ABSTRACT

Mounira Mohamed Ahmed: Biochemical Study on Folic Acid and its Derivatives in Milk and Dairy Products. Unpublished M.Sc. Thesis, Department of Agricultural Biochemistry, Faculty of Agriculture, Ain Shams University, 2011.

The present work was carried out to study the folate derivatives in cow milk, buffalo milk and some dairy products. Also, the effect of different heat treatments on folates has been studied. 5-Methyl tetrahydrofolate (5-MeTHF) and tetrahydrofolate (THF) were determined in raw and heat treated milk by using HPLC.

The results showed that after treatment of deconjugase cow milk contained 7.48µg/100 5-Me-THF and 7.64 µg/100 THF while buffalo milk contained 3.13 µg/100 5-Me-THF and 2.20 µg/100 THF. About 69 % of 5-Me--THF in buffalo milk is found in monoglutamyl form and about 31.3 % in polyglutamyl forms while THF is found only in monoglutamyl form.

Heat treatment of buffalo milk at 85º C for moment on closed a higher THF content compare to 5-Me-THF. However, the heat treatment at 65º C for 30 minute completely destruct 5-Me-THF, and reduce the concentration of THF by 35 %.

These results were compared with the standard folate forms subjected to the same heat treatments. The results indicated that folates in milk were more resistant to heat treatments than the standard folates.

The distribution of folate in heated buffalo milk were 67.4 % 5-MeTHF and 44.5 % THF in skim milk, while 30.4 % 5-MeTHF and 4.3 % THF was found in butter milk. Folates content in milk and some dairy products were estimated by microbiological assay.

The results obtained in raw milk, skim milk and butter milk were coincide with the results obtained by HPLC method. Also fermented milk products (yogurt and rayeb) contain a high level of folates depending on starter culture used.

Key Wards: Cow, Buffalo, Milk, Skim milk, Butter milk, Folate, Heat treatment, 5-Methyl tetrahydrofolate, Tetrahydrofolate, Fermented milk, (Yogurt and Rayeb).

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