

REFRIGERATED CHICKEN MEAT FRESHNESS. CORRELATION BETWEEN EASILY HYDROLISABLE NITROGEN, pH VALUE AND BIOGENIC AMINES CONTENTS

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Abstract

In this study we evaluated the variation of highly hydrolysable nitrogen, pH and the biogenic amines from the refrigerated chicken meat and we calculated the freshness indices based on biogenic amines content. We correlated the obtained results (pH and ammonia content) with Romanian legislation in order to determine the storage time limit for the refrigerated chicken that can be acceptable for consumption. Finally we determined the freshness indices proposed by different authors for the refrigerated chicken meat based on the biogenic amines content. The meat pH increased constantly from the first (5.92) up to the 20th day of storage in refrigerated state (7.33). Also, the easily hydrolysable nitrogen increased from 20.5 to 39.68mg NH₃/100g. From the biogenic amines content point of view, the first day spermine is preponderant (50% of the total amines). The 20th day, cadaverine is the preponderant amine followed by putrescin (17%) and β-phenylethylamine (13%). Based on the biogenic amines content, three freshness indices (FI) were calculated as per the relationships proposed by: Mietz and Karmas, Veciana-Nogues *et.al.*, and by Silva and Gloria. Correlating the obtained results for easily hydrolysable nitrogen, pH and Romanian legislation norms, we determined that the maximum freshness limit for chicken meat is at the 3rd day of storage, hereby FI are as follows: FI (Mietz and Karmas) = 0.27, FI (Veciana-Nogues) = 12.2, FI (Silva and Gloria) = 0.24.

Keywords: biogenic amines, spoilage, quality index, freshness index, chicken meat, refrigerated meat, pH, easily hydrolysable nitrogen.