The effects of lime lemongrass and oregano essential oils treatment on quality preservation of salted fish (Rastrelliger brachysoma)

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Abstract: Thai salted fish or Pla-kem is a traditional food and popularly taken as side dishes. In this work, lime lemongrass and oregano essential oils were evaluated for their effectiveness in maintaining post mortem quality of salted fish. Salted fishes were prepared with 60% w/w of NaCl and air dried then further covered with coated paper which was sprayed by 4 µL/L of each essential oil, physical changes, pH, moisture, ash, lipid, protein, salinity, microbiological and sensory evaluation were determined for 15 days. The results showed that the salted fish coated with all essential oils coated paper have no change on physical appearance but effect on chemical and microbiological changes. The lipid content in salted fishes covered with essential oils (lime, lemongrass and oregano) coated paper were significantly decreased to 0.25±0.01, 0.24±0.01 and 0.23±0.01 % lipid (p≤0.05) when compared to control group on 15th day and were retained the changes of protein into the product. Moreover, salted fish covered with oregano coated paper were inhibited the growth of total bacteria throughout the experiment period, while total fungal, total lactic acid bacteria, total coliform and E. coli were ranged on standard. Salted fish covered with lime coated paper had the highest scores on customer acceptance test. Indicated that essential oil treatment might be a potential application for maintaining the quality of salted fish.

Keywords: Essential oil; Salted fish; Preservation