Preparation of Ras Cheese Flavour Concentrate using Lipolyzed Cream and Skim Milk Curd

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International Journal Dairy Science, 12 (4): 275--281 (2017)	مكان النشر

Background and Objective: Concentrated cheese flavors developed enzymatically in the industry by dairy researchers from cheeses at different ages, in order to provide cost-effective alternative to the long classical process in addition to enhance the sensory and nutritional properties of the final product. The main purpose of this study was to produce Ras Cheese Flavor Concentrate (RCFC) by using Ras cheese curd that was prepared from skim milk, lipolyzed cream (35% fat) with microbial lipase from *Rhizomucor miehei*. **Methodology:** Ras cheese flavor concentrate was prepared using lipolyzed cream and skim milk curd. Microbial lipase (activity of 40.000 U g^{-1}) from *Rhizomucor miehei* was used at 12000 U kg^{-1} fat for the preparation of lipolyzed cream (35% fat). Changes in pH values, T.A (%), moisture (%) and fat/DM (%) of RCFC during the storage period (days) was calculated using one way ANOVA test. Statistical analysis was carried out using SPSS software version 16. Moreover, GC-MS analysis of volatile compounds was performed in four selected samples (treatments with 20 and 30% lipolyzed cream at 3 and 7 days of storage) based on the sensory evaluation at the end of storage period. **Results:** Results showed that there were significant differences ($\alpha = 0.05$) based on the comparison the gross chemical composition which responsible for producing flavors between the control and treated samples during the storage period. In addition, Prepared RCFC samples were analyzed chemically for changes in moisture (%), T.A (%), pH values, fat/DM (%), water soluble nitrogen WSN/TN (%), Total Free Amino Acids (TFAA) and Total Volatile Fatty Acids (TVFA). Seventeen volatile compounds that identified included 7 esters, 5 alcohols, 4 ketones and 1 fatty acid compounds responsible for the final aroma and taste of RCFC samples. The addition of 30% lipolyzed cream into skim milk curd which stored for 7 days at 37°C enhanced both chemical composition, organoleptic evaluation and the flavor profile of prepared RCFC samples. **Conclusion:** The level of added lipolyzed cream (35% fat) to the cheese curd apparently increased the acidity, fat/DM (%) levels and proteolysis rate. Additionally, volatile fatty acid**s** and generated key aroma compounds responsible for the final aroma and taste of RCFC samples were developed.