

Title Biogenic amine content and biogenic amine quality indices of sardines (*Sardina pilchardus*) stored in modified atmosphere packaging and vacuum packaging

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### **Abstract**

A comparative study of the effects of packaging on the formation of biogenic amines during storage of sardines (*Sardina pilchardus*) at 4 °C in air, modified atmosphere pack (MAP) and vacuum pack (VP) was carried out. Sardines were organoleptically acceptable for up to 3 days in air, 12 days in MAP and 9 days in VP. The biogenic amine content generally increased in all treatments with increasing storage time. The concentrations of putrescine and/cadaverine in fish stored in air reached maximum levels of 12.2 mg/100g at 12 days and 10.0 mg/100 g at 15 days. Significant differences were found ( $P < 0.05$ ) in the levels of cadaverine and putrescine among the three treatments. Spermidine and spermine levels increased slightly and did not change much throughout the storage period for all experimental conditions. The amine contents of sardine were highest in sardine stored in air, followed by VP and MAP. Quality indices related to the contents of the major biogenic amines were calculated and they correlated well with organoleptic qualities.