Effect of methanolic extract of *Spondias mombin* on estrous cycle, conception rate and gestation in rabbits

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Several hormonal contraceptive pills have been developed with none being free from side effects. *Spondias mombin* (SM) plant is reported with possible contraceptive effect, however, the reproductive effects of SM appears to be at variance. This study evaluated the effect of SM on estrous cycles, conception and pregnancy in rabbits. Sexually matured Chinchilla rabbit does (25; Mean weight: 1.94 ± 1.06kg) were used for the study. In phase one, fifteen rabbits were synchronized with follicle stimulating hormone (FSH; 2 mg/kg i.m.) at 12 hour intervals for three days. Three days after, they were randomly assigned into three groups of five rabbits each. Group 1 (control group) received 1ml of saline solution orally for thirty days. Group 2 received 800 mg/kg methanolic extract of SM orally for thirty days, while Group 3 received a single treatment of melengesterol acetate (50mg/kg i.m.). Blood was obtained from the jugular vein at intervals of ten days for thirty days for determination of plasma concentration of luteinizing hormone (LH), FSH, estrogen and progesterone. Thereafter, the does were mated and subjected to laparotomy one week after mating to determine the number of embryonal sacs. In phase two, ten does were mated and confirmed pregnant seven days after mating using transabdominal ultrasonography. They were treated with 800 mg/kg methanolic extract of SM orally at ten days after mating and twenty days after mating. The does were observed daily until they either gave birth or aborted. Data were presented as mean ± SD and compared between groups using either student’s t test or repeated measures ANOVA, with significance set at P=0.05. Luteinizing hormone was significantly lower in Group 3 than control and Group 2 by day 20 after treatment. However, FSH was significantly lower in Group 3 compared with control and Group 2. Concentrations of plasma progesterone significantly decreased in both Group 3 and 2 up to day 20 after treatments, while concentrations of plasma estrogen were significantly greater in control and Group 3 than Group 2. There were no embryonal sacs in Group 3 treated rabbits at day 7 after mating, while the number of embryonal sacs in Group 1(5.6 ± 1.3) and Group 2(5.6 ± 1.4) were not significantly different. Following the oral administration of SM by day 10 after mating all does had vaginal bleeding 24 hours following treatments; one had a complete abortion and the remaining four does kidded with a mean litter size of 3.25 kits. Does treated with methanolic extract of SM at twenty days after mating did not have vaginal bleeding and kidded with an average litter size of 6.4 kits. It was concluded that methanolic extract of SM at 800 mg/kg did not adversely affect reproductive cyclicity and pregnancy but caused abortion during early pregnancy in Chinchilla rabbits.

**Keywords:** Contraceptive, hormonal, chinchilla rabbit, ultrasound, *Spondias mombin*