

# 起始pH對還原糖與半胱胺酸生成2-甲基-3-呋喃醇之影響 = Effect of initial pHs on the formation of 2-methyl-3-furanthiol fro

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## 摘要

梅納反應經常應用於肉類香氣生成的研究，其影響香氣重要之變因為還原糖種類與 pH 值，在熱反應過程中所形成硫醇類如 2-甲基-3-呋喃醇 (2-methyl-3-furanthiol) 為重要的肉香味香氣化合物之一。由於複雜的反應過程，可藉由不同層級動力學的線性變化來解釋梅納反應中反應物與生成物的損失與增加，並得知其反應速率。本研究首先利用動力學方式描述葡萄糖、木糖、核糖與半胱胺酸在 95 °C、pH 7 下反應時間 120 分鐘的梅納反應後，監測反應物消耗量與生成物濃度，發現 2-methyl-3-furanthiol 生成含量最高之糖類為核糖。接著利用動力學方式描述核糖與半胱胺酸在 95 °C、反應時間 120 分鐘下控制 pH 5、7、9 的梅納反應條件下進行監測。結果顯示，還原糖損失量可推測其反應快慢為核糖 > 木糖 > 葡萄糖，Amadori 含量為核糖 > 木糖 > 葡萄糖，從線性圖得知核糖斜率最高，2-methyl-3-furanthiol 之生成亦在核糖與半胱胺酸系統中被檢出。第二部分實驗結果得知，隨著 pH 值提升，還原糖損失量與褐變程度也隨著增加，Amadori 含量高低依次為 pH 7 > pH 9 > pH 5，此結果異於文獻，推測 Amadori 產物為梅納反應的中間產物，進而再轉換為類黑素，此與褐色程度實驗結果相呼應，2-methyl-3-furanthiol 生成量以 pH 7 為最高，其因乃在酸性環境下，則需較高溫度來提高核糖使用率，而呋喃類化合物較易在 pH 7 的環境下生成。

關鍵詞：還原糖、半胱胺酸、梅納反應、2-methyl-3-furanthiol、動力學

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