



Biological Trace Element Research

[Aims and scope](#) →

[Submit manuscript](#) →

Impact of *Camellia sinensis* Iron Oxide Nanoparticle on Growth, Hemato-biochemical and Antioxidant Capacity of Blue Gourami (*Trichogaster trichopterus*) Fingerlings

Published: 24 February 2022

Volume 201, pages 412–424, (2023) [Cite this article](#)

[Prema Paulpandian](#), [Ibrahim Sulaikal Beevi](#), [Beena Somanath](#), [Ramesh Kumar Kamatchi](#), [Balaji Paulraj](#)

✉ [Caterina Faggio](#) ✉

📄 692 Accesses 📄 15 Citations [Explore all metrics](#) →

Abstract

The effect of green tea (*Camellia sinensis*) iron oxide nanoparticles (nano-Fe) on the effectiveness, growth, antioxidant capacity, and immunological response of *Trichogaster trichopterus* (Blue gourami) fingerlings was investigated. UV-Visible, Fourier Transform Infrared, Scanning Electron Microscopy, Energy Dispersive X-ray, X-ray diffraction, Dynamic Light Scattering, and Zeta Potential spectroscopy were used to evaluate the biologically synthesized nano-Fe. Characterization revealed the hexagonal and spherical morphology with an average diameter of 114 nm. Six different experimental diets were supplied to the fish in duplicate for 60 days. The first diet served as a control (no nano-Fe supplementation), whereas the remaining five diets contained nano-Fe at concentrations of 10, 20, 30, 40, and 50 mg/kg (D1 to D5). The results indicated that fish fed a nano-Fe diet at a concentration of 40 mg/kg had improved growth performance, biochemical constituents, hematological parameters, and antioxidant activity in *T. trichopterus*, implying that it might be used as a vital feed supplement in ornamental fish culture.

Access this article

[Log in via an institution](#) →

[Buy article PDF 39,95 €](#)

Price includes VAT (India)
Instant access to the full article PDF.

Rent this article via [DeepDyve](#) ↗

[Institutional subscriptions](#) →

Sections

Figures

References

[Abstract](#)

[Abbreviations](#)

[References](#)

[Acknowledgements](#)

[Author information](#)

[Ethics declarations](#)

[Additional information](#)