

EFFECT OF SHORT TERM ADMINISTRATION OF TULSI (*OCIMUM SANCTUM* LINN.) ON REPRODUCTIVE BEHAVIOUR OF ADULT MALE RATS

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Abstract : Effect of feeding Tulsi leaves alongwith the normal diet, on the reproductory behaviour of adult male Wistar rats, was studied. Experimental animals were given Tulsi extract in graded doses of 100 mg/kg, 150 mg/kg, 200 mg/kg, and 400 mg/kg along with the normal diet while control group only had similar normal diet. Each dose was given for 15 days and reproductory behaviour monitored in terms of score, on every alternative day. There was significant decrease in sexual behavioural score, when Tulsi leaves extract dose was increased to 200 mg/kg and 400 mg/kg.

Key words : male sexual behaviour Tulsi extract

INTRODUCTION

Leaves of *ocimum sanctum* (Tulsi) have been observed to have antifertility and abortifacient activity in female rats (1-3). Vora et al had reported that after fertilization, majority of the rats had no implantation when extract of Tulsi leaves 100 mg/kg body weight was administered to them for 14 days. Similar results were observed when the dose was doubled and administered for seven days. Its abortifacient action was evidenced as only 30% of such animals delivered at full term. Administration of Tulsi leaves extract for three months in doses of 200 mg/kg and 400 mg/kg in male rats brought about reduction in sperm count, and their motility, and also of weights of various male reproductory organs thus bringing about irreversible changes in these organs (4, 5).

In none of these studies the reproductory behaviour as measured in terms of interaction between male and female rats, was monitored after administration of extracts of Tulsi leaves. The present study aimed at registering the alterations in sexual interaction, after administration of graded doses of the extract in adult male rats.

METHODS

Eight adult male rats (Wistar Strain), weighing between 200-250 gm, and having proven reproductory activity, were used in this study. They were kept in separate cages with light-dark cycle of 10 and 14 hours and food and water were administered *ad libitum*. They were then presented with primed ovariectomised females, in which 2 micro gm. oestrogen was administered for three days followed by 0.5 mg progesterone on the fourth day. The male was first introduced into a separated arena in which reproductory behaviour could be monitored. The primed female was then introduced into the cage and reproductory behaviour was visually monitored and scored separately by two independent observers for 10 minutes, as indicated below :

| Response | Score |
|--------------|-------|
| Grooming | 1 |
| Pursuit | 2 |
| Mount | 3 |
| Intromission | 4 |
| Ejaculation | 5 |

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The latency responses for grooming, pursuit, mount, intromission and ejaculation were also registered. The scores were repeated on alternate days for 7-8 occasions and the last four readings were considered for statistical analysis. Tulsi leaves extract (shade dried) was ground with food and fed to the experimental animals in doses of 100 mg/kg, 150 mg/kg, 200 mg/kg, and 400 mg/kg. Each dose was given for 15 days and the behaviour was studied on alternate days.

RESULTS

Mean values of sexual behavioural score for different administered doses of Tulsi, are shown in the graph (Fig. 1). It shows significant reduction in this score for given doses of 200 mg/kg and 400 mg/kg. Earlier studies had indicated that the same dose in

male rats brought about reduction in sperm count, motility, and the weights of various male reproductive organs (6). The latency responses for Grooming, Pursuit, Mount, Intromission and Ejaculation were prolonged but were not found to be statistically significant.

DISCUSSION

The present study shows significant decrease in sexual behavioural score of male rats when ocimum sanctum extract dose given to them was increased to 200 mg/kg and 400 mg/kg. The rats could easily ingest the extracts, especially when the dose was small. There was some difficulty with a few animals when the dose was increased to 400 mg/kg, but this difficulty was overcome by making the extracts more palatable by mixing it with groundnut powder.

Sexual Behavioral Score in Control and Experimental Animals.

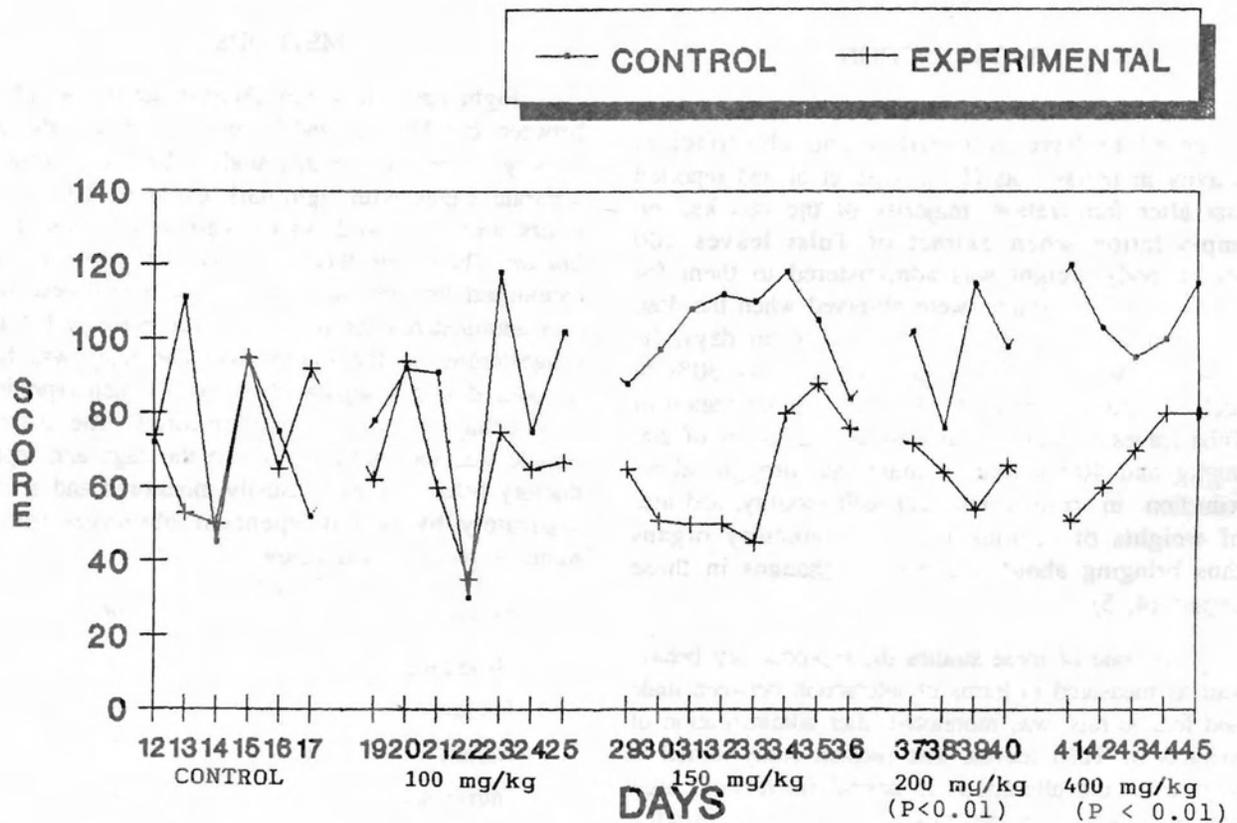


Fig. 1.

There was no decrease in the animals food or water intake, or any alteration in their motor activity.

Even though earlier studies had indicated marked structural changes in testes, epididymis and seminal vesicles, this was not apparent in the present

study. This may perhaps be because the largest dose of 400 mg/kg was given for 15 days only, unlike a similar dose administered for 3 months in the previous study (4). Further work is planned to study the nature of gestation and litter size in a cyclic female when kept in contact with the males receiving Tulsi extracts in a dose of 400 mg/kg for short duration.

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