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Effect of Potassium Bromate on Thyroid of Swiss Albino Mice

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Abstract : *The role of potassium bromate, a food additive, on body weight, histology of thyroid gland and hormonal change were investigated. No significant change was found in the body weight of the experimental mice. However, damage in the thyroid tissues were seen, which were more prominent in the mice treated with a higher dose of potassium bromate and also the TSH level was significantly increased. Therefore, it is suggested that potassium bromate should not be used as a food additive.*

Key words: *Potassium bromate, TSH.*

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Introduction :

Potassium bromate is a white crystalline powder. It is a colourless, odourless and tasteless compound having no medicinal value. It is used as a food additive in flour, fish paste, beer and cheese (Chipman et al., 1998). It assists in the dough raising process and produces texture in the finished products that is appealing to the public (Sivasakar, 2002). Prolonged exposure may result in skin burns and ulcerations. Over exposure by inhalation may cause respiratory irritation (Ueno et al., 2000). It was discovered that potassium bromate administered to rats resulted in combined incidence of adenomas and carcinomas of the kidney (Kurokawa et al., 1986). Potassium induces renal oxidative stress which is known to cause kidney cancer (De Angelo et al., 1998, Parson and Chipman, 2000). The thyroid gland holds a key position among the endocrine glands, as it works for normal body metabolism, growth and development including regulation of Basal Metabolic Rate (Capen et al, 1991; Lu and Anderson, 1994). Thus, an investigation into the effects of potassium bromate on the thyroid gland becomes vital.