

Effect of black tea brew of *Camellia sinensis* on oestrous cycle of rats

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ABSTRACT

This study examined the effects of black tea brew (BTB) of *Camellia sinensis* (L.) O. Kuntze (Family: Theaceae) on oestrous cycle using Sri Lankan high grown Dust grade No: 1 black tea and rats. Different doses of BTB (84 mg/ml, equivalent to 1.5 cups, 168 mg/ml, equivalent to 3 cups and 501 mg/ml, equivalent to 9 cups) or 2 ml of water (control) were orally administered for 31 consecutive days and the oestrous cycle was monitored daily by vaginal smearing. The results showed that none of the doses of BTB significantly ($P > 0.05$) altered the percentage of occurrence of different stages of the oestrous cycle and its duration. It is concluded that daily chronic administration of even high dose of BTB (equivalent to 9 cups) dose not disrupt the oestrous cycle of rats.

Key words: *Camellia sinensis*; black tea; oestrous cycle; menstrual cycle

INTRODUCTION

Tea which is manufactured from the topmost immature leaves and the bud of *Camellia sinensis* (L.) O. Kuntze (Family Theaceae) plant is currently the second most consumed beverage of the world (Modder and Amarakoon, 2002). Based on the method of manufacturing process there are three main types of teas: black (fully aerated or fermented) green (unaerated or unfermented) and oolong (partially aerated or semi fermented). Of these, black tea accounts for about 78% of the global tea consumption (Anonymous, 2004).

A typically black tea brew (BTB) contains 0.35% tea solids in water (Modder and Amarakoon, 2002). Upto 40 % of the solids extracted to water are flavonoids (catechins, theaflavins, thearubigins, flavonols) and infact tea is one of the richest sources of natural flavonoids (Modder and Amarakoon, 2002). BTB also contains appreciable amounts of alkaloid, caffeine and amino acid, theanine (Balentine *et al.*, 1997; Modder and Amarakoon, 2002). Generally, coffee and tea are the main sources of caffeine for adults (Fenster *et al.*, 1999). Most of the known bioactivities of black tea are linked with these three phytochemical constituents (Modder and Amarakoon, 2002).

Consumption of caffeine is known to induce disturbances in the menstrual cycle in women (Fenster *et al.*, 1999): shortens the duration of menstrual cycle and menstruation. Further,