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**Impact of Heavy Metals on The Pituitary Gland of Cirrhinus Mrigala
in Manjeera Reservoir**

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ABSTRACT

Heavy metals have a profound impact on the pituitary gland of *Cirrhinus mrigala*, a freshwater fish species found in Manjeera Reservoir. The pituitary gland, crucial for regulating hormonal balance and growth, is highly sensitive to environmental contaminants. Exposure to heavy metals such as mercury, cadmium, and lead in the reservoir can disrupt its normal functioning. These metals interfere with endocrine system regulation, leading to alterations in hormone production and release. For instance, mercury accumulation in the pituitary gland can impair the synthesis of growth hormones, affecting the fish's growth and development. Cadmium and lead can cause structural damage to pituitary cells, resulting in reduced hormone secretion and consequently, reproductive and metabolic issues. The disturbance in hormonal balance can manifest as stunted growth, impaired reproductive health, and overall diminished physiological performance. Moreover, the disruption of the pituitary gland's function can lead to cascading effects on other endocrine organs and physiological processes. As a result, the health of *Cirrhinus mrigala* in Manjeera Reservoir is jeopardized, reflecting the broader ecological impact of heavy metal pollution. Monitoring and mitigating heavy metal pollution are essential to safeguard the health of aquatic organisms and maintain ecological balance.