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Effects of the central nervous system on food intake and body weight

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The central neural networks organize the interactions among stressors, body, food intake and brain. Furthermore, stress and emotional brain network affect eating behaviour that can lead to obesity. Especially, some food components have various effects such as depression, anxiety, sleep, appetite on central nervous system. The brain and the central nervous system produced a great number of peptides and steroids through their actions on the hypothalamus. Hypothalamus plays a vital role that control food intake and body weight. Leptin and some other hormones have functions as anti-obesity factor by regulating the balance between energy uptake and consumption via the receptors in the hypothalamus. Leptin deficiency can result in health problems such as obesity, diabetes and infertility. It is known that the central nervous system manages the condition of appetite and satiety; hypothalamus is the central junction point for brain in the communication of brain with the body; and leptin hormone plays an effective role in the intake of food. In this review, the central nervous system, functions of hypothalamus and leptin, its effects on food intake will be discussed in the light of literature.

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Churning efficiency, physicochemical properties and microbial safety of butter made from camel milk alone and blending it with goat

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The study was conducted to evaluate the churning efficiency of butter making from camel milk by blending it with goat milk; the physicochemical properties and microbiological safety of butter made from camel milk alone and at different blending levels were assessed. The experiment was laid out in completely randomized design with five treatments, i.e., T1 (100% camel milk), T2 (75% camel and 25% goat milk), T3 (50% camel and 50% goat milk), T4 (25% camel and 75% goat milk) and T5 (100% goat milk). The milk samples were analyzed for their physicochemical properties and microbiological quality. The fat, total solids and titratable acidity of T1 was significantly ($P<0.001$) lower than T5 but T1 had significantly ($P<0.001$) higher pH value than T3, T4 and T5. There was no significant ($P>0.001$) difference in specific gravity between T1, T2, T3, T4 and T5. The total bacteria count (TBC) of T1 was significantly ($P<0.001$) higher than TBC of T2, T3, T4 and T5. The coliform count (CC) of T5 was significantly ($P<0.001$) higher than CC of the other milk samples and no significant ($P>0.001$) difference was observed in CC between T1, T2, T3 and T4. The churning efficiency, physicochemical properties and microbiological quality of the butter samples were analyzed following standard procedures. The fermentation time (11.3 days), churning time (121.7 min) and churning temperature (280C) of T1 were significantly ($P<0.001$) higher than the other milk samples. However, T1 had significantly ($P<0.001$) lower churning pH (4.13) and butter yield (49.3 g/liter) than the other samples. T3 and T4 had significantly ($P<0.001$) higher butter yield than the other milk samples. The fermentation time, churning time and churning temperature of T5 were significantly ($P<0.001$) shorter/lower than the rest and T5 required significantly ($P<0.001$) higher churning pH than the other milk samples. The moisture content (39.2%), melting range ($42. \pm 10^{\circ}\text{C}$) and acid degree value (8.72% oleic acid) for T1 was significantly ($P<0.001$) higher than the other butter samples and T1 had significantly ($P<0.001$) lower fat content (56.8%) than the other samples. The coliform count (CC), *Enterobacteriaceae* count (EBC), lipolytic bacteria count (LBC) and yeast and moulds count (YMC) of T1 was significantly ($P<0.001$) higher than the other butter samples. The CC, EC and total bacteria count (TBC) of T5 was significantly ($P<0.001$) higher than T2, T3 and T4 and it had significantly ($P<0.001$) lower TBC than the others. The results showed that blending camel milk with goat milk improved fermentation and churning time and yield of butter from camel milk. Although butter can be made from pure camel milk, it took longer churning time and fermentation time. Thus, research is needed in order to reduce the churning time and improve the yield of butter made from pure camel milk by manipulating the operating parameters viz., pH of the milk, churning temperature, method of churning and volume of milk in the churn.

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