Supplementary Table S3. Mean colour values of meat pieces from shoulder area(standard deviation in parenthesis).

Lot	Storage (Days)	Co	Ch	Ch + Or	Ch + Va	Ch + Or + Va	Va	Al	Al + Or	Al + Va	Al + Or + Va	Al + Ol + Va	Sig.
L*	0	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aab	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aa	38.32 (3.52) Aa	NS
	1	46.47 (0.19) BCc	50.42 (0.14) CDd	52.2 (4.85) DEb	47.77 (0.38) BCDb	56.1 (5.21) Ec	43.93 (0.42) ABb	40.87 (0.45) Abc	50.98 (0.63) CDc	43.47 (1.18) ABb	49.64 (0.03) CDc	46.76 (0.23) BCbc	***
	3	40.14 (0.04) Aab	49.19 (2.49) CDcd	55.40 (0.25) Eb	46.75 (0.85) BCb	49.93 (5.74) CDbc	42.78 (0.24) ABb	41.66 (0.31) Abc	41.31 (0.66) Aa	52.77 (0.63) DEc	44.01 (0.35) ABb	49.03 (0.89) CDc	***
	7	46.68 (0.12) EFc	44.72 (0.48) CDEbc	38.58 (2.37) Aa	50.77 (0.76) Gb	48 (0.29) Fbc	43.18 (0.98) Cb	43.92 (0.01) CDc	45.30 (0.40) CDEb	41.10 (1.32) Bab	45.48 (0.12) DEb	39.61 (0.19) ABa	***
	14	43.6 (0.07) Cbc	53.69 (1.42) Fd	38.55 (0.72) Aa	47.01 (1.20) Db	52.22 (0.38) Ebc	43.23 (0.18) Cb	42.15 (0.19) Cc	46.86 (0.40) Db	40.29 (0.26) Bab	42.86 (0.42) Cb	39.58 (0.18) ABa	***
	21	40.99 (0.16) BCab	44.25 (0.17) EFb	53.64 (0.01) Hb	42.15 (1.49) CDa	44.18 (0.53) EFab	40.23 (0.84) Bab	37.13 (0.40) Aa	37.57 (0.57) Aa	49.14 (1.14) Gc	45.19 (0.55) Fb	43.39 (0.12) DEb	***
Sig.		***	***	***	***	***	*	***	***	***	*	***	
a*	0	21.54 (1.18) Ac	21.54 (1.18) Aa	21.54 (1.18) Ad	21.54 (1.18) Aa	21.54 (1.18) Ad	21.54 (1.18) Abc	21.54 (1.18) Ae	21.54 (1.18) Ae	21.54 (1.18) Ac	21.54 (1.18) Abc	21.54 (1.18) Ab	NS
	1	21.10 (0.98) BCc	11.57 (0.19) Ab	32.30 (2.38) Ee	22.79 (0.01) CDa	24.64 (1.33) De	20.78 (0.58) BCbc	20.79 (0.60) BCde	13.03 (0.21) Aa	23.35 (0.62) Dd	18.99 (0.37) Bab	20.62 (0.40) BCb	***
	3	16.60 (0.11) Ba	14.51 (1.27) Ac	13.88 (0.74) Ab	17.74 (0.55) BCb	12.94 (1.30) Ab	19.82 (0.10) CDb	19.53 (0.08) CDcd	20.20 (0.24) Dd	18.58 (0.31) BCDa	18.58 (1.83) BCDa	24.98 (1.18) Ec	***
	7	17.92 (0.43) Ca	14.8 (0.20) Ac	16.65 (0.04) BCbc	16.86 (1.88) BCb	16.85 (0.1) BCc	22.06 (1.03) Dc	16.78 (0.36) BCb	15.53 (0.03) ABbc	20.46 (0.84) Dbc	28.38 (0.12) Fd	25.59 (0.26) Ecd	***
	14	18.23 (0.91) Eab	12.10 (0.53) Bb	17.21 (0.34) Dc	17.41 (0.72) DEb	9.57 (0.05) Aa	17.08 (0.01) Da	15.18 (0.08) Ca	16.69 (0.23) Dc	23.59 (0.08) Fd	22.94 (0.36) Fc	26.88 (0.36) Gd	***
	21	20.04 (0.14) EFbc	18.49 (0.09) DEd	9.57 (0.31) Aa	16.92 (1.08) Cb	16.01 (0.01) BCc	20.31 (0.54) Fbc	18.92 (0.17) DEFc	15.21 (0.33) Bb	19.60 (0.15) EFab	16.51 (1.74) BCa	17.49 (0.04) CDa	***
Sig.		***	***	***	***	***	***	***	***	***	***	***	
b*	0	7.61 (0.20) Ac	7.61 (0.20) Abc	7.61 (0.20) Ab	7.61 (0.20) Aa	7.61 (0.20) Ac	7.61 (0.20) Ac	7.61 (0.20) Ad	7.61 (0.20) Ad	7.61 (0.20) Aa	7.61 (0.20) Aa	7.61 (0.20) Aa	NS

	Time												Sig.
	1	9.48 (0.12) DEd	8.23 (0.09) BCDc	14.73 (1.56) Gc	7.84 (0.16) BCa	12.07 (0.77) Fd	7.14 (0.31) Bbc	7.72 (0.65) BCd	3.90 (0.14) Ab	9.18 (0.59) CDEb	10.28 (0.01) Eb	9.43 (0.41) DEb	***
	3	3.16 (0.18) Aa	9.45 (0.28) Ed	5.06 (1.17) Ba	7.62 (1.04) Da	4.79 (0.04) Ba	5.88 (0.16) BCb	6.53 (0.19) CDc	7.28 (0.43) Dd	10.64 (0.86) Ec	10.23 (0.09) Eb	15.35 (0.53) Fe	***
	7	9.86 (0.01) Fd	6.17 (0.02) Ba	6.37 (0.02) BCab	7.60 (0.98) DEa	7.42 (0.13) CDEbc	6.43 (0.87) BCbc	6.74 (0.19) BCDc	4.77 (0.08) Ac	8.17 (0.58) Eab	13.63 (0.24) Hc	12.47 (0.09) Gd	***
	14	7.78 (0.98) Cc	7.28 (0.45) Cb	6.16 (0.20) Bab	7.81 (0.28) Ca	5.47 (0.02) Ba	3.80 (0.92) Aa	5.73 (0.02) Bb	4.42 (0.21) Abc	9.23 (0.01) Db	7.31 (0.24) Ca	10.8 (0.29) Ebc	***
	21	6.45 (0.16) Cb	5.96 (0.19) Ca	4.63 (0.89) Ba	4.42 (0.11) Bb	6.74 (0.11) CDb	6.55 (0.72) Cbc	4.72 (0.19) Ba	1.65 (0.24) Aa	8.19 (0.70) Eab	7.58 (0.28) DEa	8.34 (0.16) Ea	***
Sig.		***	***	***	***	***	***	***	***	***	***	***	
	0	22.85 (1.05) Acd	22.85 (1.05) Aa	22.85 (1.05) Ad	22.85 (1.05) Aa	22.85 (1.05) Ad	22.85 (1.05) Ac	22.85 (1.05) Ad	22.85 (1.05) Ae	22.85 (1.05) Aa	22.85 (1.05) Abc	22.85 (1.05) Aa	NS
	1	23.13 (0.95) BCd	14.2 (0.09) Ab	35.5 (2.81) Ee	24.1 (0.05) BCa	27.44 (1.54) De	21.97 (0.65) Bbc	22.18 (0.79) Bd	13.6 (0.16) Aa	25.09 (0.79) CDb	21.6 (0.33) Bbc	22.67 (0.53) BCa	***
Chroma	3	16.89 (0.14) Ba	17.32 (1.22) BCc	14.78 (1.10) Ab	19.31 (0.91) CDb	13.8 (1.24) Ab	20.67 (0.14) Db	20.59 (0.01) Dc	21.48 (0.08) Dd	21.41 (0.69) Da	21.22 (1.64) Db	29.32 (1.28) Eb	***
	7	20.45 (0.38) Db	16.04 (0.18) Abc	17.82 (0.04) ABCbc	18.49 (2.12) Cb	18.41 (0.04) Cc	22.98 (1.23) Ec	18.09 (0.26) Bb	16.25 (0.05) ABbc	22.03 (0.99) DEa	31.48 (0.01) Gd	28.47 (0.27) Fb	***
	14	19.82 (1.22) Fb	14.13 (0.22) Bb	18.28 (0.39) Dc	19.08 (0.78) EFb	11.02 (0.03) Aa	17.51 (0.21) Da	16.22 (0.08) Ca	17.27 (0.28) CDc	25.33 (0.08) Hb	24.08 (0.41) Gc	28.97 (0.44) Ib	***
	21	21.05 (0.09) Ebc	19.42 (0.15) Dd	10.64 (0.67) Aa	17.48 (1.08) Cb	17.37 (0.05) Cc	21.34 (0.74) Ebc	19.50 (0.21) Dc	15.30 (0.30) Bb	21.24 (0.11) Ea	18.18 (1.46) CDa	19.37 (0.11) Dc	***
Sig.		***	***	***	***	***	***	***	***	***	***	***	
	0	0.34 (0.02) Ab	0.34 (0.02) Aab	0.34 (0.02) Aa	0.34 (0.02) Ab	0.34 (0.02) Aa	0.34 (0.02) Ab	0.34 (0.02) Ab	0.34 (0.02) Acd	0.34 (0.02) Aa	0.34 (0.02) Aa	0.34 (0.02) Aa	NS
	1	0.42 (0.01) Dc	0.61 (0.01) Gd	0.42 (0.01) Dab	0.33 (0.01) Bb	0.45 (0.01) Ec	0.33 (0.01) Bb	0.35 (0.01) BCbc	0.29 (0.01) Ab	0.37 (0.01) Cab	0.49 (0.01) Fb	0.42 (0.01) Dc	***
Hue angle	3	0.18 (0.01) Aa	0.57 (0.01) Ecd	0.34 (0.05) BCa	0.40 (0.03) Cc	0.35 (0.02) BCa	0.28 (0.01) Bab	0.32 (0.01) Bb	0.34 (0.02) BCd	0.51 (0.02) DEc	0.50 (0.03) Db	0.55 (0.01) DEd	***
	7	0.50 (0.01) Gd	0.39 (0.01) CDb	0.36 (0.01) Bab	0.42 (0.01) Ec	0.41 (0.01) DEbc	0.28 (0.02) Aab	0.38 (0.01) BCc	0.29 (0.01) Abc	0.37 (0.01) BCab	0.44 (0.01) Fb	0.45 (0.01) Fc	***
	14	0.40 (0.02) EFc	0.54 (0.04) Gc	0.34 (0.01) CDa	0.42 (0.01) Fc	0.51 (0.01) Gd	0.21 (0.05) Aa	0.36 (0.01) CDEbc	0.25 (0.01) ABb	0.37 (0.01) DEFab	0.30 (0.01) BCa	0.38 (0.01) DEFb	***
	21	0.31 (0.01) Cb	0.31 (0.01) Ca	0.44 (0.06) Db	0.25 (0.01) BCa	0.39 (0.01) Db	0.30 (0.01) Db	0.24 (0.02) Cb	0.10 (0.01) Ba	0.39 (0.01) Db	0.43 (0.05) Db	0.44 (0.01) Dc	***

Sig.	***	***	***	***	***	***	**	***	***	***	***

Treatment: Co: Control; Ch: Chitosan; Ch + Or: Chitosan + Oregano; Ch + Va: Chitosan + Vacuum; Ch + Or + Va: Chitosan + Oregano + Vacuum; Va: Vacuum; Al: Alginate; Al + Or: Alginate + Oregano; Al + Va: Alginate + Vacuum; Al + Or + Va: Alginate + Oregano + Vacuum; Al + Ol + Va: Alginate + Olive + Vacuum.

[A-H] Mean values in the same row (corresponding to the same days of storage) not followed by a common uppercase letter differ significantly (p-value < 0.05).

[a-e] Mean values in the same column (corresponding to the same treatment) not followed by a common lowercase letter differ significantly (p-value < 0.05).

* p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001; [NS] no significance (p-value > 0.05)