

**DETERMINATION OF 2,3- BUTANEDIONE IN DAIRY PRODUCTS
BY GC-FID - and OCCURRENCE OF DIACETYL IN DAIRY
PRODUCTS FROM ANKARA, TURKEY MARKETS**

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In this study, a method for the determination of 2,3- butanedione (diacetyl) in cheese, milk, yoghurt and butter by GC technique coupled with FID was used. The characteristic taste of butter comes from 2,3-butanedione added to margarines, yoghurts, cheese, popcorns as an artificial ingredient. And it is also a natural product of fermentation in yoghurt, wine. An acceptable limit of 2,3- butanedione hasn't been established for foods. Precise and fast method has developed and validated for 2,3 butanedione determination. Acetone was used for the extraction. The accuracy of the proposed method has been checked by analyzing spiked samples and 92-95% recoveries were obtained, detection limit (3σ) and quantification limit (10σ) of the method were calculated as 0.316 $\mu\text{g/g}$ and 1.056 $\mu\text{g/g}$, respectively. Linear working range was obtained between 1.2 – 40.0 $\mu\text{g/g}$ with the equation $A=1.037[2,3\text{- butanedione}] - 0.062$; $R^2=0.998$. Intra-day and inter-day precision studies were also performed with RSD below 15%, respectively. The aim of this study was to investigate the incidence and levels of diacetyl in dairy products in Ankara, Turkey. The levels of 2,3-butanedione were determined by GC-FID with a relative error less than 5%. Samples were collected from dairy markets located in different regions of Ankara. A total of 75 commodities were analyzed for diacetyl during the first 6 months of 2014.

Keywords: Diacetyl, 2,3-butanedione, GC-FID, dairy products

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