

Title Effects of freezing temperature and duration of frozen storage on lipid and protein oxidation in chicken meat

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Abstract

This study examined the effects of freezing temperature and duration of frozen storage on lipid and protein oxidation in chicken leg and breast meat. The meat was frozen at three different temperatures (-7, -12 and -18 °C) and then stored at -18 °C for up to 6 months. A significant effect of frozen storage duration on lipid oxidation was detected in leg and breast meat, whereas freezing temperature had no significant effect. In leg meat, freezing at -7 °C had a significant impact on protein oxidation, measured as the increase in carbonyl groups and the decrease in total sulphydryl groups, after 3 months of frozen storage. Lipid and protein oxidation appeared to occur simultaneously in chicken meat during frozen storage and was more intense in leg meat than in breast meat.