

Titill / Title	Influence of seasonal variation and frozen storage temperature on the lipid stability of Atlantic mackerel (<i>Scomber scombrus</i>)		
Höfundar / Authors	Paulina E. Romotowska ^{1,2} , Magnea G. Karlsdóttir ¹ , María Gudjónsdóttir ² , Hordur G. Kristinsson ^{1,3} , Sigurjón Arason ^{1,2}		
	<p>¹Matís ohf. / Icelandic Food and Biotech R&D. Vinlandsleid 12. IS-113 Reykjavík. Iceland.</p> <p>²University of Iceland. Faculty of Food Science and Nutrition. Vinlandsleid 14. IS-113 Reykjavík. Iceland.</p> <p>³University of Florida. Department of Food Science and Human Nutrition. 359 FSHN Building. Newell Drive. Gainesville. FL 32611. USA.</p>		
Skýrsla / Report no.	16-15	Útgáfudagur / Date:	Desember 2016
Verknr. / Project no.	20022166	Skýrsla lokuð til 01.01.2018	
Styrktaraðilar /Funding:	AVS rannsóknarsjóður í sjávarútvegi (R 040-12)		
Ágríp á íslensku:	<p>Áhrif geymsluhitastigs (-18 °C vs. 25 °C) og veiðitíma (ágúst vs. september) á niðurbrot fitu í Atlantshafs makríl veiddum við Íslandsstrendur voru skoðuð í þessu verkefni. Stöðugleiki fitunnar var metinn með því að mæla fyrstastigs (PV) og annarsstigs myndefni þránunar (TBARS), fríar fitusýrur (FFA) auk fitusýrusamsetningu. Niðurstöðurnar sýna marktækan mun í fituniðurbroti með langvarandi geymslu, þar sem niðurbrotið var marktækt minna þegar geymt var við -25 °C samanborið við -18 °C. Auk þessa var fiskur veiddur í september með hærri þránunargildi samanborið við fisk frá ágúst. Aftur á móti var ensímatískt fituniðurbrot meira í ágúst en september. Niðurstöðurnar gáfu einnig til kynna að magn ómega-3 fjölómettaðra fitusýra var nokkuð stöðugt út geymslutímam. Með öðrum orðum þá sýndu niðurstöðurnar að hitastig í frostgeymslu hafði mikil áhrif á fituniðurbrot en stöðugleikinn var háður því hvenær fiskurinn var veiddur.</p>		
Lykilorð á íslensku:	Atlantshafs makrill; frostgeymsla; hitastig; árstíðarbreytileiki; fituniðurbrot, þránun		

Report summary

<p><i>Summary in English:</i></p>	<p>Lipid deterioration of Atlantic mackerel (<i>Scomber scombrus</i>) caught in Icelandic waters was studied, as affected by different frozen storage temperatures (-18 °C vs. -25 °C) and seasonal variation (August vs. September). The lipid stability was investigated by analyses of hydroperoxide value (PV), thiobarbituric acid reactive substances (TBARS), free fatty acids, as well as changes in fatty acid composition. Results showed significant lipid deterioration with extended storage time, where the lower storage temperature showed significantly more protective effects. Furthermore, a higher lipid oxidation level was recorded for fish caught in September than in August, although lipid hydrolysis occurred to be greater for fish in August than in September. Moreover, results indicated a rather stable level of omega-3 fatty acid during the whole frozen storage period. The analysis indicated that both lipid oxidation and hydrolysis were affected by the frozen storage temperature and the stability differed with regards to season of catch.</p>
<p><i>English keywords:</i></p>	<p><i>Atlantic mackerel; frozen storage temperature; seasonal variation; lipid oxidation; lipid hydrolysis</i></p>