

Improve the Export Quality of Sword Fish Steak by Incorporating Low Valued Fish (*Lates calcarifer*, *Calla catla*, *Lutjanus campechanus*) and Root Crops (*Solanum tuberosum*, *Ipomoea batatas*, *Solenostemon rotundifolius*) to Reduce the Initial Mercury of Sword Fish

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Sword fish has low saturated fat, contain high-quality protein, and provides essential vitamins and minerals. Sword fish is vulnerable to contamination by toxic pollutant mercury and making people ill via food. Sword fish steak is a value added product which includes low valued fish such as *Lates calcarifer* or *Calla catla* or *Lutjanus campechanus* and root crops as *Solanum tuberosum* or *Ipomoea batatas* or *Solenostemon rotundifolius* in order to reduce the initial mercury of Sword fish. Preliminary investigations were conducted to determine the suitable levels of ingredients which have low level of mercury, to produce a value added Sword fish steak. The best recipe was selected based on the lowest level of mercury content of ingredients. Low valued fish was incorporated at 30%, 25%, and 20% by weight of whole amount with 50% of Sword fish respectively and root crop incorporation was at 10%, 7.5%, and 5%. Other ingredients were changed accordingly. Mercury test showed that 30% of fish is suitable to incorporate with 50% of Sword fish in order to reduce the initial mercury content ($P < 0.05$), whereas 10% of root crop is suitable to incorporate with 50% of Sword fish ($P < 0.05$). *Catla catla* was the best fish species to incorporate with Swordfish in order to reduce initial mercury content ($P < 0.05$). The sensory results indicated that the mixture of Sword fish (50%) and *Lates calcarifer* (30%) is more accepted for value added Sword fish steak preparation ($P < 0.05$). Proximate analysis showed that the mixture of Sword fish and Red snapper sample had the highest crude protein. Shelf life study was conducted for six weeks and results revealed that Water Holding Capacity (WHO), Thio Barbituric Acid (TBA) values have increased ($P < 0.05$) while pH value ($P < 0.05$) is reduced. The mixture of Sword fish and *Lutjanus campechanus* was found to be the best combination for fish steak.

Key words: Mercury, Sword fish, Root crop, Value added fish.