

#### COMPARISON OF RAW AND FRIED AFRICAN CATFISH MEAT SUPPLEMENTED WITH BLACK SOLDIER FLY MEAL

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#### INTORDUCTION

The growing demand for sustainable and alternative protein sources has led to increased interest in black soldier fly (BSF) meals as a supplement in aquaculture. Understanding the impact of BSF meal supplementation on the meat quality of African catfish is crucial for evaluating its suitability as a functional food.

### OBJECTIVE

This study aimed to compare the texture of meat of African catfish which were fed by black soldier fly supplemented forage.



Figure 1.: African catfish





Figure2. Raw samples

Figure3. Fried samples

## **MATERIALS AND METHODS**

Fish were maintained in a Recirculating Aquaculture System (RAS). There were three test groups: control (Haltáp Ltd. catfish breeding feed), 33% (33% black soldier fly meal + 67% catfish feed), 50% (50% black soldier fly meal + 50% catfish feed) Following the completion of the feeding procedure, ten samples were randomly collected from each of the three treatments. After the slaughtering and the evisceration, two slices of fillet were made from each fish. The samples were sliced into a rectangle form, measuring 5x10 cm each. 50% of the fish samples were baked in Lainox VE051P oven at 180°C for 10 minutes. The other half of the samples were analyzed in raw form. Texture analysis was carried out using TA.XTplusC texture analyzer. The diameter of the measuring probe was 5 mm, and its

# velocity was 1 mm/s.

The texture of fried and raw samples differs depending on BSF concentration. The texture of the control and 33% BSF samples differed significantly, with the fried samples containing 33% BSF demonstrating enhanced hardness and compactness, indicating a texture change caused by BSF. The raw samples with 33% BSF similarly showed altered texture, albeit firmness varied. In contrast, the 50% BSF samples showed a more noticeable textural difference, with almost 30% higher penetration forces than the control, indicating a denser and more rigid structure.

Therefore, An increase in firmness is one of the mechanical characteristics affected by an increase in BSF concentration. Most likely as a

result of protein interactions and the loss of water. Higher concentrations of BSF material resulted in more stiffness and penetration resistance in both raw and fried samples, highlighting the material's impact on texture.



Keywords: African catfish, Black soldier fly larvae, meat quality, raw and fried meat texture