

A STUDY ON THE EFFECT OF KHAT (*Catha edulis*) ON PLASMA TESTOSTERONE.

PROLACTIN AND CORTISOL LEVELS IN MALE OLIVE BABOONS (*Papio anubis*).

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ABSTRACT

Khat (*Catha edulis*), locally known as miraa, is a shrub which varies in height from 1 to 25 meters. The leaves and young shoots of khat are chewed by many people to induce a state of euphoria and alertness. Studies on khat have included its chemistry, socio-economic impact, biological functions, and behavioural effects. There have been a few studies on the effect of khat on reproduction in humans, rats and mice. Studies have shown that chewing khat decreases body weight, and causes anorexia, sympathomimetic effects, plasma testosterone and abnormal sperm morphology.

Detailed studies on the effect of khat on reproductive functions are lacking and there have been no reports on non-human primates, which are considered to be appropriate models for humans. In this desertation, the effect of oral administration of crude khat extract on testosterone, cortisol, and prolactin in mature male olive baboons was investigated. Each baboon received a single dose of khat extract corresponding to 0.7mg/kg of khat leaf and young shoot once a week for a period of two months. After administration of khat, blood samples were collected under anaesthesia at intervals of 30 minutes for four hours. Blood samples were also collected before and after the period of oral administration of crude khat extract. Plasma prolactin levels were analysed by enzymeimmunoassay (EIA), while testosterone and cortisol levels were analysed by radioimmunoassay (RIA).

In the current study, the following observations were made when khat was given: 1) there was a rapid recovery from anaesthesia, 2) frequent urination, 3) dilation of the pupil and 4) penile erections which lasted around 10 minutes. The hormonal analysis showed that with khat testosterone levels increased, whereas prolactin and cortisol levels decreased. These hormonal changes persisted for one month after the khat administration to the baboons was stopped.