CASES OF DEFORMITIES IN SOME CULTIVABLE FISHES

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ABSTRACT

Three different cases of deformities observed in the cultivable fresh water fishes Catla catla, Labeo rohita, and Labeo fimbriatus are reported. Catla catla was showing lordosis, Labeo rohita scoliosis and head deformity and L. fimbriatus vertebral column and mouth deformity. The skeleton of Labeo rohita was not exhibiting any synostis and as such is a developmental deformity. The deformities observed belong to the categories - biological, developmental and nutritional.

Studies on abnormalities have become a subject of amazing interest, since nature keeps on contributing various curious forms in fishes. Abnormalities can be due to accidental, physical, chemical, nutritional, developmental, biological, physiological, environmental and genetic factors.

In the course of random sampling from the different fish culture systems of the college of Fisheries, Panangad, Cochin, a few interesting cases of abnormalities were obtained. These were subjected to analysis and the details are given in Table 1.

<table>
<thead>
<tr>
<th>SI. No.</th>
<th>Species name</th>
<th>Wet weight (g)</th>
<th>Total length (cm)</th>
<th>Standard length (cm)</th>
<th>Signs</th>
<th>Kind of deformity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Labeo fimbriatus</td>
<td>0.01213</td>
<td>1.1</td>
<td>0.9</td>
<td>The spawn and fry were showing deformities in the vertebral column. Spiral swimming on longitudinal axis and eye malformations.</td>
<td>Biological</td>
</tr>
<tr>
<td>2.</td>
<td>Labeo fimbriatus</td>
<td>28.50</td>
<td>13.0</td>
<td>11.0</td>
<td>Stunted growth, mouth deformity and loss of weight</td>
<td>Nutritional</td>
</tr>
<tr>
<td>3.</td>
<td>Catla catla</td>
<td>2.00</td>
<td>4.5</td>
<td>3.5</td>
<td>Imbalance in swimming. Deformities in the vertebral column at the tail region</td>
<td>Developmental</td>
</tr>
<tr>
<td>4.</td>
<td>Labeo rohita</td>
<td>4.00</td>
<td>6.0</td>
<td>4.5</td>
<td>Imbalance in swimming. Deformities in the vertebral column at the tail region</td>
<td>Developmental</td>
</tr>
<tr>
<td>5.</td>
<td>Labeo rohita</td>
<td>3.00</td>
<td>6.5</td>
<td>5.0</td>
<td>No visible signs except an abnormal curve in the head</td>
<td>Developmental</td>
</tr>
</tbody>
</table>

TABLE 1. Kinds of deformities
In an instance of parasitisation of *Labeo fimbriatus* (Fig. 1), wherein 60% of the spawn and fry were found to have been affected, there were a few with deformities in the vertebral column. The characteristic signs observed in this case were deformities in the vertebral column, rapid spiral swimming on its longitudinal axis and eye malformations. The causative organism was identified as a haplosporidian (Meyer, personal communication). This is a clear case of biological deformity due to parasitisation.

In another case involving the same species, *L. fimbriatus* (Fig. 2) a large number of specimens were found having stunted growth, mouth deformity and weight loss. This could be a case of nutritional disorder. Such deformities owing to nutritional disorders in fishes have been reported by Young Cho (1983).

A fingerling each of *Catla catla* and *Labeo rohita* with vertebral column deformities (Figs. 3 and 4) and a fingerling of *Labeo rohita* with a clear curvature towards the left side of its head (Fig. 5) were also encountered. *C. catla* (Fig. 3) had the typical lordosis near the caudal region. In the case of *L. rohita* (Fig. 4), near the anal fin, right and left scoliosis could be observed. In these three cases, the frequency of occurrence being only negligible, the deformities could be considered as developmental anomalies based on the signs exhibited. *L. rohita* which was exhibiting right and left scoliosis was subjected to a detailed study by exposing its skeleton using standard techniques. No synostosis could be seen which rules out the chance of an accidental anomaly.

The above abnormalities are rare. Fin and vertebral column abnormalities have been reported by several authors namely Gemmill (1912), Hora (1942), Sankar and
NOTE


Abnormalities should be given serious attention especially among the cultivable species as deformities can cause weight loss, reproductive failure, functional disorder of vital organs and rejection by the consumers. The causes of different deformities require detailed study as it may be an indication of various stress conditions.

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REFERENCES