Appendix: Supplementary table:

Table S1: Inverse prediction of percent polymeric color based on nonlinear regression model

Stage	Treatment	Specified Percent Polymeric Color (%)	Predicted week	Std error	Lower 95%	Upper 95%
1	Control	25	2.76	0.11	2.56	2.97
1	Glutathione	25	4.75	0.20	4.35	5.14
1	DTPA	25	3.23	0.14	2.95	3.50
1	Galacturonic acid	25	3.02	0.11	2.80	3.24
1	Tannic acid	25	3.01	0.11	2.80	3.22
2	Control	40	1.83	0.12	1.59	2.07
2	Glutathione	40	3.55	0.35	2.85	4.24
2	Glutathione + Lipoic	40	3.49	0.18	3.14	3.85
2	GLA	40	4.36	0.42	3.53	5.19
2	Lipoic acid	40	2.02	0.13	1.77	2.27
2	Ascorbic acid	40	2.01	0.11	1.78	2.23

Supplementary figures:

Figure S1. Three parameter exponential decay model of percent polymeric color in Stage 1.

Figure S2. Three parameter exponential decay model of percent polymeric color in Stage 2.

Figure S3. ANOM plots of predicted week and growth rate of total anthocyanins and percent polymeric color in Stage 1.

Figure S4. ANOM plots of predicted week and growth rate of total anthocyanins and percent polymeric color in Stage 2.

Figure S5. Ellagitannin concentrations in blackberry juice fortified with stabilizing agents over accelerated storage in Stage 1. LSmeans Treatment*Time ± one standard error (n=3) based on the fitted model. Dashed horizontal line represents mean value for prepasteurized juice.

Figure S6. Ellagitannin concentrations in blackberry juice fortified with stabilizing agents over accelerated storage in Stage 2. LSmeans Treatment*Time ± one standard error (n=3) based on the fitted model. Dashed horizontal line represents mean value for prepasteurized juice.

Figure S7. Flavonol concentrations in blackberry juice fortified with stabilizing agents over accelerated storage in Stage 1. LSmeans Treatment*Time ± one standard error (n=3) based on the fitted model. Dashed horizontal line represents mean value for prepasteurized juice.

Figure S8. Flavonol concentrations in blackberry juice fortified with stabilizing agents over accelerated storage in Stage 2. LSmeans Treatment*Time ± one standard error (n=3) based on the fitted model. Dashed horizontal line represents mean value for prepasteurized juice.

Figure S9. Mass spectra of quercetin-3-rutinoside in negative mode.

Figure S10. Mass spectra of quercetin-3-pentosyl-glucuronide in negative mode.

Figure S11. Mass spectra of quercetin-3-galactoside in negative mode.

Figure S12. Mass spectra of quercetin-3-glucoside in negative mode.

Figure S13. Mass spectra of quercetin-3-glucuronide in negative mode.

Figure S14. Mass spectra of unidentified blackberry flavonol in negative mode.

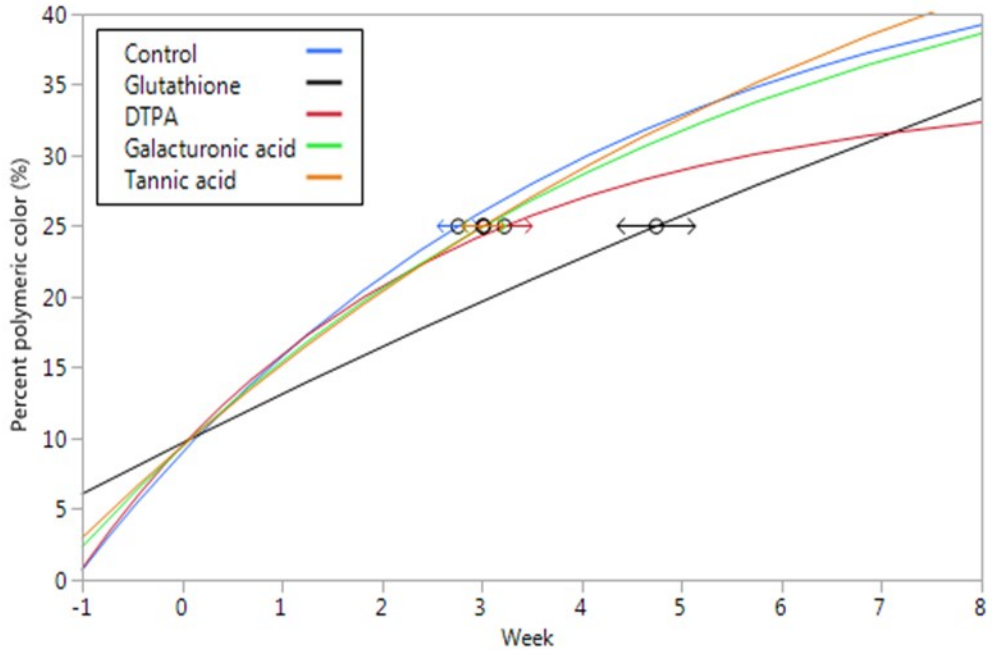
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Percent polymeric color (%)
Week
0
5
10
15
20
25
30
35
40
-1
0
1
2
3
4
5
6
7
8

Figure S1

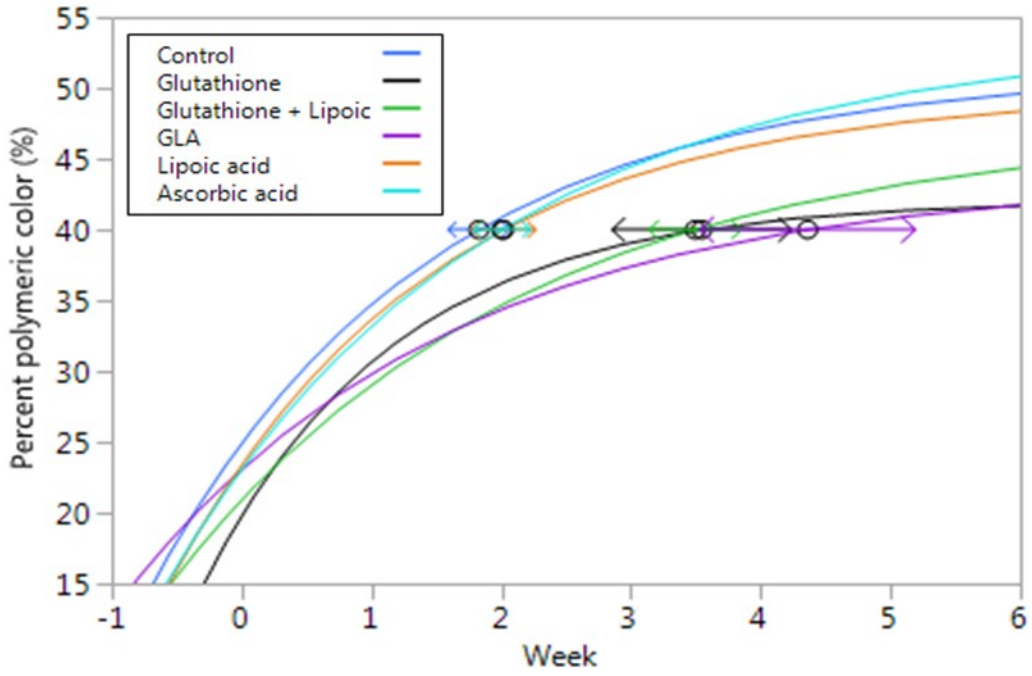
Control
Glutathione
Glutathione + Lipoic
GLA
Lipoic acid
Ascorbic acid
Percent polymeric color (%)
55
50
45
40
35
30
25
20
15
-1
0
1
2
3
4
5
6
Week

Figure S2

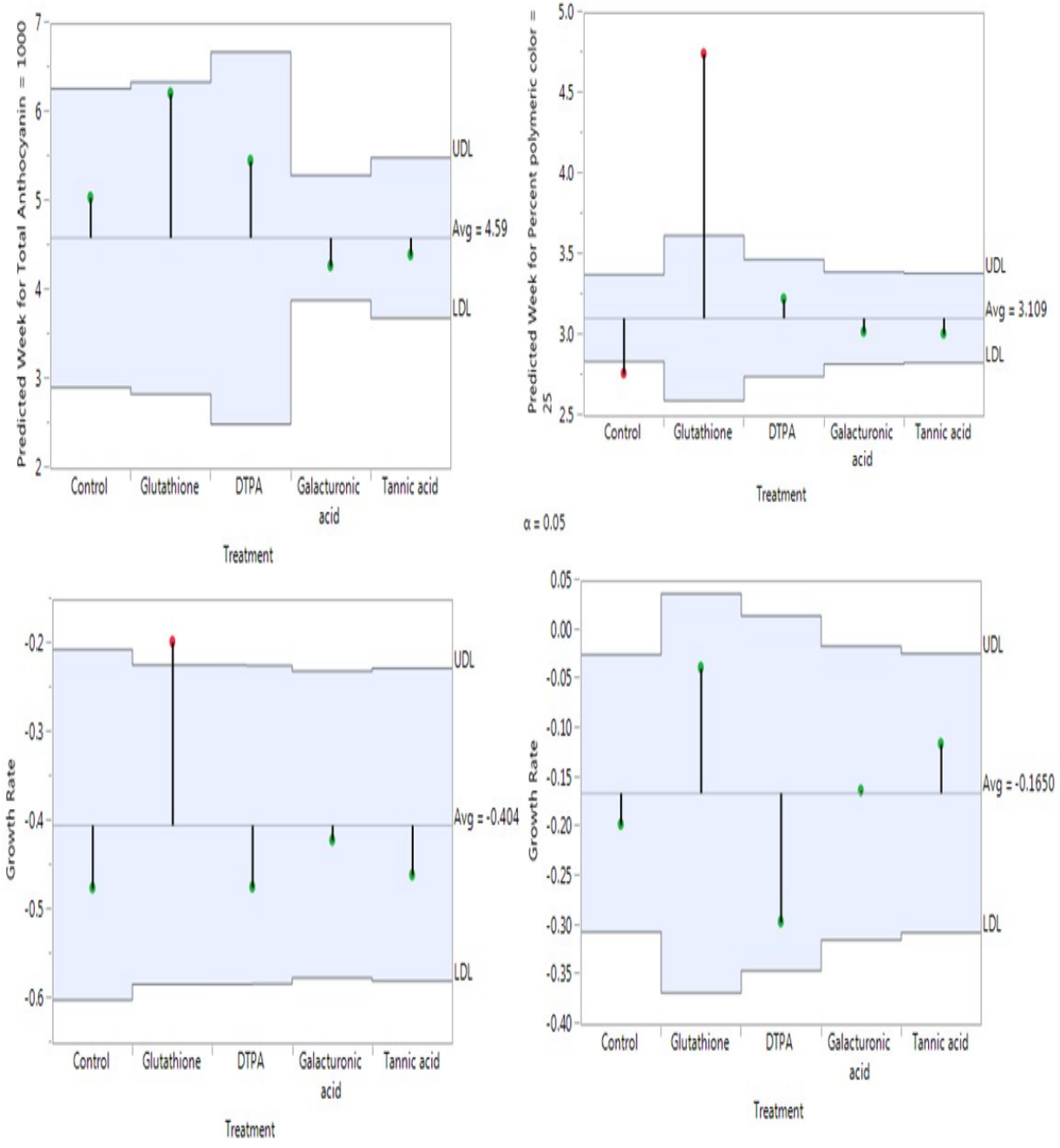
Predicted Week for Total Anthocyanin = 1000
UDL
Avg = 4.59
LDL
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Treatment
Predicted Week for Percent polymeric color = 25
UDL
Avg = 3.109
LDL
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Treatment
α = 0.05
Growth Rate
UDL
Avg = -0.404
LDL
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Treatment
Growth Rate
UDL
Avg = -0.1650
LDL
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Treatment

Figure S3

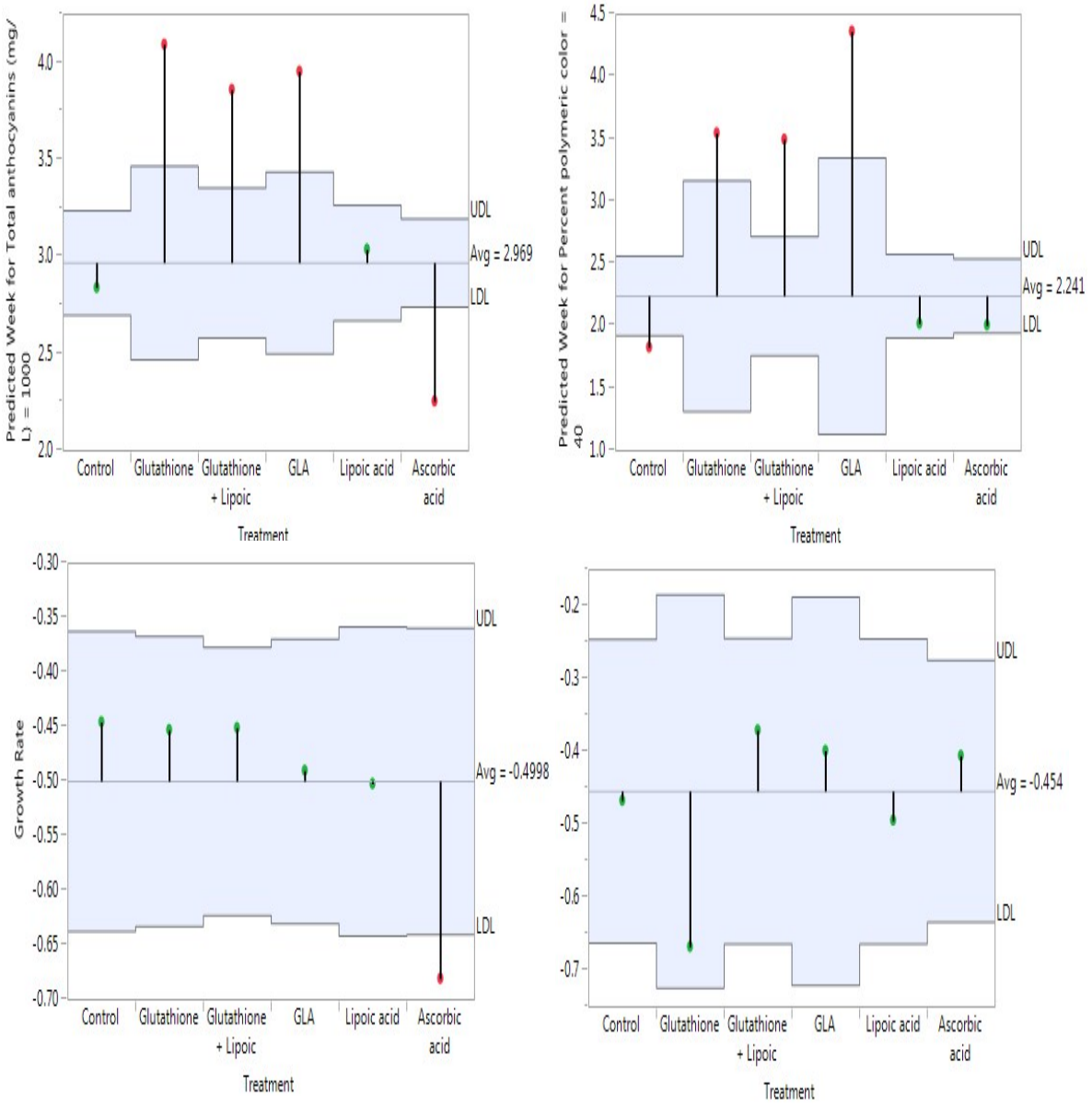
Predicted Week for Total anthocyanins (mg/L) = 1000
UDL
Avg = 2.969
LDL
Control
Glutathione
Glutathione + Lipoic
GLA
Lipoic acid
Ascorbic acid
Treatment
Predicted Week for Percent polymeric color = 40
UDL
Avg = 2.241
LDL
Growth Rate
UDL
Avg = -0.4998
LDL
UDL
Avg = -0.454
LDL

Figure S4

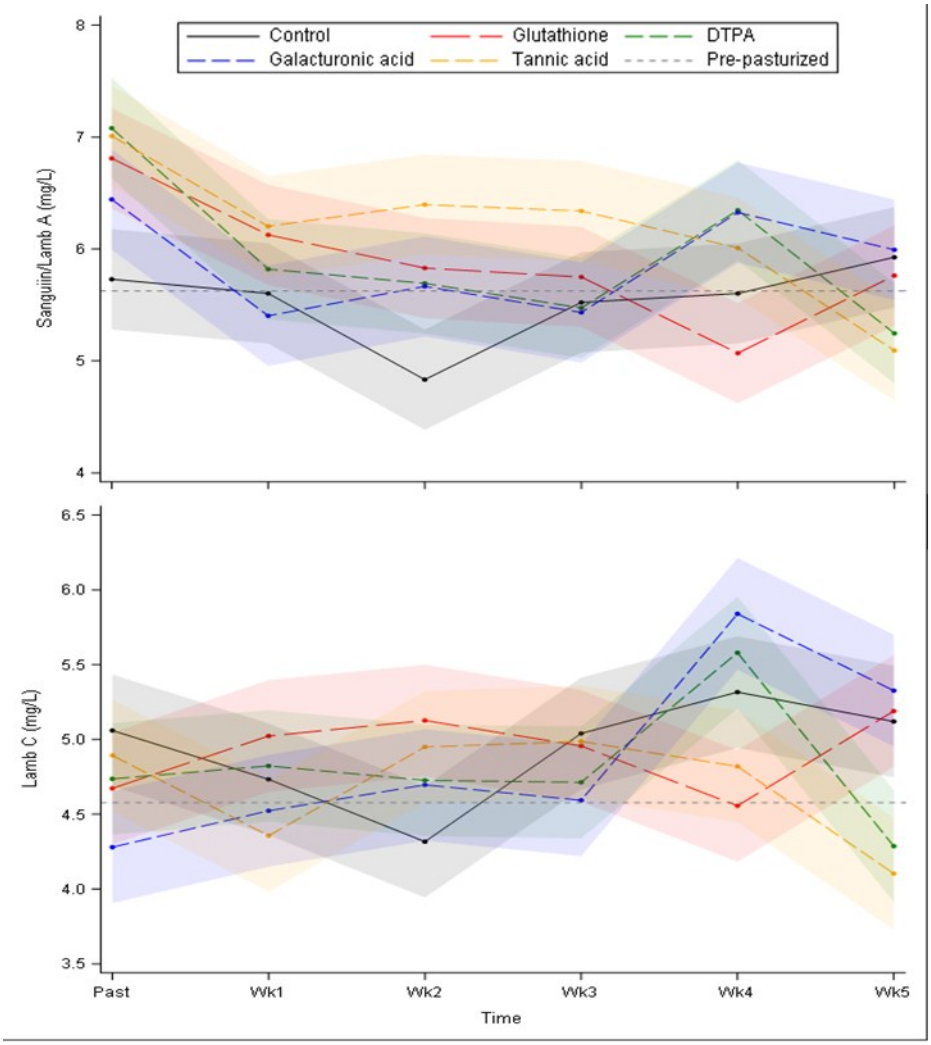
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Pre-pasturized
Sanguiin/Lamb A (mg/L)
Lamb C (mg/L)
Past
Wk1
Wk2
Wk3
Wk4
Wk5
Time

Figure S5

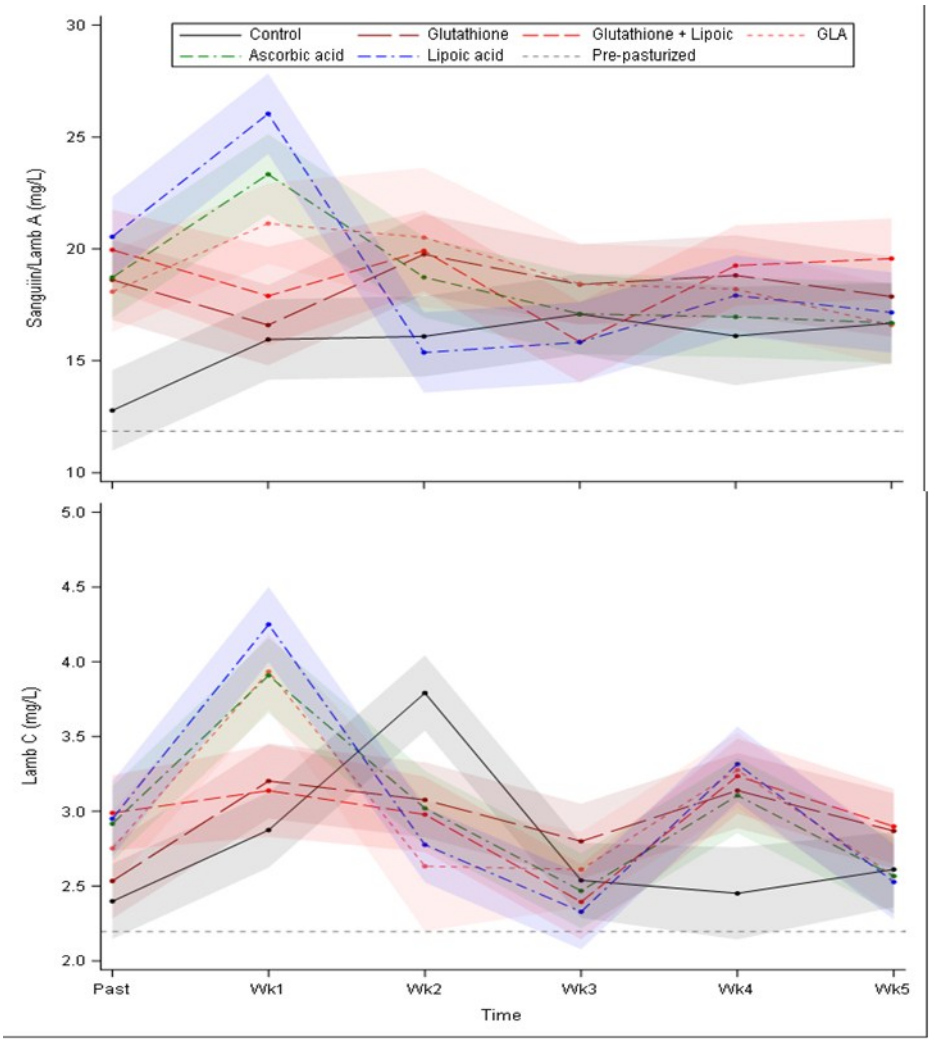
Control
Glutathione
Glutathione + Lipoic
GLA
Ascorbic acid
Lipoic acid
Pre-pasturized
Sanguiin/Lamb A (mg/L)
Lamb C (mg/L)
Past
Wk1
Wk2
Wk3
Wk4
Wk5
Time

Figure S6

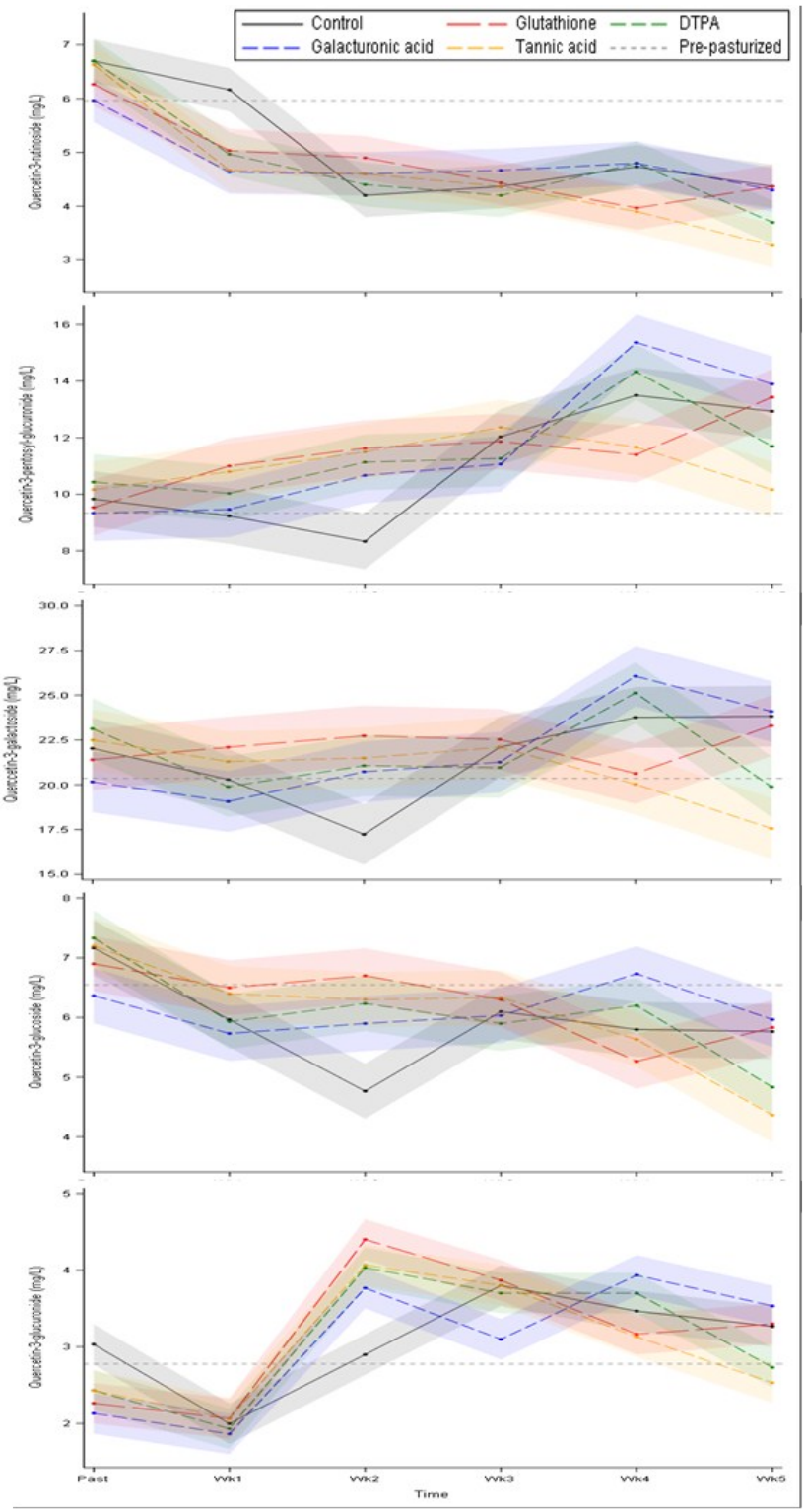
Control
Glutathione
DTPA
Galacturonic acid
Tannic acid
Pre-pasturized
Quercetin-3-rutinoside (mg/L)
Quercetin-3-pentosyl-glucuronide (mg/L)
Quercetin-3-galactoside (mg/L)
Quercetin-3-glucoside (mg/L)
Quercetin-3-glucuronide (mg/L)
Past
Wk1
Wk2
Wk3
Wk4
Wk5
Time

Figure S7

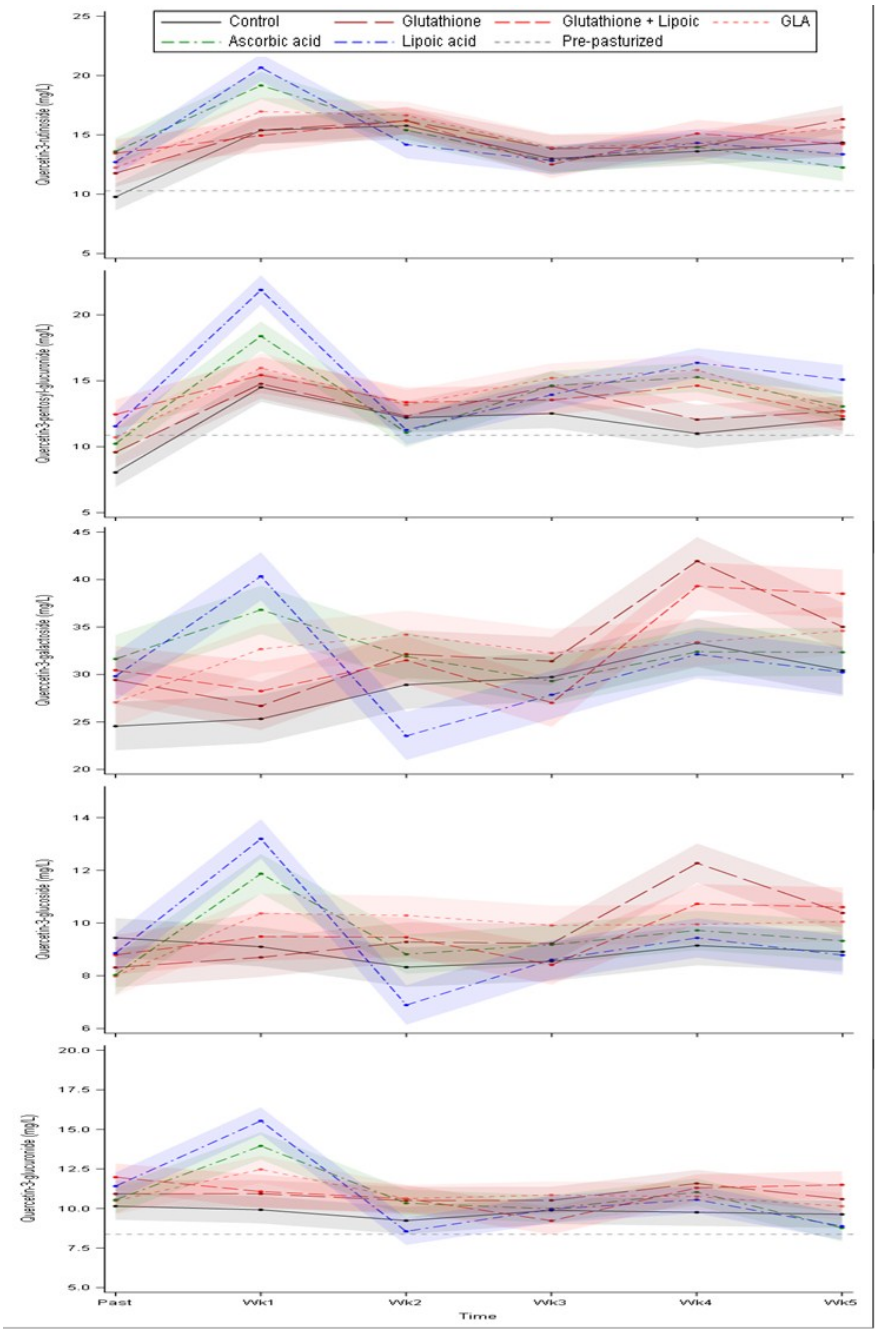
Control
Glutathione
Glutathione + Lipoic
GLA
Ascorbic acid
Lipoic acid
Pre-pasturized
Quercetin-3-rutinoside (mg/L)
Quercetin-3-pentosyl-glucuronide (mg/L)
Quercetin-3-galactoside (mg/L)
Quercetin-3-glucoside (mg/L)
Quercetin-3-glucuronide (mg/L)
Past
Wk1
Wk2
Wk3
Wk4
Wk5
Time

Figure S8

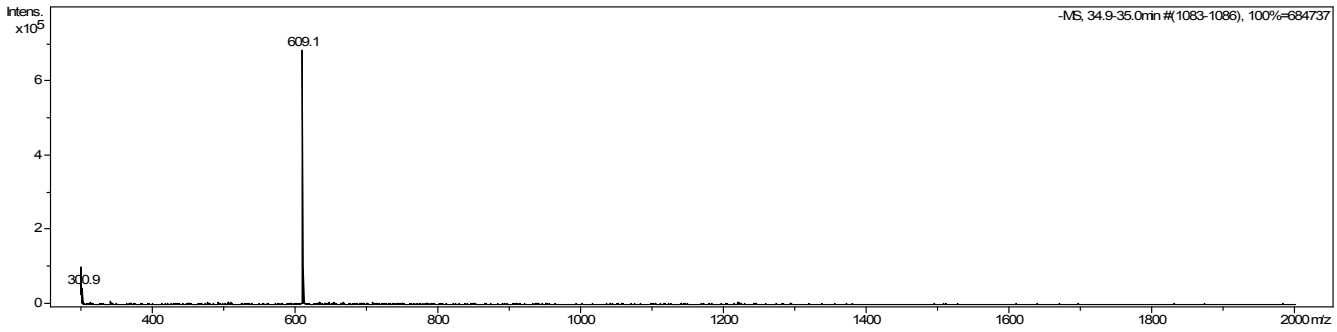

Figure S9

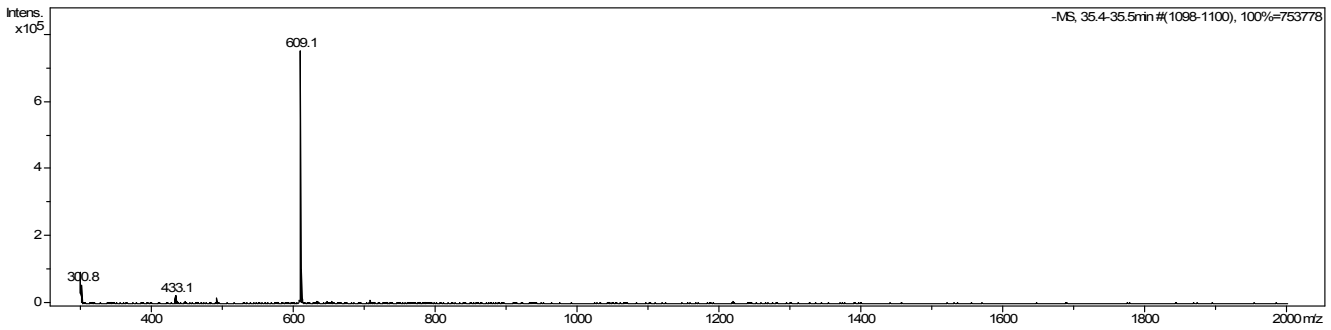

Figure S10

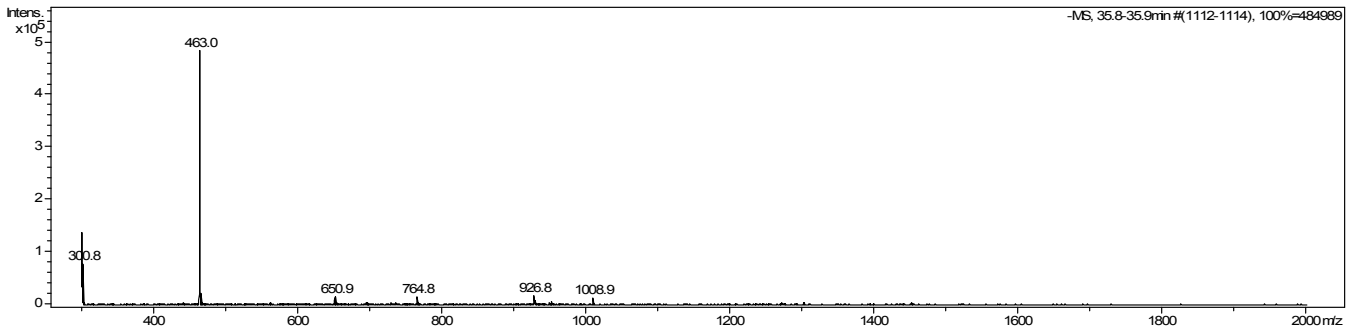

Figure S11

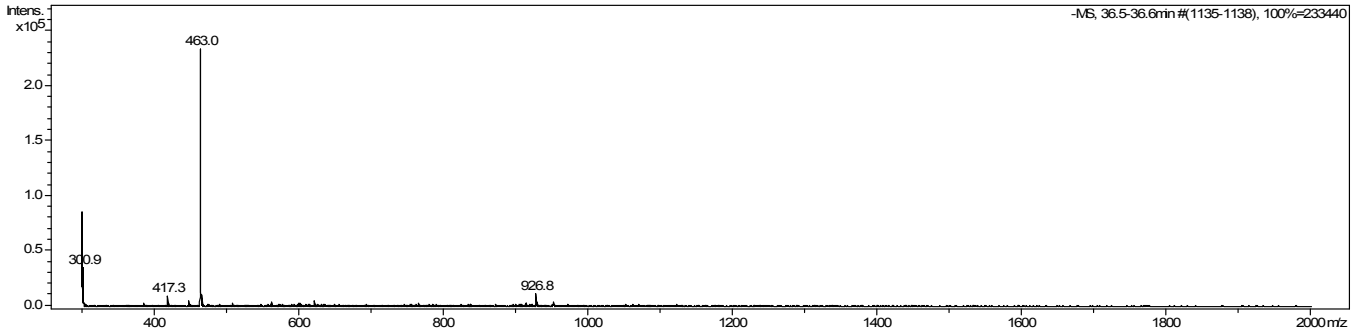

Figure S12

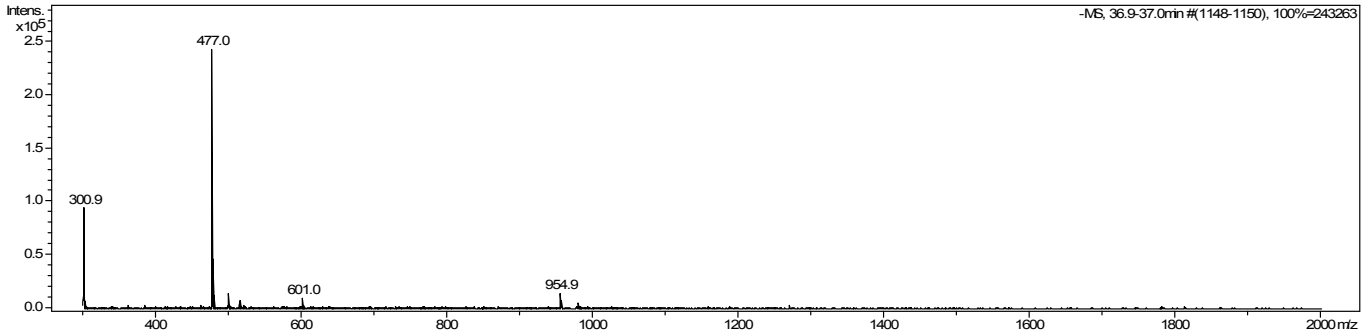

Figure S13

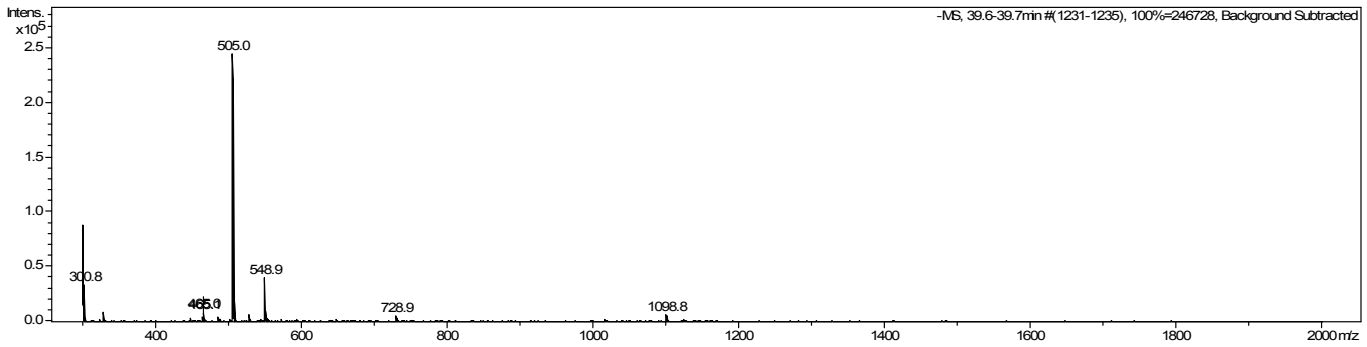
Intens.
x10^5
2.5
2.0
1.5
1.0
0.5
0.0
-MS, 39.6-39.7min #(1231-1235), 100%=246728, Background Subtracted
505.0
300.8
548.9
728.9
1098.8
400
600
800
1000
1200
1400
1600
1800
2000 m/z

Figure S14