

Seasonal Variation of Iranian Milk Fatty Acid Composition

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Dietary milk fats; on account of higher content of saturated fatty acids, trans fatty acids and conjugated linoleic acid; have long been associated with human health, adversely or positively. The studies on the fatty acid composition of dairy products are limited in Iran. In this study, seasonal variation of milk fatty acids was considered in the center of Iran. We chose the milk that has produced in the dairy farm of Tehran University to elucidate the diet changes and stage of lactation. Sampling accomplished every month during spring, summer and autumn. 12 samples were analyzed with gas chromatography. Fat extraction and preparation of fatty acid methyl esters was done according to ISO 14156- IDF 172 and ISO 15884- IDF 182. Palmitic acid showed the highest level of all fatty acid; $31.76\% \pm 0.385$, $32.36\% \pm 0.261$ and $32.81\% \pm 0.391$ respectively in spring, summer and autumn. The content of saturated fatty acid was $65.62\% \pm 0.921$ in spring, $65.31\% \pm 1.067$ in summer and $68.16\% \pm 0.551$ in autumn. Milk contained $26.64\% \pm 0.480$, $25.21\% \pm 0.810$ and $23.59\% \pm 0.339$ mono unsaturated fatty acid respectively in spring, summer and autumn. The content of poly unsaturated fatty acid was $4.5\% \pm 0.097$ in spring, $3.63\% \pm 0.096$ in summer and $2.87\% \pm 0.225$ in autumn. The results showed that milk saturated fatty acid level are higher than the similar studies in other part of the world. The level of mono unsaturated fatty acid is lower; but the content of poly unsaturated fatty acid level is similar, comparatively.