



Fatty acid content & oxidation level in turkey breast with different pH

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Introduction

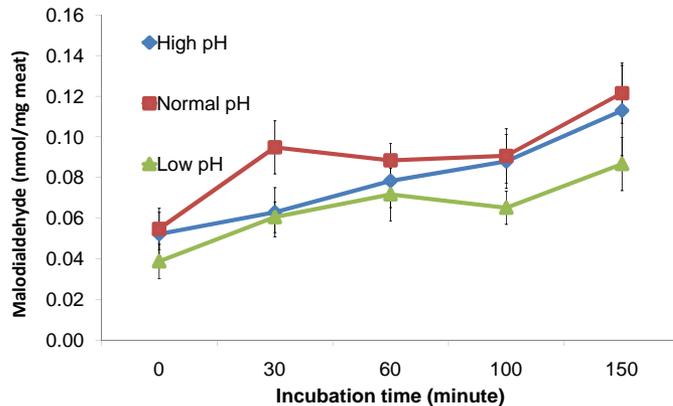
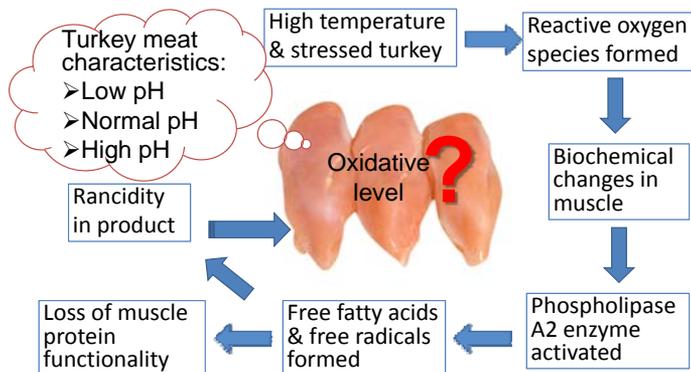


Figure 1. Malondialdehyde (MDA) levels in turkey breast meat with different pH. Both High pH and Normal pH meat showed a higher MDA formation as compared to Low pH.

Objectives

1. To quantify the fatty acids level in turkey breast meat with different *post mortem* pH values using gas chromatography (GC).
2. To evaluate the oxidative level contributed by malondialdehyde (secondary derivative from lipid oxidation) in turkey breast meat.

Materials & Results

Turkey breast	pH	Lightness, L^*
Low pH (Pale-like)	pH < 5.7	$L^* > 51$
Normal	5.9 < pH < 6.0	46 < $L^* < 51$
High pH (Dark-like)	pH > 6.3	$L^* < 46$

Table 1. Classification of turkey breast meat in this study.

	High pH	Normal pH	Low pH	P value
SFA	651.1	704.4	558.8	0.381 (NS)
MUFA	847.9	801.0	784.2	0.903 (NS)
PUFA	656.6	623.4	508.4	0.243 (NS)
UI	116.0 a	112.5 a	103.9 b	< 0.05 (S)
PI	69.9 a	69.6 a	58.5 b	< 0.01 (S)

Table 2. Fatty acid content in turkey breast meat.

- ❖ SFA= Saturated fatty acids (FA); MUFA = Monounsaturated FA, PUFA= Polyunsaturated FA; UI = Unsaturation index; PI = Peroxidation index. SFA, MUFA & PUFA were expressed as mg fatty acids/100g turkey meat.
- ❖ Different letters within each column denotes significance at $P < 0.05$. S = Significant; NS = Not significant.

Conclusion

1. Low pH turkey meat showed low levels of unsaturated fatty acids; whereas they were found more in high pH meat - - prone to oxidation.
2. Different meat pH could be linked to genetic factors and turkey's stress resistance capability.

Future approach

Gene selection of turkey breed, turkey feed and nutrition in turkey meat could be further refined in order to cut down the occurrence of meat with wide range of pH.

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