**Unravelling the Reproductive Efficacy of Medicinal Plants in Mice**

**Pisa Beni\*, Madhu Yashpal#, Pankaj Kumar\*& Bechan Lal$**

**\***Department of Zoology, Rajiv Gandhi University, Rono Hills, Doimukh, Itanagar-791112, Arunachal Pradesh, India

**#**Department of Zoology, Gargi College, University of Delhi, Delhi – 110049

**$**Department of Zoology, Banaras Hindu University, Varanasi – 221 005 (U.P.)

**\***Corresponding author email: [pankuana@gmail.com](mailto:pankuana@gmail.com) (Pankaj Kumar)

Historically, humans have used plants as medicine. However, synthetic drug potency and side effects have made people more dependent on natural remedies, and tend to use phytochemicals to improve their health. Native plants *Putranjiva roxburghii* and *Diplocyclos palmatus*, known as “Reproductive Tonics,” are anti-inflammatory, anti-diabetic, anti-microbial, analgesic, and antipyretic. Seed powders of both the medicinal plants may help couples conceive and treat gynaecological disorders and infertility. There is little research on how these plants affect mouse and human reproductive physiology. The methanol seeds extract (ME) of these two plants was prepared and analysed by GC-MS and LC-MS. The phytochemical analysis of ME extract revealed several compounds. Further, male and female mice (3- and 6-week old) were administered ME of both the plants orally, while the control groups received normal saline (NS) for 14, 28, and 42 days. Oral ME and NS administration did not cause liver toxicity, as confirmed by liver histology. No change in body weight was observed in either of the groups. The ovarian histology in ME females showed more vascularization and follicular maturity, while uterine histology showed lumen proliferation and many uterine glands than the control group. ME had prolonged estrus phase than NS in the estrous cycle study. The blood estradiol levels were significantly increased in ME-treated females than the controls. Spermatozoa, Sertoli cells, and interstitial cells were higher in the experimental group than in the control. ME group males had significantly higher testosterone levels than controls. Thus, phytosteroids or flavonoids in plant seed extracts may have caused progonadal activity in mice. However, further research is needed to design a fertility drug based on the methanolic seed extract of these two medicinal plants that could help thousands of people with reproductive and infertility issues.