

## **Ammonia and Biogenic Amine Production of Fish Spoilage Bacteria: Affected by Olive Leaf, Olive Cake and Black Water**

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**Abstract :** Ammonia and biogenic amine production of fish spoilage bacteria in sardine infusion decarboxylase broth and antimicrobial effect of olive by products (olive leaf extract:OL, olive cake: OC and black water:BW) was monitored using HPLC method. Fish spoilage bacteria produced all biogenic amine tested, mainly histamine and serotonin. Ammonia was accumulated more than 13.60 mg/L. Histamine production was in range 37.50 mg/L by *Ser. liquefaciens* and 86.71 mg/L by *Ent. cloacae*. The highest putrescine and cadaverine production was observed by *Ent. cloacae* (17.80 vs. 17.69 mg/L). The presence of OL, OC and BW in the broth significantly affected biogenic amine accumulation by bacteria. The antibacterial effect of olive by products depended on bacterial strains. OL and OC resulted in significant inhibition effect on HIS accumulation by bacteria apart from *Ser. liquefaciens* and *Prot. mirabilis*. The study result revealed that usefulness of OL and OC to prevent the accumulation of this amine which may affect human health.

**Keywords :** Antimicrobials, biogenic amine, fish spoilage bacteria, olive-by products

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