Wild Wrack (*Ascophyllum nodosum*) – A replacement for salt (as sodium chloride) in bread products

Andrew Fairclough¹ and Kritika Mahadevan¹,²

¹Centre for Food Innovation, ²Food and Nutrition Group
Sheffield Hallam University, Sheffield S1 1WB
K.Mahadevan@shu.ac.uk; A.Fairclough@shu.ac.uk

INTRODUCTION

FSA salt reduction targets for 2012 recommend 1g and 1.2g of salt/100g for bread and breads with additions respectively. This pilot study was conducted to explore the potential of using a whole food like seaweed to reduce levels of sodium in the bread products.

AIM

To evaluate the effect of Seagreens Human Food Quality Wild Wrack Seaweed (*Ascophyllum nodosum*) as a replacement for salt in bread products.

OBJECTIVES

. Incorporate *Ascophyllum nodosum* as a partial or complete substitute for salt in a selection of breads.
. Identify the preferred sample in each product category based on sensory and bake quality.
. Evaluate the suitability of different grades of the wrack for production of acceptable products.

METHODOLOGY

Coarse and fine grade Seagreens *Ascophyllum nodosum* inherently contain only 0.09g salt/g. They were incorporated separately into standard white and wholemeal bread recipe as 50:50 wrack:salt or 100% salt replacement (Table 1).

This reduced the salt content of the loaves to 0.6g/100g and 0.09g/100g bread respectively. Controls (1.1g salt/100g loaf) were used for comparison.

For breads with additions i.e. sundried tomato and basil bread, only coarse wrack at 50% and 100% salt replacement were included (Table 2). The control samples had 1.3g salt/100g loaf.

RESULT

In wholemeal bread, samples containing 50:50 coarse wrack: salt were preferred (67%) followed by control (20%) and 50:50 fine wrack: salt (13%).

Similarly, for white bread, 75% of the panellists preferred samples containing 50:50 coarse wrack: salt; 17% preferred the samples with 50:50 fine wrack: salt and 8% preferred the control.

CONCLUSION

This study demonstrates for the first time that Seagreens *Ascophyllum nodosum* is a potential replacement for salt and can be used to achieve salt levels below the recommended limit specifically in breads with additions.

ACKNOWLEDGEMENT

The authors wish to thank Seagreens® Ltd for providing samples of *Ascophyllum nodosum* and Mr Chris Trueman for his baking skills.