

# Pre rigor Produced Fillets of Atlantic Cod (*Gadus morhua* L.) Show no Cold Shortening



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## Introduction

Low storage temperature is recommended to achieve longer shelf-life for fresh meat and fish. However, rapid cooling to temperatures close to 0°C of *pre rigor* excised meat from warm-blooded animals or *pre rigor* cut fillets from warm water fish species results in extensive muscle contraction (“cold shortening”) and has adverse effects on quality.

Modern slaughtering of farmed fish makes industrial *pre rigor* filleting feasible. Such fillets show much less fillet gaping and are available to the consumers sooner than fillets produced *post rigor*. *Pre rigor* produced fillets normally have an extended sales period and the costs of storage and distribution may be reduced.

## Aim

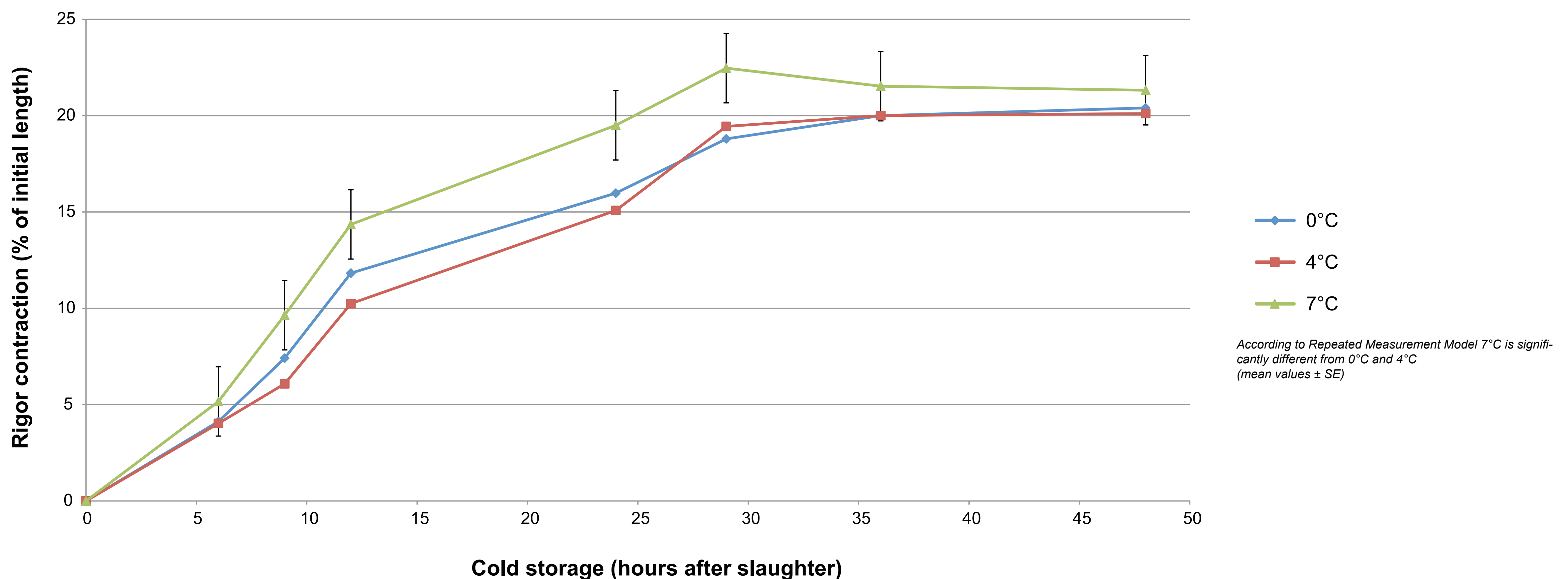
To investigate if cold shortening occurs in the cold water species Atlantic cod (*Gadus morhua* L.) and how relevant cold storage temperatures after slaughtering affect fillet contraction, weight loss and shelf-life.

## Experimental set up

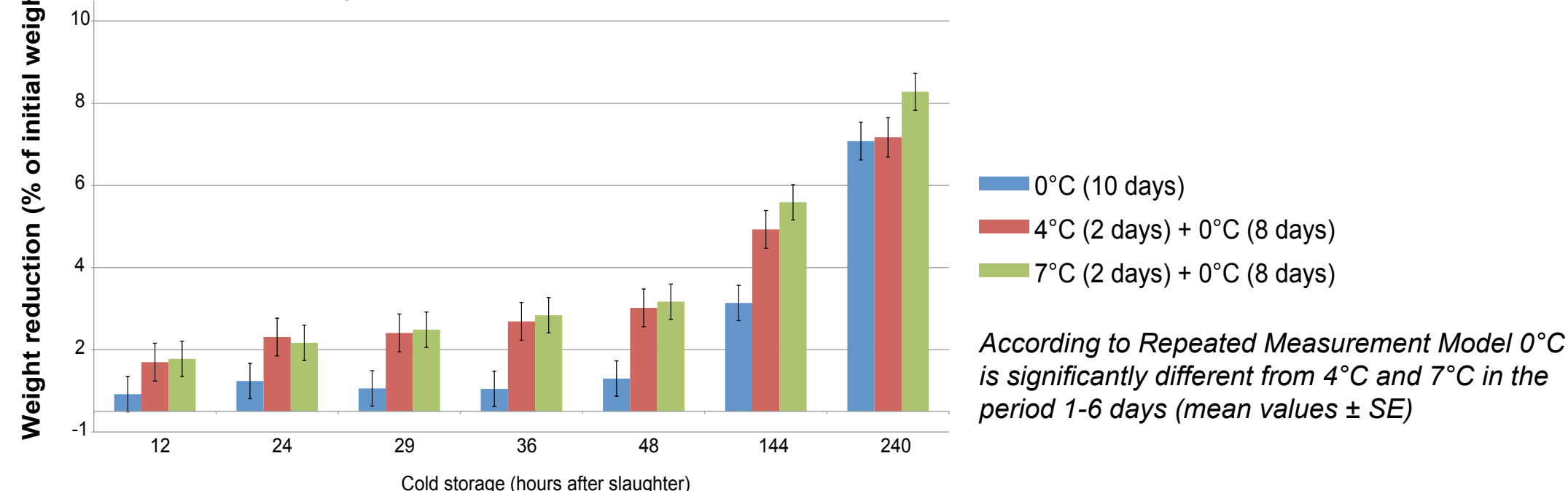
Groups of *pre rigor* produced fillets (n=18) were stored at 0, 4 or 7°C for 48 hours before subsequent storage at 0°C for 8 days for all fillets. Fillet contraction, weight reduction and total volatile nitrogen (TVN) were measured throughout the storage period.

## Results

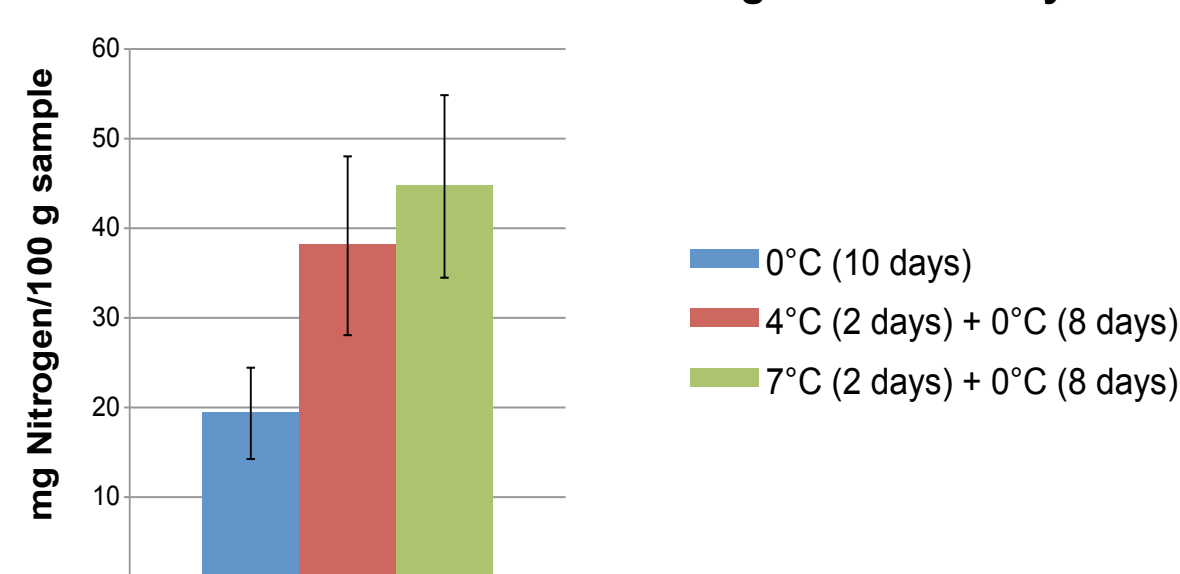
### Fillet contraction in Atlantic cod



### Weight reduction in fillets from Atlantic cod



### Total Volatile Nitrogen after 10 days storage



## Conclusions

- Cold shortening does not occur in *pre rigor* produced fillets of Atlantic cod.
- Weight loss was significantly lower in fillets stored at 0°C for 10 days than for fillets stored at 4 or 7°C during the first 2 days before 8 days at 0°C.
- Elevated cold storage temperature (4 or 7°C) during the first 48 hours post mortem clearly reduced the quality of the fillets after ten days of storage.

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