

The Potential Therapeutic Value of Turmeric, Green Tea and Thyme Aqueous Extracts on Imidacloprid Toxicity in Chick [†]

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[†] Presented at Environmental Toxicology: Impact on Human Health (Environ Tox 2021)

Received: 5.11.2021; Revised: 18.11.2021; Accepted: 20.11.2021; Published: 30.11.2021

Abstract: Imidacloprid (IMI) is the most extensively used neonicotinoid causing adverse health effects. The use of natural antioxidants as an alternative medicine may play a crucial role in minimizing the harmful effect of insecticides. Therefore, the study under consideration aims to show the possible morphological and skeletal malformations induced due to *in ovo* administration of IMI with or without plant products, Turmeric, Green tea, and Thyme during the organogenesis of developing chick embryo at doses 0.001mg/egg, 3mg/egg, 300mg/egg and 93.75mg/egg for IMI, Turmeric, Green tea and Thyme comparing with control. The investigation revealed an evident reduction in the length and weight of the embryos and malformations in the feathers, head, and limbs of the embryo. Most of the congenital malformations were seen in the IMI injected groups such as anophthalmia, failure of retraction of the yolk sac, crooked legs, ectopic visceral, sparse body hairs curved scapula, and retardation in the degree of ossification were the most evident in the endoskeleton malformations. Co-administration of Plant products with IMI alleviated all the toxic effects evoked by IMI. In conclusion, Turmeric, Green tea, and Thyme may provide a promising therapeutic value against IMI and other neonicotinoid toxic insults.

Keywords: chick embryos; teratogenicity; ameliorate; imidacloprid; turmeric; green tea; thyme; malformation; morphological; skeletal.

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Funding

This research received no external funding.

Acknowledgments

Authors are extremely grateful to the IIS (Deemed to be University) Jaipur, Rajasthan for providing essential equipment, chemicals, and other infrastructure facilities to conduct the research work and for allowing to work in the Department of Scientific and Industrial Research (DSIR), Government of India approved R and D Laboratory (Life Sciences) of the University.

Conflicts of Interest

The authors declare no conflict of interest.