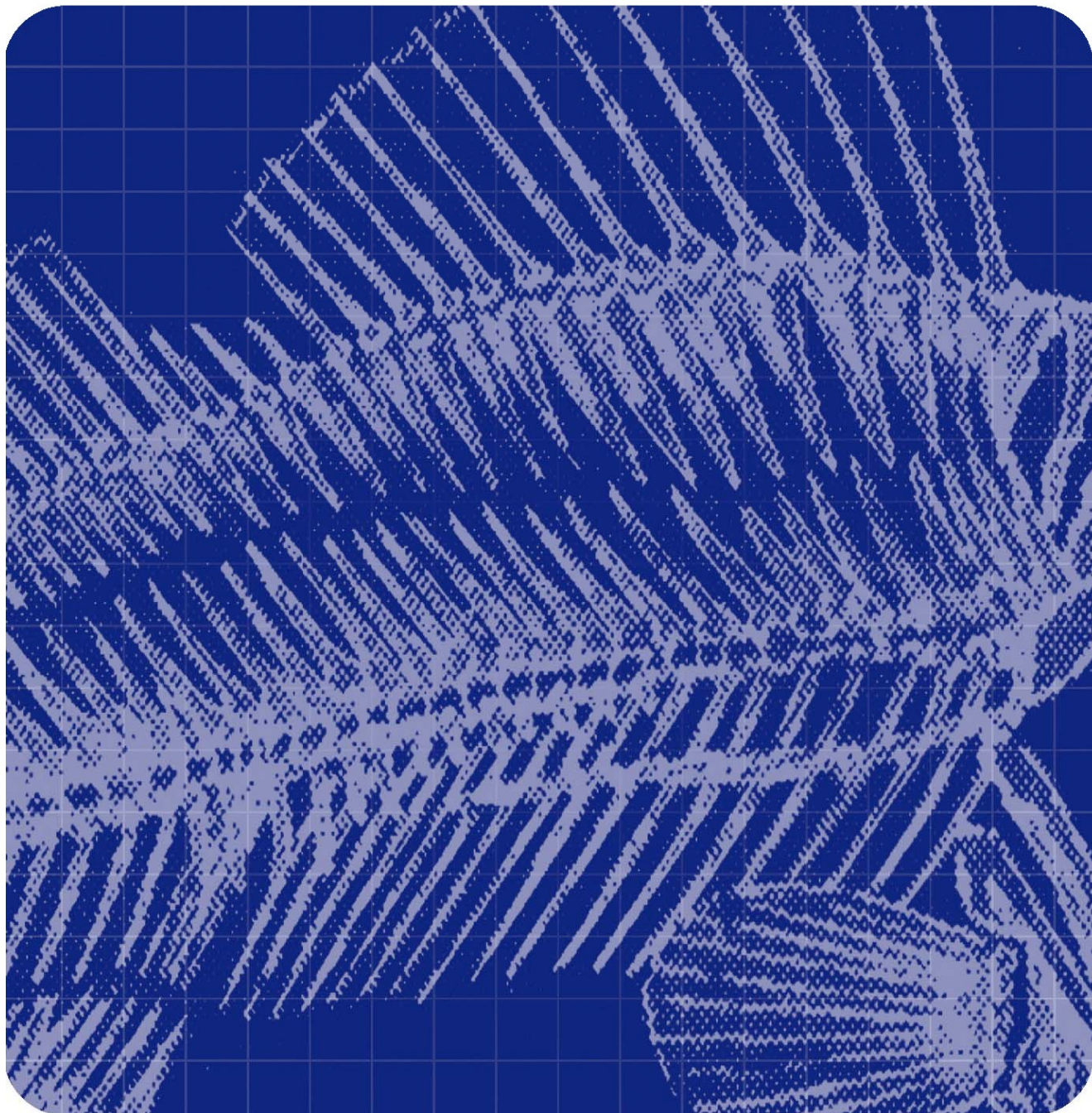




F/T ATLANTIC NAVIGATOR 2004 -2005

Eyolf Langmyhr





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REPORT

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<i>3 keywords:</i> Krill, krillmeal, krilloil	<i>Project no:</i> 5560
<i>Summary:</i> <p>The report is a collection of all analyses carried out at Fiskeriforskning Analytical Laboratory in 2004 and 2005 on samples from F/T Atlantic Navigator. The analytical results are sorted and evaluated.</p> <p>The microbial standard of the krill meal is good.</p> <p>The moisture content varies between 6.0 and 7.8 g/100 g, which is a satisfactory range. Too dry and the oxidation stability are reduced. Too wet and fungus may grow.</p> <p>The variation in the fat content of the krill meal follows the seasonal variation of the fat content of krill raw material. The process is not capable of adjusting for the variation in the fresh krill.</p> <p>The high proportion of phospholipids in krill (40 %) makes it difficult to separate the fat by only heat and mechanical treatment.</p> <p>Most of the oxidation reactions in the process take place in the dryer.</p> <p>The flow properties of krill meal are good for meals with less than 18 % fat.</p> <p>The Kett analyser gives high values for protein, low for ash, and lower for fluorine than the chemical analyses. The results for moisture, fat and salt are in agreement with the chemical analyses. With a proper calibration this instrument should work well for process control.</p>	<i>Employers ref.:</i> Finn-Arne Lorentsen

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1 INTRODUCTION

By request from Finn-Arne Lorentsen, Aker Seafoods, all analyses carried out at Fiskeriforskning Analytical Laboratory in 2004 and 2005 on samples from F/T Atlantic Navigator are collected. In this report the analytical results are sorted and evaluated. The evaluation is based on production reports from Atlantic Navigator and advices and discussion on processing.

2 ANALYTICAL METODS

2.1 Method references

Protein, Kjeldahl's method: ISO 5983:1997, Method A 01. Uncertainty: 1 %.

Nitrogen, Combustion: ISO/DIS 16634, Method A 25.

Water Soluble Crude Protein: In house method A 20.

Digestible protein, Mink: Skrede A., Acta Agric. Scandinavica, 29, 241-257, 1979. Mundheim H. og Opstvedt J., The current status of fish nutrition in Aquaculture, Laboratory of fish nutrition, Tokyo, Japan, 195-200, 1989. M. Takedo and T. Watzuake (Editors). Method A 24.

Moisture/Dry matter: ISO 6496 (1999). Method A 04. Uncertainty: 4 %.

Ash: ISO 5984:2002. Method A 02. Uncertainty: 3 %.

Fat, Ethyl acetat extraction: NS 9402, 1994 (modified calculation). Method A 29.

Fat, Soxhlet: AOCS Official Method Ba 3-38 Reapproved 1993. Method A 03.

Fat, Acid hydrolysis: Commission Directive 98/64/EC. Method A38.

Fat, Bligh and Dyer: E.G. Bligh & W.J. Dyer: A rapid method of total lipid extraction and purification. Can.J.Biochem.Physiol. Vol 37 (1959). Methode A 56.

Salt (NaCl): AOAC, Methods of analysis, 16th edition, 937.09. Method A 06.

Amino acids: Waters Accq-Tag Amino Acid Analysis Method. Analytical Biochemistry 211, 279-287 (1993). Method A 42.

Ethoxyquin, Fluorimetrisk metode: AOAC Official Method 963.07, Modification: Hexan replaces petroleum ether, pkt. 5. C. Method A 44.

Flow number: Nilsen, Ø. Hjelpstoffer - et alternativ for å bedre flyt-egenskapene til sildemel. SSF Report B337 (1981). Method A35.

Astaxanthin: Schierle J. & Härdi W. 1994. Determination of stabilized astaxanthin in Carophyll® Pink, premixes and fish feeds. Edition 3. Revised Supplement to: Hoffman P,

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