EXTRACTION OF FISH GELATIN
MASTER THESIS IN STUDY PROGRAM OF AQUATIC FOOD PRODUCTION

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- Amount of by-product is high in fish industry
- Protein demand in the world is still increasing
- Gelatin is protein, derivative of collagen that is found from connective tissue like skin and bone
- Gelatin is used in food, cosmetics, pharmaceutical and textile industry
- Fish gelatin has special features and it is more suitable for people with special diet
Aim of the thesis is to find suitable way to utilize fish by-products and extract gelatin from mackerel by three different method; acid, alkali and enzyme.
PROCESS OF THE MASTER THESIS

Collecting information
Building the method
Practical part
Results
EXTRACTION PROCESS

1. Raw material
   - If frozen
     - Thawing
   - Pre-treatment
   - Fat removing
     - If skin is used
       - Bleaching
       - De-mineralising
     - If bones are used
       - Extraction
         - Enzyme
         - Heating
         - Drying
### PRACTICAL PART OF THE MASTER THESIS

<table>
<thead>
<tr>
<th>Fish</th>
<th>Method</th>
<th>Part of fish</th>
<th>Number of extraction batch</th>
<th>Number of total extractions</th>
<th>Duration of method (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mackerel</td>
<td>Acid</td>
<td>Head</td>
<td>Batch 1</td>
<td>1</td>
<td>2</td>
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<td>Back bone</td>
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<td></td>
<td></td>
<td>Skin</td>
<td>Batch 4</td>
<td>1</td>
<td>2</td>
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<tr>
<td></td>
<td>Alkali</td>
<td>Head</td>
<td>Batch 3</td>
<td>1</td>
<td>2</td>
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<td>Skin</td>
<td>(Batch 3)</td>
<td>1</td>
<td>2</td>
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<tr>
<td></td>
<td>Enzyme</td>
<td>Head</td>
<td>Batch 2</td>
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DESIRED RESULTS

- To gain pure quality gelatin with appropriate yield
- To find the functional way to utilize fish by-products
- Adjust the method of gelatin extraction and make it suitable for industrial scale
- To be able to graduate on June