NOTE: III

SOME CHANGES IN THE PHYSICAL QUALITIES OF MUSCLE LIPID OF THE FRESHWATER MURREL, *OPHICEPHALUS STRIATUS* (BLOCH.) DURING STORAGE

It is well known that fish oils and fats get oxidised in the presence of atmospheric oxygen at or near the room temperature. This results in the development of brown color and changes in some of the physical properties like specific gravity, viscosity, etc. (Borgstrom, 1961).

The present communication reports the changes in the specific gravity, coefficient of viscosity, fluidity and surface tension of the muscle lipid of *Ophicephalus striatus* (Bloch.), a common freshwater murrel, when stored at room temperature (32±2°C.)

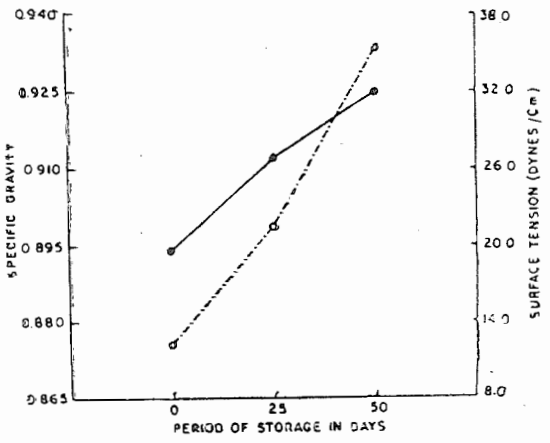

Fig. 1

Changes in the specific gravity and surface tension of muscle lipid during storage.

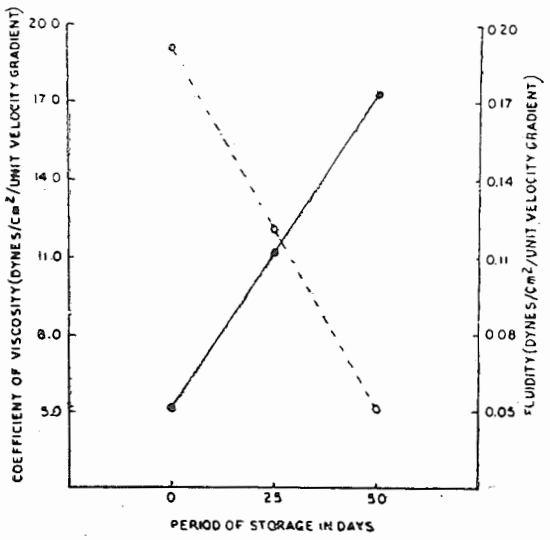

Fig. 2

Changes in the viscosity and fluidity of muscle lipid during storage.

The muscle fat was extracted using petroleum ether (B. P. 40 - 60°C). The specific gravity of the lipid was estimated by the method as given in A. O A. C. (1960). The viscosity was determined using an Ostwald Viscometer, while the surface tension was estimated using Capillary-Height method. For fluidity determination, reciprocal of coefficient of viscosity was used as an index.

The specific gravity of muscle lipid

was found to rise from 0.894 to 0.912 during the first 25 days of storage but registered the highest (0.925) when stored for 50 days (Fig. 1).

Surface tension seemed to rise with the duration of storage (Fig. 1). This was, presumably, due to an increase in the forces with which the molecules in the surface of the lipid tended to compress the molecules below to the smallest possible volume.

During the period of storage marked changes seemed to occur in the direction of an increase in the value of the coefficient of viscosity and a reciprocal decline in the fluidity (Fig. 2). Evidently, the observed increase in the viscosity seemed to be the result of increased internal friction between different molecular layers of the lipid, whereas a decline in the fluidity was perhaps the consequence of its inverse correlation with the coefficient of viscosity.

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