

Theme 7: Lakes, rivers, estuaries: water quality, biotic resources, sustainable management

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EFFECT OF EXPOSURE OF A PESTICIDE, CANNON ON OLFACTORY SYSTEM

ORGANIZATION OF A DWARF SNAKEHEAD, CHANNA GACHUA (HAM.)

V.V. Baile and P.J. Patle

Department of Zoology, Division of Fish and Fisheries, RTM Nagpur University campus, Nagpur-440 033, India

In fishes, principal organ of chemosensation is olfactory lobes (generally paired) which consist of olfactory rosette, olfactory bulb and olfactory tract which joins to the telencephalon of the forebrain. Olfactory bulb is the first relay station receiving primary olfactory nerve inputs sending in its turn the output signals to several target areas in the telencephalon and diencephalon. Signals arising from the olfactory tracts are transmitted to respective target areas in the brain which are referred to as secondary olfactory areas.

In *C. gachua*, paired olfactory organs are present in the snout region, attached to the olfactory bulb, terminating on telencephalic hemispheres directly without any tracts and are sessile.

Olfactory organ has numerous lamellae arranged in parallel fashion, showing sensory and nonsensory regions. Olfactory bulb reveals a concentric arrangement in four layers. Few large terminal nerve ganglion cells in the caudomedial region of olfactory bulb, nervous terminalis (NT), are also observed.

The insecticide Cannon is commonly used to spray the agricultural field routinely; which enters the water body through run off. The changes in the olfactory bulb organization at cellular level due to exposure to this insecticide are reported. The deleterious effects of insecticide may affect the reproduction/ spawning of *C. gachua*.]

Keywords: Olfactory organs, pesticide exposure, cannon, teleosts, dwarf snakehead.