

ABSTRACT

The present study was performed in order to determine the biochemical composition of eggs of *Labeo rohita* during induced spawning and to analyze the egg productivity of *Labeo rohita* in relation to its biochemical composition. Mature unfertilized ova were collected from three different sites during the reproductive season from 15 mature and healthy females, reared in Punjab, Pakistan. Total lipids were extracted from ova sample and subjected to trans-esterification then the resulting fatty acids methyl esters were analyzed by gas chromatography tandem mass spectrometry (GC/MS). The results showed that Rohu ova are rich in palmitic acid C16:0 (SFA) followed by oleic acid C18:1 (MUFA) and stearic acid and DHA(C22). During the breeding season, polyunsaturated (PUFAs), monounsaturated (MUFAs) and saturated fatty acids (SFA) showed significant difference among the samples collected from various sites. Crude protein of ova was also determined by Kjeldahls apparatus and crude fat was determined by Soxhelt apparatus that also possessed significant differences at different sites. Mineral estimation was determined by atomic absorption spectroscopy that also showed significant differences among three different sites. The ova containing the highest amount of minerals, fatty acid, crude protein and crude fat were found having maximum fertilization and hatching rate. It was observed that biochemical composition of fish eggs is directly associated with fertilization success and hatchability during the induced spawning.