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CERTIFICATE OF ATTENDANCE

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With poster presentation of

"Improvement of male Carp (*Cyprinus carpio*) reproductive characteristics by dietary administration of Tribulus terrestris extract"

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POSTER PRESENTATION

Improvement of male Carp (*Cyprinus carpio*) reproductive characteristics by dietary administration of *Tribulus terrestris* extract

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Abstract

This study aimed to assess the effect of *Tribulus terrestris* extract as a feed additive containing phytoandrogens on the reproductive parameters of common carp. This experiment employed a completely randomized design with four treatments and three replications. A total of 120 healthy *C. carpio* (63.8±0.4 g) were randomized into 12 experimental groups and fed a standard carp diet containing 0, 100, 1000, and 2,000 mg/kg of *T. terrestris* extract for 60 days. The results demonstrated that *T. terrestris* significantly increased testosterone secretion ($P>0.05$), whereas estradiol secretion decreased dramatically ($P>0.05$). We found that GSI increased in 100 and 1000 mg/kg treatments relative to the control, but this increase was not statistically significant ($P>0.05$). However, this index decreased significantly in fish fed 2,000 mg/kg extract. The GSI of female carp increased significantly after 2000 mg/kg treatment ($P>0.05$). According to the results, *T. terrestris* extract exhibited the greatest androgenic effect at 100 mg/kg, whereas an excess extract had the opposite effect on the male carp.

Keywords: *Cyprinus carpio*, *Tribulus terrestris*, Reproduction, GSI, Sex steroids