

Title: [Effects of glucocorticoids on plasma levels of thyroid hormones \(T-4 and T-3\) and testicular activity in catfish, *Clarias gariepinus* during different phases of annual breeding cycle](#)

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Abstract: Effects of short-term administration of corticosterone and cortisol on plasma levels of thyroid hormones, gonado-somatic index and testicular histology have been reported in catfish, *Clarias gariepinus* during different phases of its breeding cycle. Corticosterone administration had no significant effect on plasma levels of T-4, T-3 and T-3/T-4 ratio, irrespective of doses and phases of breeding cycle. However, 5 µg dose of cortisol significantly increased plasma levels of T-3 and the T-3/T-4 ratio during quiescent and regressive phases, while it significantly decreased plasma levels of T-4 during progressive phase. During breeding phase, 2 µg and 5 µg doses of cortisol significantly decreased plasma levels of T-4 and T-3, respectively, while 5 µg dose of cortisol alone reduced T-3/T-4 ratio. Irrespective of phases of annual breeding cycle and doses, short-term administration of corticosterone and cortisol had no significant effect either on GSI or testicular histology. These findings suggest that corticosterone is ineffective in stimulating plasma levels of thyroid hormones, while cortisol, depending on dose and phase/season, may differentially increase, decrease or have no effect on plasma levels of thyroid hormones in *C. gariepinus*.