

Speckle filtering method in the gonad ultrasound image for Mahseers Fish (Tor Tombroides)

ABSTRACT

In fish breeding production, it is crucial to know the maturation of the eggs before spawning. In order to do that, possible use of ultrasound in identifying the eggs in the gonad is investigated. From the previous studies, ultrasound imaging can be affected by speckle noise. Moreover, with the similarity and subtle difference between the speckle noise and mahseer eggs, there is a need to identify the suitable speckle filtering methods in order to find out the eggs in the gonad ultrasound image. Five speckle filtering methods, which are Mean, Median, Wiener, Speckle Reducing Anisotropic Diffusion (SRAD) and Optimized Bayesian Nonlocal Mean (OBNLM) are tested and compared. From the result, it is proven that Median filter is the best speckle filtering method compared to other four filtering method in order to eliminate the speckle noise in the gonad ultrasound image.

Keyword: Aquaculture; Filtering; Mahseer; Speckle filtering; Ultrasound