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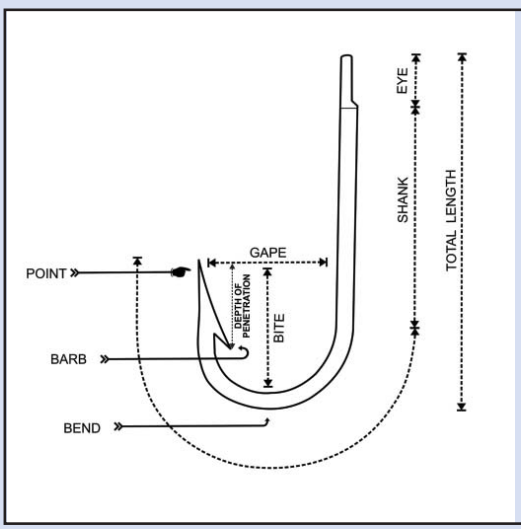
Editorial Committee

News from the Research Front

A New Method for Evaluation of Sharpness of Fishing Hook

Fishing hook is a device which when baited entices the fish into swallowing it and once swallowed it ensures that it is impossible for the fish to escape. It usually penetrates into the mouth of the fish when the bait is taken or when the line is pulled. Shank, eye, gape, barb and point are the basic components of a fishing hook of which the point and barb respectively penetrates and holds the fish. Hook shape, size, breaking strength and sharpness of the point are important attributes responsible for the success of hooking.

Sharpness is very important as a sharp point penetrates easily a fish jaw/mouth during hooking. Made of high carbon steel, on use especially in sea water the hook point loses sharpness and becomes blunt. Corrosion as well as rubbing against rock or hard surface can make the hook point loose its sharpness. Corrosion is a major problem affecting the strength and sharpness of fishing hooks. Fishermen often test the hook



Outline of a typical hook showing depth of penetration

Experimental setup showing sharpness test using Universal Testing Machine

केन्द्रीय मत्स्यकी प्रौद्योगिकी संस्थान
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sharpness by dragging the point across the thumbnail. A sharp point digs into the nail on applying light pressure while a blunt point slides across the nail. However, there is no standard method to assess the sharpness.

At CIFT, Cochin a new method was developed to assess the sharpness of fishing hook by assessing the compression load required to penetrate wax block to a depth equal to the distance from the tip of 'point' of hook to the tip of 'barb'. It is assumed that a sharp hook requires fewer loads to penetrate wax than a hook with lesser sharpness. Effect of corrosion on sharpness of hook was assessed by this method. Test was conducted using Universal Testing Machine under compression mode and assessed the load required by corroded (hook exposed to corrosion medium in a Salt Spray Apparatus) as well as control hook (Round bend No. 7 hook), to penetrate a wax block upto 4 mm.

The compression load required was 205.40 ± 16.07 N and 276.74 ± 25.40 N for control hook and corroded hook (500 h exposed to salt spray) respectively indicating that corroded hooks requires more force to have the same level of penetration of wax block which is a result of reduced sharpness of the hook.

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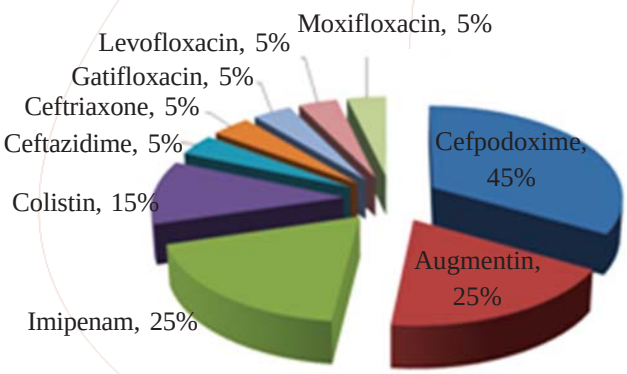
Intestinal Enterobacteria of Bombay Duck

Bombay duck (*Harpadon nehereus*) is a voracious carnivorous fish species abundantly present in the north western sea region of Indian subcontinent. Limited literature is available regarding the intestinal Enterobacteria of the Bombay duck species of Indian subcontinent. Hence, Mumbai Research Centre of CIFT has taken an attempt to identify the intestinal Enterobacteriaceae species of Bombay duck species along Maharashtra coast.

Bombay duck was procured from the local fish market of Vashi, Navi Mumbai. The intestine of the fish was collected aseptically and the gut contents were serially diluted in buffer solution and spreaded over the VRBGA plates. The plates were kept for incubation at 37 °C overnight. From the VRBGA plates, individual colonies were streaked over the Brain Heart Infusion (BHI) slants and gram stain, catalase, oxidase and motility test were carried out. Gram negative bacteria were further tested in API test strips for identification at species level. All the tested samples were subjected to antibiogram analysis using 20 antibiogram antibiotic discs (Himedia, # IC008, Icosa G -II-Minus).



Resistance level of bacterial isolates against different type of antibiotics

Twenty numbers of gram negative bacteria were isolated from the intestine of the Bombay duck for the identification of microbial diversity. The isolates were identified up to species level using API test strip. The isolates were identified as *Proteus penneri, P. vulgaris, P. mirabilis, Grimontia hollisae, Chryseobacterium indologenes, Pantoea* sp., *Pasturella aerogenes, Rahnella aquatilis, Cedecea davisae, Morganella morganii, Plesiomonas shigelloides* and *Citrobactor braakii*.

Among the 20 isolates, six isolates were multiple drug resistant (MDR). Eight isolates were resistant to single antibiotic; remaining six isolates were susceptible to all 20 antibiotics. The isolates were resistant to Cefpodoxime (45%), followed by Augumentin and Imipenam (25%), Colistin (15%), Ceftazidime, Gatifloxacin, Levofloxacin, Moxifloxacin and Nitrofurantoin (all 5%). All 20 isolates were susceptible to the Gentamicin, Oflaxacin, Tobromycin, Amikacin, Nalidixic acid, Ciprofloxacin, Co-trimaxazole and Aztreonam.

In Bombay duck intestine majority of the Enterobacteriaceae isolates belong to genus *Proteus* and *Cedecea*. Among the isolated species, 45% isolates were resistant to Cefpodoxime and 25% isolates were resistant to Augumentin (Amoxallin and Clavulanic acid) and Imipenem.

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