

Research Focus:

I have focused my research activities in the field of Theriogenology on Andrology and Reproductive Toxicology. I have conducted studies on exposure and health effects of environmental chemicals and phytochemicals in mammalian species, with a focus on developmental and reproductive toxicity. My research examines the mechanism of toxicity of pesticides, drugs, plant extracts and endocrine disruptors on testicular function, sperm and fertility. The target mechanisms include the functions of endocrine systems, the production of reactive oxygen species, and the relationship between clusters of alterations in gene expression and long-term reproductive performance. Research efforts in this area have helped in finding solutions to male infertility as it draws the attention of end-users of such products to the fact that what is been used in the treatment of other body ailments might have grave reproductive implications. My research focus has helped in establishing some baseline information on causes of reproductive failure, a knowledge that is required to develop appropriate interventions for the enhancement of the reproductive performance of domestic animals. Evaluation of male fertility involves the assessment of sperm motility, percentage liveability and sperm count which are part of the major fertility indices in selecting a male for breeding. The published papers identified various factors that can lower male reproductive potentials such as plants, drugs, and certain environmental chemicals which affect sperm concentrations. The study models include laboratory animals, and small ruminants such as sheep and goats. Research focus was also directed at investigating the effect of nutrition on reproductive performance and mortality of the offspring, which is necessary to enhance population dynamics in livestock production. These findings have been published in both local and international journals.