



## ***Effects of superchilling on bleeding of Atlantic Cod***

*Áhrif ofurkælingar á blæðingu þorsks*

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- Superchilling extends shelf life:
  - Slows growth of spoilage bacteria
  - Slows down chemical reactions
- Blood:
  - Is nourishment for spoilage bacteria
  - Contains enzymes
  - Contains iron which catalyzes oxidation



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## Conditions of experiment

- Experiment was performed out at sea.
- Samples were collected the last week of July 2015
- Flowchart shows how fish is usually treated on the ship in question.



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## Experiments

**1st:** Different temperature of water in bleeding tank during bleeding.

- Sea temperature, 2°C, -1°C

**2nd:** Different storage conditions at sea.

- Cod bled at sea temp. and iced without cooling, superchilled and iced, superchilled kept without ice at -1°C

**3rd:** Time samples waited before being bled.

- 0 min, 30 min, 60 min, 90 min



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## Analysis

- Evaluation of fillets
- Cooking yield
- Drip
- Water holding capacity
- Water, protein, fat and salt content
- Free fatty acids
- Phospholipids

Measurements performed on on all four parts of fillet:

- Color analysis, whole fillet and parts
- Non-Heme iron
- Heme iron



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## Moving forward

Using the data from this experiment another one is being planned focusing on the things we feel are still unanswered.



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**Thank you**



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