PROPERTIES OF SOME PREDOMINANT ENZYMES IN PROCESSED FISH

BY

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Approval Sheet

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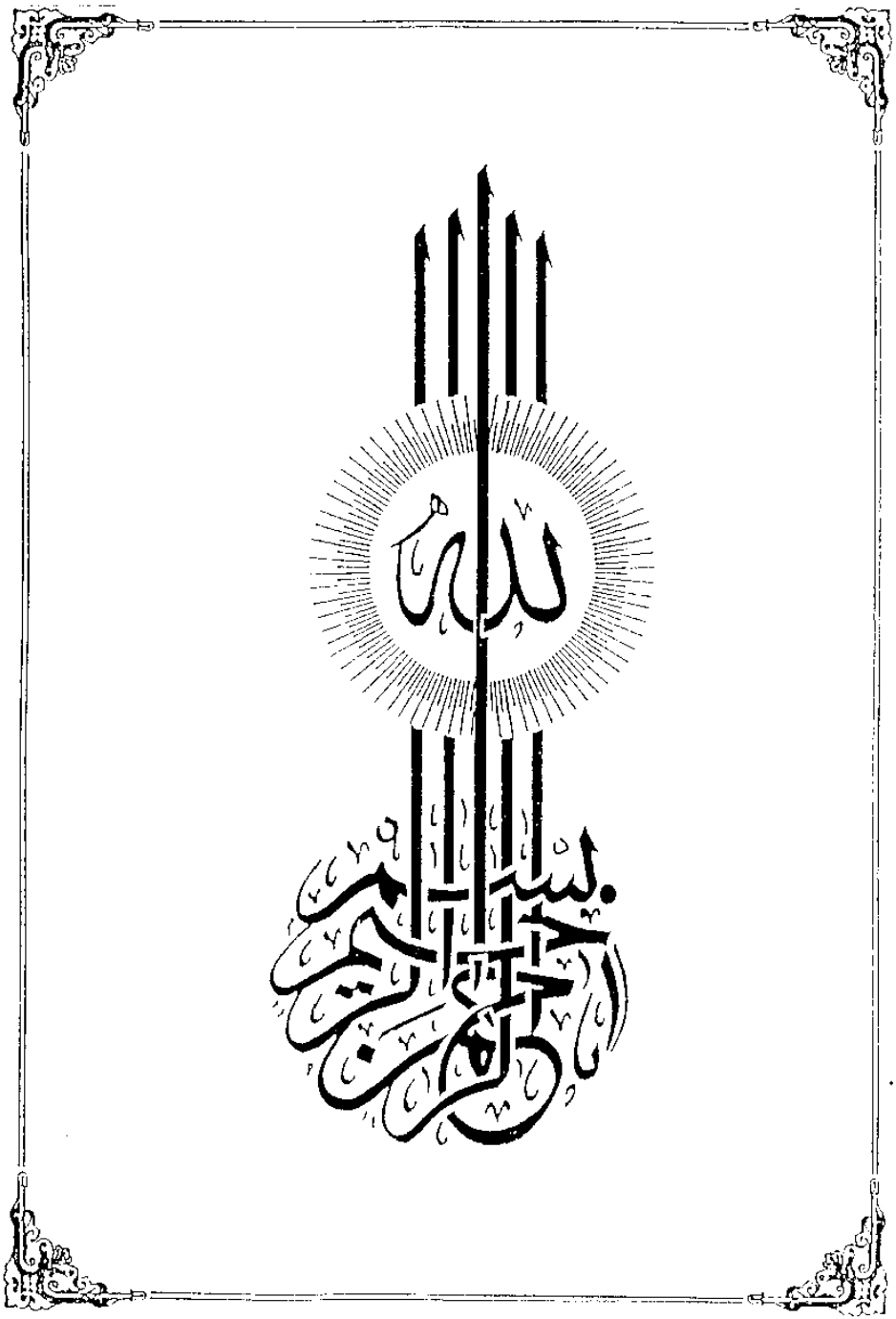

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ABSTRACT

The scope of the study includes the main following points:

1. Velocity determination of the ATPase and alkaline protease enzymes within the fish samples collected from aquaculture farms.

2. The investigated fish samples were prepared in the following forms:

- Frozen forms for mullet, carp and tilapia.
- Smoked forms for carp and tilapia.
- Salted forms for mullet.
- Frying forms for mullet, carp and tilapia.
- Grilling forms for mullet, carp and tilapia.

3. The activity of ATPase in frozen mullet fish samples that expressed as uMPi within 10, 20, 30 and 40 min of reaction was followed through storage for 180 days at -18°C At the begining of storage, the activity was ranged from 0.36 uMPi (10 min) to 1.04 uMPi (40 min); while the corresponding values, were 0.29 and 0.64 after 3 months of storage at -18 C.

The specific activity of ATPase of frozen mullet that was 1.7×10^{-4} decreased to 1.23×10^{-4} uMPi/min/ug

protein enzyme after 30 days of storage at -18°C and reincreased to 1.34 x 10^{-4} uMPi/min/ug protein enzyme after 60 days of storage at the same temperature.

4. The specific activity of the alkaline protease of tilapia sample, indicated a downward trend through the storage period that extended for 180 days at -18 C. However, in salted mullet fish, the data indicated a pronounced effect on the activity of the alkaline proteinase during the first 21 days of storage at room temperature. For instance, the activity of the alkaline protease dropped sharply from 41.04 to 7.12 uM tyrosin within a reaction period of 2 h.

Statistical analysis assured the presence of higher correlation coefficient (R^2). i.e. 71.43% for salted mullet when the specific activity of the alkaline protease was analyzed against storage period. In such a case, the standard error was 0.0232 with a corresponding slope of reaction -5.9615 x 10^{-4} (uM tyrosin per h/day).

5. The expected ATPase activity that based on the WHC of the tested frozen samples was:

** 2.81 x 10^{-4} uMPi/ug protein enzyme when the WHC of frozen carp was 5.67 cm^2 after 90 days of storage at -18°C. The corresponding value of protease was 0.11965 uM tyrosin/min/ug protein enzyme.

** 1.635 x 10^{-5} uMPi/min/ug protein enzyme when the WHC of frozen tilapia was 5.5 cm^2 after 90 days of storage at -18°C. The corresponding value of protein enzyme.

** 1.05 x 10^{-4} uMPi/min/ug protein enzyme when the WHC of frozen mullet was 9 cm^2 after 90 days of storage at -18 C. The corresponding value of protease was 0.2076 uM tyrosin/min/ug protein enzyme.

Regarding to the effect of smoking and salting on the WHC, similar increment trend that found earlier was also recorded in the aforementioned samples till 84 days of storage.

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C O N T E N T S

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