0.00	0.06 ± 0.00	0.06 ± 0.00	0.05 ± 0.00	0.04 ± 0.00	0.03 ± 0.00
	<b>50</b>	a	b	c	d	de	f	fg	fg	eg	de	de	h	h
			0.06 ± 0.00	0.06 ± 0.00	0.05 ± 0.00	0.04 ± 0.00	0.03 ± 0.00	0.03 ± 0.00	0.02 ± 0.00	0.02 ± 0.00	0.00 ± 0.00	-	-	-

Lutein 3'- <i>O</i> -linoleate-3- <i>O</i> -palmitate and Lutein 3'- <i>O</i> -palmitate-3- <i>O</i> -linoleate	-32	0.00 ± 0.00 a	-	-	-	-	-	-	-	-	-	-	-	-
	6		0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 b	0.00 ± 0.00 c	0.00 ± 0.00 d	0.00 ± 0.00 c	
	20		0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.01 ± 0.00 b	0.01 ± 0.00 b	0.01 ± 0.00 c	0.02 ± 0.00 d	0.02 ± 0.00 d	0.02 ± 0.00 d	0.02 ± 0.00 e	0.02 ± 0.00 f	0.02 ± 0.00 e
	37		0.01 ± 0.00 b	0.02 ± 0.00 c	0.04 ± 0.00 d	0.04 ± 0.00 d	0.05 ± 0.00 e	0.05 ± 0.00 f	0.05 ± 0.00 f	0.04 ± 0.00 d	0.03 ± 0.00 d	0.03 ± 0.00 d	0.02 ± 0.00 c	0.02 ± 0.00 c
	50		0.05 ± 0.00 b	0.05 ± 0.00 c	0.04 ± 0.00 c	0.03 ± 0.00 d	0.02 ± 0.00 e	0.02 ± 0.00 f	0.01 ± 0.00 e	0.01 ± 0.00 e	0.00 ± 0.00 a	-	-	-
Lutein dipalmitate	-32	0.00 ± 0.00 a	-	-	-	-		-	-	-	-	-	-	-
	6		-	-	-	-	-	-	-	-	-	-	-	-
	20		0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 a	0.00 ± 0.00 bc	0.00 ± 0.00 bc	0.00 ± 0.00 b	0.00 ± 0.00 d	0.00 ± 0.00 cd	0.00 ± 0.00 bc
	37		0.00 ± 0.00 b	0.00 ± 0.00 bc	0.01 ± 0.00 def	0.01 ± 0.00 dgh	0.01 ± 0.00 i	0.01 ± 0.00 gi	0.01 ± 0.00 ghi	0.01 ± 0.00 de	0.01 ± 0.00 deh	0.01 ± 0.00 dh	0.01 ± 0.00 cef	0.00 ± 0.00 cf
	50		0.01 ± 0.00 b	0.01 ± 0.00 bc	0.01 ± 0.00 c	0.01 ± 0.00 d	0.01 ± 0.00 e	0.01 ± 0.00 f	0.00 ± 0.00 ef	0.00 ± 0.00 ef	0.00 ± 0.00 a	-	-	-
<b>Monoesters and Regioisomers ratios</b>														
Lutein monopalmitate/ Lutein monolinoleate	-32	0.29	0.27	0.29	0.22	0.18	0.20	0.29	0.29	0.31	0.26	0.27	0.27	0.28
	6		0.69	0.73	0.65	0.65	0.57	0.60	0.56	0.57	0.51	0.47	0.48	0.46
	20		0.61	0.65	0.59	0.55	0.58	0.55	0.58	0.56	0.56	0.53	0.53	0.51
	37		0.67	0.67	0.63	0.59	0.62	0.61	0.61	0.59	0.60	0.63	0.65	0.62
	50		0.67	0.60	0.62	0.46	0.37	0.42	0.34	0.39	0.00	0.00	0.00	0.00
Lutein 3- <i>O</i> -linoleate /Lutein 3'- <i>O</i> -linoleate	-32	1.04	1.09	0.96	1.03	0.96	1.12	1.03	1.30	1.20	1.19	1.11	1.06	1.09

Lutein 3- <i>O</i> - palmitate /Lutein 3'- <i>O</i> -palmitate	<b>6</b>		1.09	1.10	1.11	1.15	1.20	1.23	1.19	1.11	1.12	1.08	1.06	1.08
	<b>20</b>		1.14	1.08	1.02	1.11	1.03	0.85	0.84	0.83	0.88	0.79	0.75	0.75
	<b>37</b>		1.00	0.97	0.87	0.79	0.75	0.73	0.74	0.68	0.66	0.59	0.50	0.68
	<b>50</b>		0.77	0.83	1.06	1.26	1.38	1.11	1.09	0.76	0.49	0.00	0.00	0.00
	<b>-32</b>	1.25	1.24	1.22	1.93	1.95	1.65	1.20	1.33	1.39	1.30	1.29	1.10	1.25
	<b>6</b>		4.00	3.49	3.07	3.11	2.47	2.30	2.25	2.03	1.84	1.76	1.78	1.77
	<b>20</b>		2.40	1.40	1.05	0.93	0.90	0.76	0.76	0.69	0.71	0.65	0.67	0.61
	<b>37</b>		0.90	0.78	0.71	0.62	0.61	0.61	0.63	0.60	0.61	0.65	0.62	0.54
	<b>50</b>		0.62	0.68	0.78	1.21	1.05	0.52	0.67	0.70	0.00	0.00	0.00	0.00

<sup>1</sup>Data are the mean  $\pm$  standard error (n=5 for the starting sample, n=3 for the rest of the samples). Different letters within the same line (for each pigment) indicate significant differences (p<0.05) determined by the Duncan test.