

ABORTIFACIENT ACTIVITY OF A MEDICINAL PLANT “MORINGA OLEIFERA” IN RATS

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ABSTRACT: Dried powder of leaf extract of common Indian plant *Moringa Oleifera* of Moringaceae family was tested experimentally in albino rats in our laboratory for its antifertility activity. Cent per cent abortifacient activity was found when administered orally in aqueous solution at dose of 175 mg/kg body weight daily to Charles foster strain albino rats from days 5 – 10 post mated.

INTRODUCTION

It is very prevalent in rural area to use medicinal plants as abortifacient drug. The knowledge of their antifertility activity is transferred from generation to generation. During our survey work at one of the rural areas (Gora village, Dist. Raibarelli, U.P.) it was observed that about 80% women folk have been using *Moringa oleifera* (locally known as “Sahijan”) to abort pregnancy in early stages. Use of *Moringa* leaves as an abortifacient drug by women of Gora village had inspired us to screen out its antifertility activity systematically. Following is the detailed report of the work. Its use in dysmenorrhea, crysmanorhea and ammenorhea is indicated in Ayurvedic Materica Medica plants¹.

MATERIALS AND METHODS

Latin name of plant – *Moringa oleifera* Lam.

Family – Moringaceae

Names : Latin name – *Moringa oleifera* Lam. Sanskrit – Sobhanjan (ornamental plant), Shrigree, Jiksna gandha (fast smelling plant), Akshiva, Mochak, Hindi – Sahijan, Bengali – Shajina, Marathi –

Shevga, Shegta, Gujrati – Sargavo, Seklo – Sindho – suhan – jido, Tamil – Marungai, Telgu – Mumga, English – Horsh reddish, Drum stick plant.

Shape and Size:

Medium tree 20 – 25 ft high, stem and bark – soft, leaf compound winged, 1 – 2 ft long leaflets 6 – 9 pairs, ½ - ¾ ” long. Flowers – Bluish white in Bunches fruits 6 – 18 ” long, 6 veins greyesh or blackish.

Tribes : *Moringa concanensis* - found in Maldah of Bengal, Rajputana and Sind, *Moringa terrigosperma*.

Occurrence : Whole of India and Burma.

Urinary System : Stimulates kidney, increases quantity of urine and redness obesity.

Reproductive system : Brings menstruation.

Eye : Seed extract is used as eye ointment

Useful Part: Skin, leaf, seed oil.

TABLE – I**Weekly maternal body weight gain (mean) of different groups of drug treated rats.**

Name of the Drug	Group	Maternal weight gain (Mean)			
		0 day	7 days	14 days	20 days
<i>Moringa oleifera</i>	Drug treated	0	14	22	43
1% gum acacia	Control	0	28	45	101

The leaves were collected from village Gora, District Raibarelli (U. P.), dried in shade, chopped in small pieces and extracted with 90% ethanol and 10% water. The extracted material was evaporated to dryness in a rota evaporator under low temperature. The dose 175 mg/kg was prepared in distilled water by Macerating the dried extract with small quantity of gum acacia.

Charles foster rats about 90 days old weighing 160 ± 20 g were used. The animals were kept in air conditioned quarters ($22 \pm 2^{\circ}\text{C}$) in 60% humidity, illuminated 12 – 24 hours from 6.00 am to 6.00 pm and supplied with water ad-libitum. The regularity of estrous cycle was checked daily by vaginal smears. Proestrous females were caged with male rats of same strain in the evening and occurrence of copulation was established next morning at 10.00 am

by checking the presence of sperms in the vaginal smears assuring the copulation time between 6.00 pm and mid night. This was labeled 0.5 of gestation as $\frac{1}{2}$ day. Thereafter the pregnant rats were weighed and housed individually. The prepared 35 mg/ml solution /200 gm body weight was administered orally with the help of a feeding syringe suggested by Prakash and Mathur² from 5 to 10th day of pregnancy. The control group of rats, received 1.0% gum acacia. Body weight of animals were recorded at 0, 7, 14, 20 days of post mating period.

The leprotomy was done of all the animals' day 20 of gestation by caesaraub section between 10.00 am to 1.00 pm. All the mothers were checked for implantation, live birth or dead births individually.

TABLE – II

Group	I	II
Parameter	Drug treated	Control
No. of pregnant animals	7	7
Dost mg/ kg body wt.	175 mg/ kg	1% gum acacia
Duration of drug administration (Post mating period)	5 – 10 days	5 -10 days
No. of corpus luteum	79	79

No. of implantation	79	79
No. of Resorption	79	Nil
Average foetal body wt. in gms	Nil	5.56 ± 0.15
Average foetal size from Rump to crown (cm)	Nil	3.50 ± 0.29
% Abortions	100.0	0.0

RESULTS

The above solution of powder when given orally at the dose of 175 mg / kg from days 10 of post mating period. Hundred per cent abortifacient activity was observed.

1. Maternal body weight gain: Gain in body weight was less in the treatment group as compared to the control group (see Table No. 1).
2. Mortality: did not occur in any of the group.
3. No foetus formation was observed in drug treated group (see Table No. 2).

DISCUSSION

Large number of medicinal plants have been reported to possess antifertility activity³⁻⁶.

Moringa oleifera has been studied by Prakash et al (1976)⁷ earlier in reporting antifertility activity in albino rats⁸⁻¹⁵.

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Six indigenous plants were tested for antifertility activity on early pregnancy in albino rats but *Moringa oleifera* exhibited only 50% antifertility activity¹⁶. However, in the present communication of work 100% abortifacient activity has been observed with the plant extract of *Moringa oleifera* and none of the parameters of antifertility activity could be detected. Thus plant product of *Moringa oleifera* can be used as an abortifacient drug as a whole wherefore further work will be done with lower doses to find out the exact dose in abortifacient activity in this plant. This thus will follow the activity determination in other parts of the plant and then the isolation of principle.

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