

IMPROVING FOOD SECURITY BY REDUCING THE POST HARVEST LOSSES IN FISHERIES SECTOR

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Work Package 3



To recover and convert underutilised by-catch and waste by-products of fish filleting to high value products

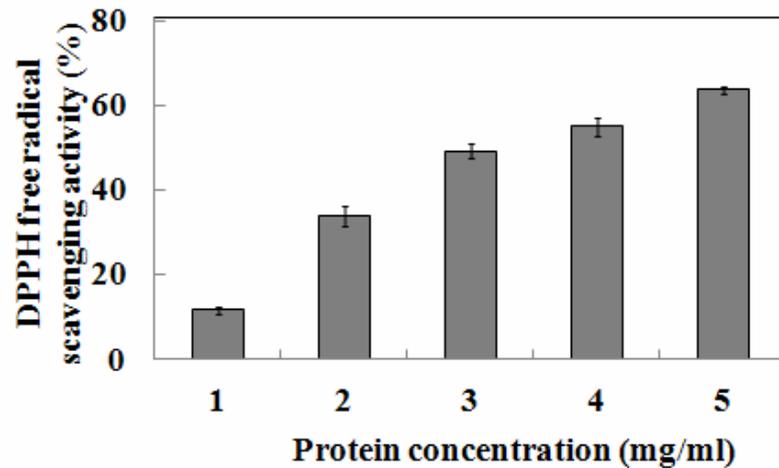


Bioactive properties of Anchovy dried in the solar-biomass hybrid dryer

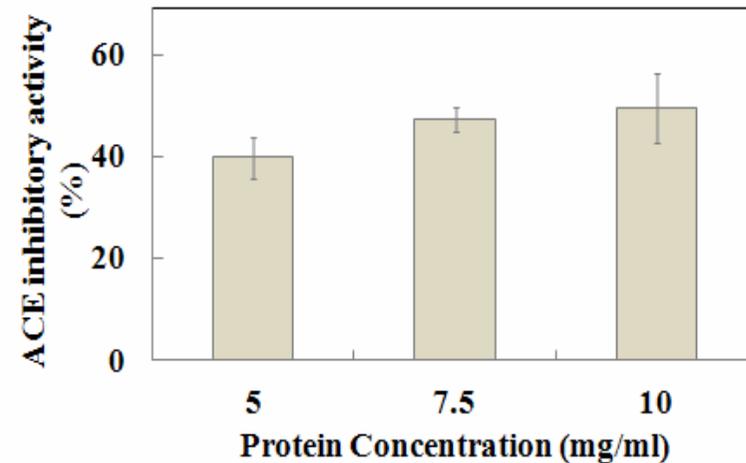


- Hot water extract was used to assess the bioactive properties

**Antioxidant Properties of HWEA:
DPPH Free radical scavenging activity**



**Antihypertensive Property of HWEA:
ACE-I inhibition Activity**





Bioactive properties of protein hydrolysate from Pink perch frame waste



Hydrolysates were prepared using different enzymes at optimum conditions

Bromelain was found to yield the hydrolysates with higher antioxidant and antihypertensive properties

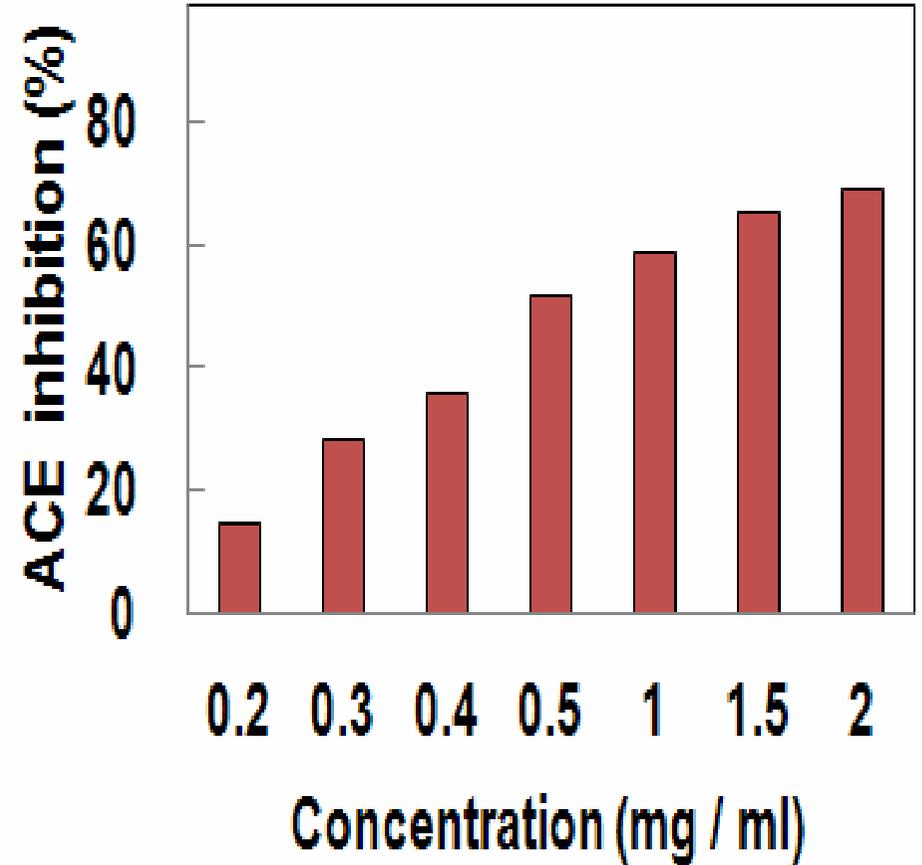
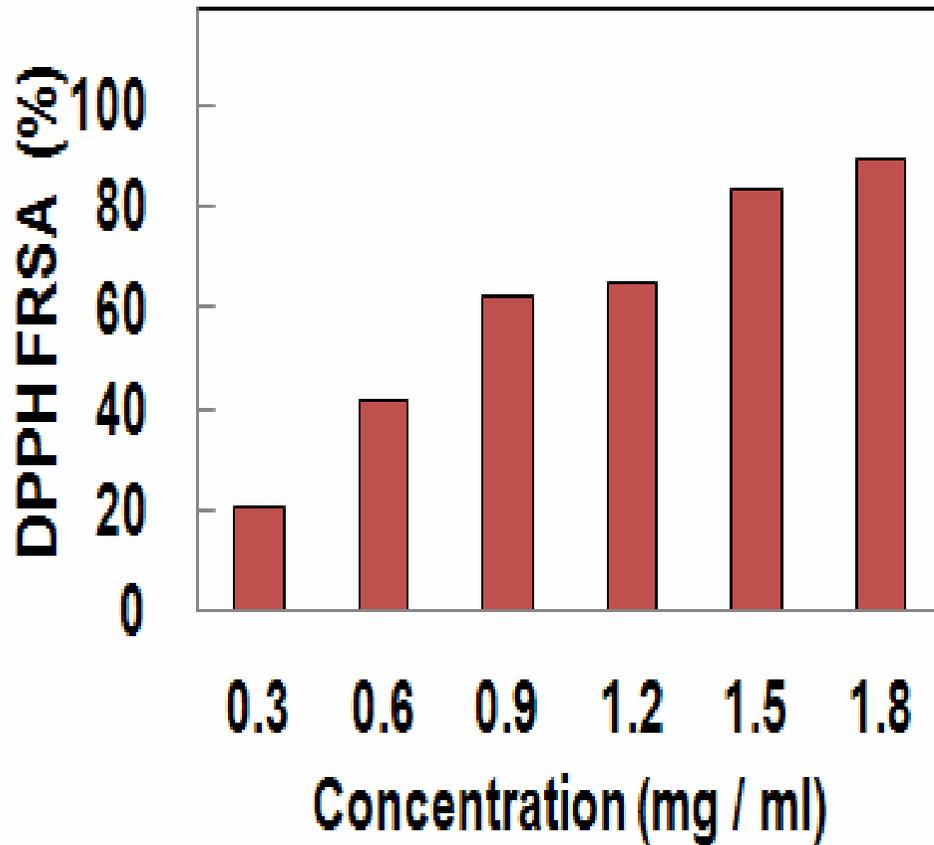
Protein hydrolysate from Croaker head waste



- Croaker fish is used for surimi production
- Surimi production generate 45-55% of total raw material as waste
- Head portion contribute about 40-45 % of waste
- Croaker head contains good amount of protein



Bioactive properties of Croaker head hydrolysate prepared using Bromelain

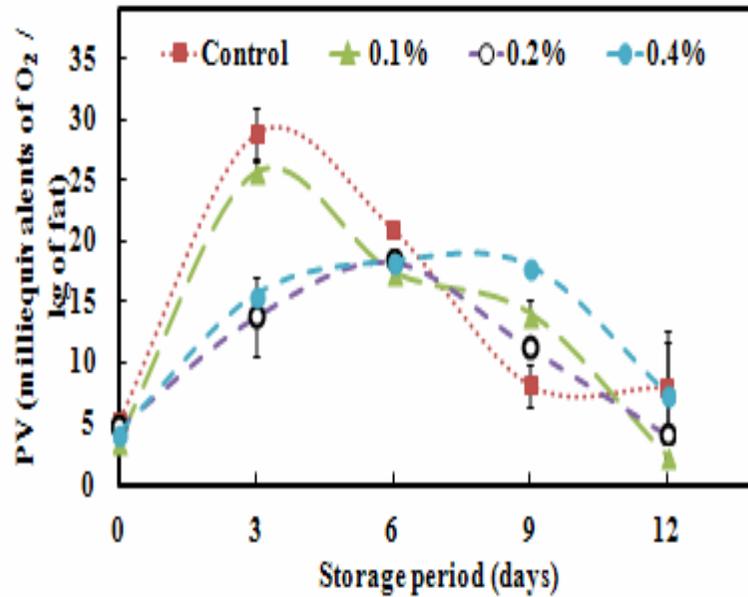




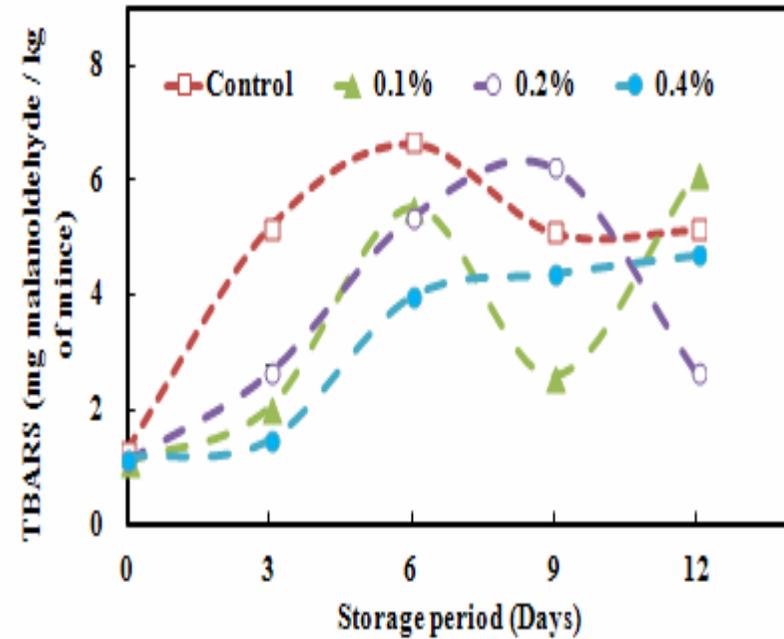
Antioxidative effect of hydrolysate in sardine mince



Changes in PV of Sardine mince during Ice Storage



Changes in TBARS of Sardine mince during Ice Storage

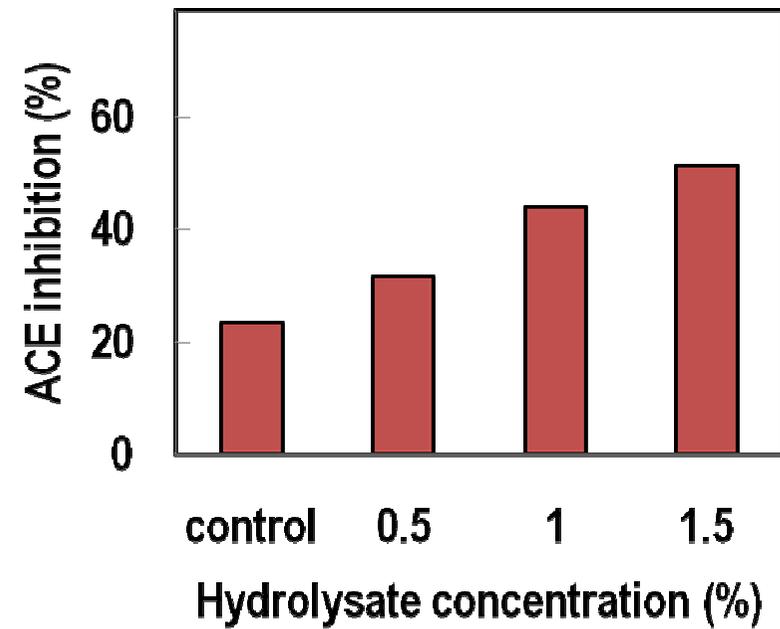




Incorporation of fish protein hydrolysates in Fish mince based products



Residual ACE inhibitory activity after heat processing

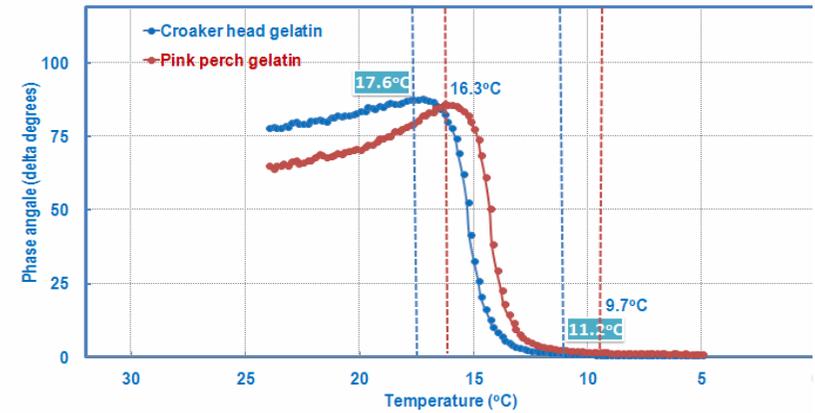




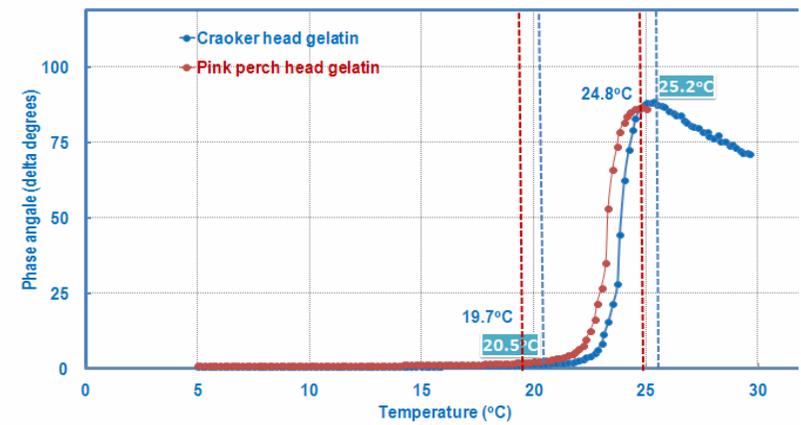
HEAD WASTE OF CROAKER AND PINK PERCH AND THEIR GELATIN



GELLING CURVE OF CROAKER AND PINK PERCH HEAD GELATIN



MELTING CURVE OF CROAKER AND PINK PERCH HEAD GELATIN

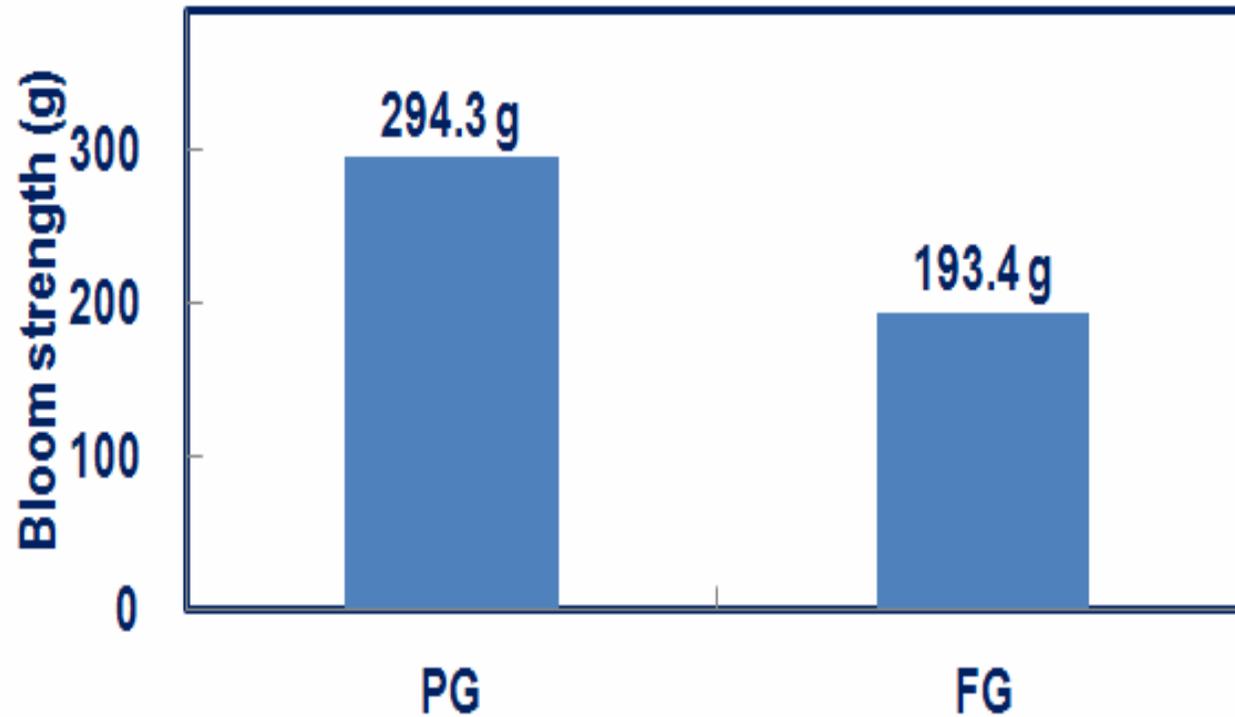




Rapid method for gelatin extraction from fish skin and head waste



BLOOM STRENGTH OF GELATIN



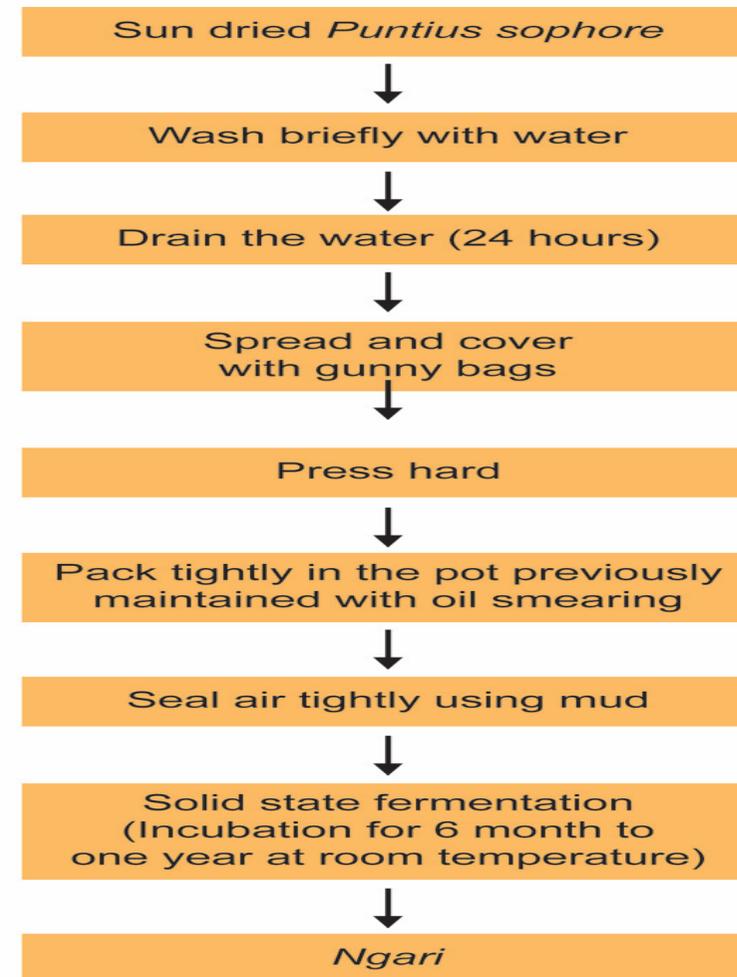
PG-PORCINE GELATIN
FG-FISH GELATIN



Fermented fish products from low value fish

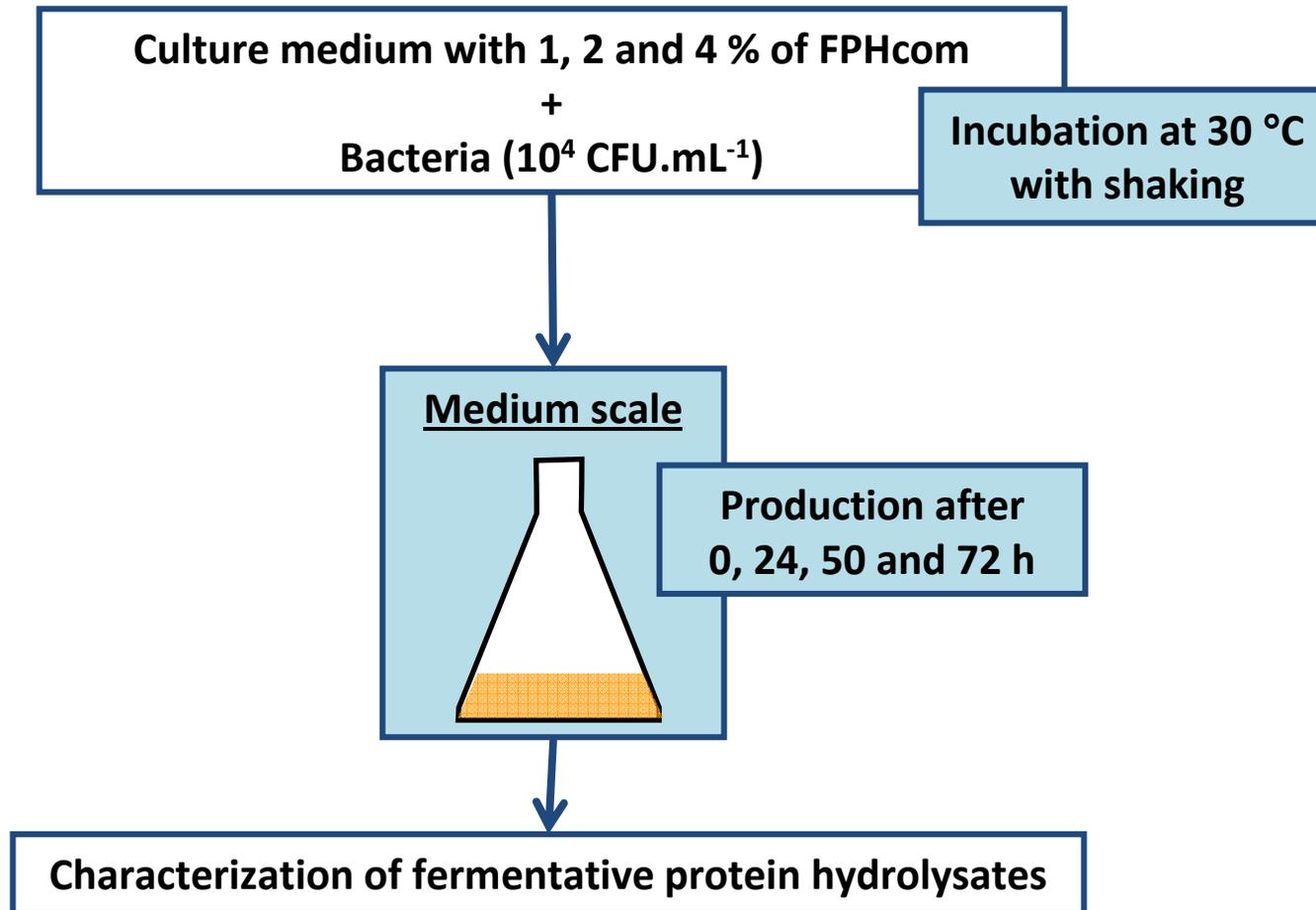


- Fermented fish products possess antioxidant and ACE inhibitory activity
- Bioactive properties increased with fermentation period and peptide concentration



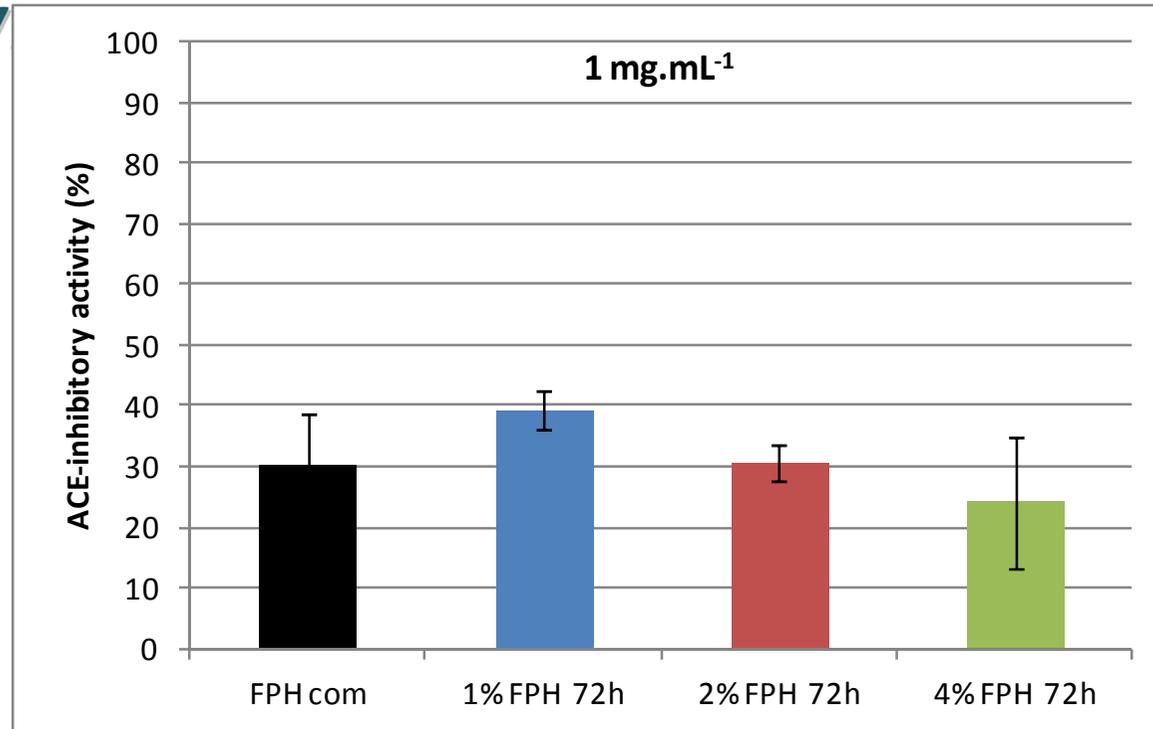


PRODUCTION OF FERMENTATIVE HYDROLYSATES





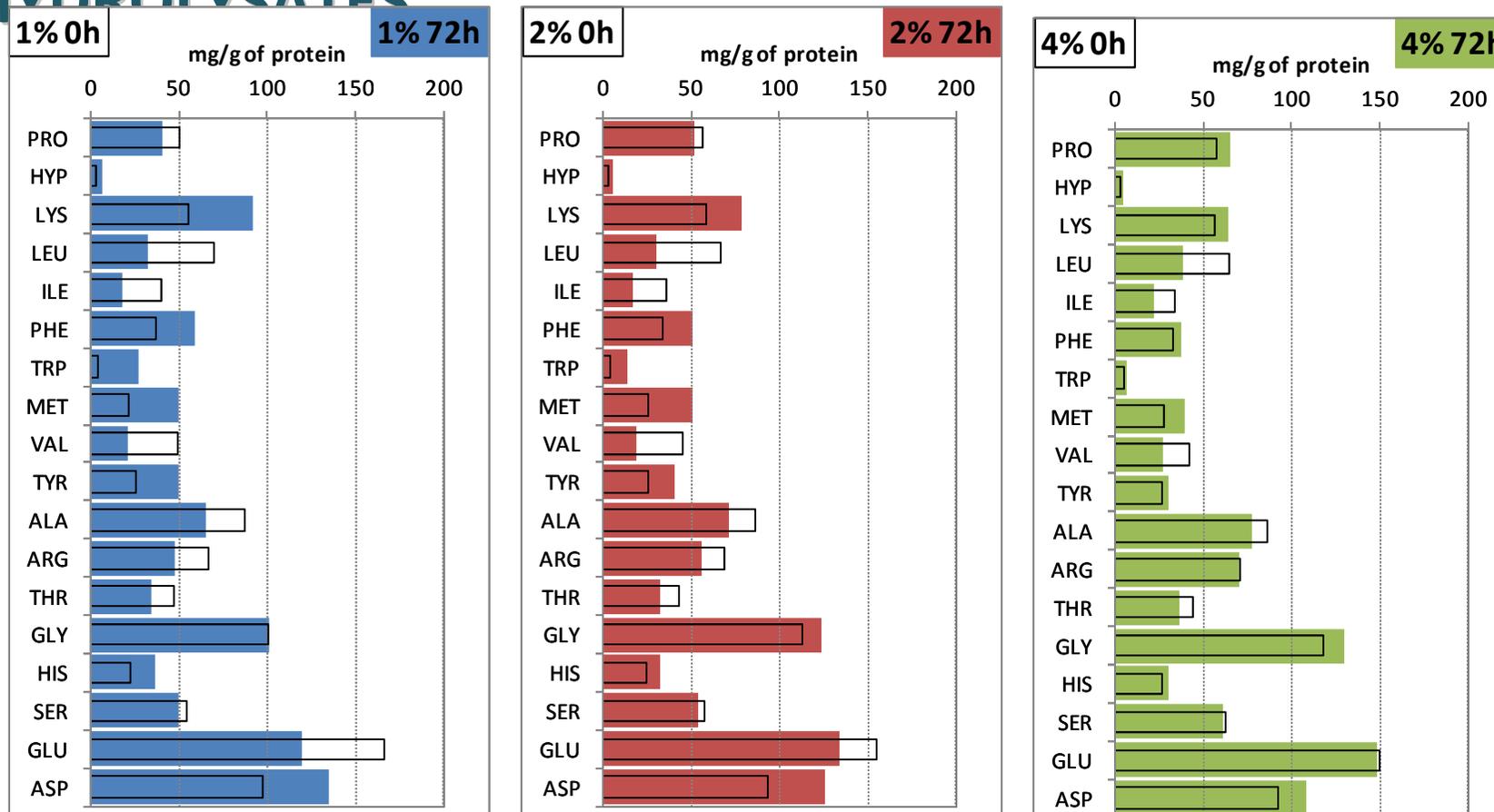
ACE-INHIBITORY ACTIVITY OF FERMENTATIVE HYDROLY



The results suggest the production of new peptides with enhanced ACE-inhibitory activity.



AMINO ACIDS PROFILE OF FERMENTATIVE HYDROLYSATES



The relative proportions of amino acids changed with the fermentation period: LYS, MET and ASP increased; LEU, ILE, VAL, ALA and THR decreased. The difference between 0 and 72h was lower in the 4% FPH.



Conclusion



- Hydrolysates from fish processing waste has been prepared with desired bioactive properties
- FPH was incorporated in fish mince based products which added health benefits
- Rapid method for gelatin extraction was developed which could be used in the industry



Questions?

