

Czech Academy of Agricultural Sciences



Open Access Agricultural Journals

Czech Journal of
FOOD SCIENCES

[home](#) [page](#) [about](#) [us](#) [contact](#)



[us](#)

Table of
Contents

IN PRESS

CJFS 2015

CJFS 2014

CJFS 2013

CJFS 2012

CJFS 2011

CJFS 2010

CJFS 2009

CJFS 2008

CJFS 2007

CJFS 2006

CJFS 2005

CJFS 2003
CJFS 2002
CJFS 2001
CJFS 2000
CJFS Home

Editorial Board

For Authors

- **Authors Declaration**
- **Instruction to Authors**
- **Guide for Authors**
- **Copyright Statement**
- **Fees**
- **Submission**

For Reviewers

- **Guide for Reviewers**
- **Reviewers Login**

Czech J. Food Sci., 33 (2015): 346-353

doi: 10.17221/435/2014-CJFS

[[fulltext](#)]

The chemical composition (nutritional and freshness parameters) and sensory characteristics were evaluated of escolar (*Lepidocybium flavobrunneum*) defrosted raw fillets and steaks that were marinated differently (pepper, onion, chilly, herbs, knusper, and hot) and packaged in a manner suitable for microwave heating (Darfresh® Simple Steps®). The study was carried out by using 8 skinless fillets of *Lepidocybium flavobrunneum*. The selected 18 parameters, i.e. dry matter/moisture, crude protein, net protein, collagen, net muscle protein, lipid, ash, saccharide, energy value, pH, water activity, salt content, total volatile basic nitrogen, trimethylamine, free fatty acids, peroxide value, and thiobarbituric acid assay were evaluated. The results indicate that the sample of Chilly

marinated steaks was evaluated as the best one (90.29 ± 9.82), however, the samples of Herbs (89.6 ± 13.89) and Knusper (88.64 ± 15.59) marinated steaks also received more than 85 points for the overall impression. Control sample received the smallest number of points (71.7 ± 26.54) for the overall impression.

Keywords:

Escolar fish; nutritional value; sensory acceptance; freshness; marination; packaging

References:

Akhtar R., Rubin K., Chokhavatia S. (2009): Escholarrhea – oily diarrhea after ingestion of escolar fish. American Journal of Gastroenterology, 104: S339–S339.

Anonymous (2014): Sealed Air Food Care: Simple Steps® VSP Package for Produce. Available at <http://www.cryovac.com/NA/EN/food-packaging-products/simple-steps-vsp-produce.aspx>

Aubourg Santiago P. (1999): Lipid

damage detection during the frozen storage of an underutilized fish species. Food Research International, 32, 497-502 <[doi:10.1016/S0963-9969\(99\)00123-4](https://doi.org/10.1016/S0963-9969(99)00123-4)>

Bremner H.A. (2002): Safety and Quality Issues in Fish Processing. Cambridge, Woodhead Publishing Limited.

Brendtro Kirsten S., McDowell Jan R., Graves John E. (2008): Population genetic structure of escolar (*Lepidocybium flavobrunneum*). Marine Biology, 155, 11-22 <[doi:10.1007/s00227-008-0997-9](https://doi.org/10.1007/s00227-008-0997-9)>

COBB BRYANT F., ALANIZ INELDA, THOMPSON CHARLES A. (1973): BIOCHEMICAL AND MICROBIAL STUDIES ON SHRIMP: VOLATILE NITROGEN AND AMINO NITROGEN ANALYSIS. Journal of Food Science, 38, 431-436 <[doi:10.1111/j.1365-2621.1973.tb01447.x](https://doi.org/10.1111/j.1365-2621.1973.tb01447.x)>

Council Regulation (EC) No 854/2004 of 29 April 2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption.

EFSA (2004): Opinion of the Scientific Panel on Contaminants in the Food Chain on a request from the Commission related to the toxicity of fishery products belonging to the family of Gempylidae. EFSA Journal, 92, 1–5.

FELDMAN K. A., WERNER S. B., CRONAN S., HERNANDEZ M., HORVATH A. R., LEA C. S., AU A. M., VUGIA D. J. (1999): A large outbreak of scombroid fish poisoning associated with eating escolar fish (*Lepidocybium flavobrunneum*). Epidemiology and Infection, 133, 29-33
<[doi:10.1017/S095026880400322X](https://doi.org/10.1017/S095026880400322X)>

Hwang Chiu-Chu, Lin Chia-Min, Huang Chun-Yung, Huang Ya-Ling, Kang Fang-Chin, Hwang Deng-Fwu, Tsai Yung-Hsiang (2012): Chemical characterisation, biogenic amines contents, and identification of fish species in cod and escolar steaks, and salted escolar roe products. Food Control, 25, 415-420
<[doi:10.1016/j.foodcont.2011.11.008](https://doi.org/10.1016/j.foodcont.2011.11.008)>

KAWA Rinko, OGURA M., UEHARA Shin-ichi,
YASUDA Kazuo (2000): Outbreak of
Histamine Poisoning Due to Ingestion of
Fish, "Abura-sokomutsu". *Lepidocybium*
flavobrunneum.. Journal of the Food
Hygienic Society of Japan (Shokuhin
Eiseigaku Zasshi), 41, 116-121
<[doi:10.3358/shokueishi.41.116](https://doi.org/10.3358/shokueishi.41.116)>

Karl H., Rehbein H. (2004): Butterfish on
the German market. *Deutsche*
Lebensmittel-Rundschau, 100: 176–184.

Keller H. R., Kerstetter D. W. (2014):
Length-length and length-weight
relationships of oilfish (*Ruvettus*
pretiosus), escolar (*Lepidocybium*
flavobrunneum), snake mackerel
(*Gempylus serpens*), and longnose
lancetfish (*Alepisaurus ferox*) from the
Gulf of Mexico and the western North
Atlantic Ocea. *Journal of Applied*
Ichthyology, 30, 241-243
<[doi:10.1111/jai.12229](https://doi.org/10.1111/jai.12229)>

Kerstetter D.W., Rice P.H., Snodgrass D.,
Prince E.D. (2008): Behavior of an
escolar *Lepidocybium flavobrunneum* in
the windward passage as determined by

popup satellite archival tagging. Gulf and Caribbean Research, 20: 97–102.

Landgren E., Fritsches K., Brill R., Warrant E. (): The visual ecology of a deep-sea fish, the escolar *Lepidocybium flavobrunneum* (Smith, 1843).

Philosophical Transactions of the Royal Society B: Biological Sciences, 369, 20130039-20130039

<[doi:10.1098/rstb.2013.0039](https://doi.org/10.1098/rstb.2013.0039)>

Ling K.H., Nichols P.D., But P.P.H. (2009): Fish-induced keriorrhea. Advances in Food and Nutrition Research, Vol. 57: 1–52.

Medellitin (2014): Escolar: The World's Most Dangerous Fish//Medellitin. Available at blog.medellitin.com/2008/12/escolar-world-most-dangerous-fish.html (accessed Sept 10, 2014).

Mokrani D., Bendeddouche B., Oumouna M. (2012): Correlation between the sensory and chemical quality indicators used for assessing the freshness of the sardine (*Sardina pilchardus*).

International Research Journal of Basic
and Applied Science, 4: 23–28.

MORI Mikio, SAITO Toshio, NAKANISHI
Yoshie, MIYAZAWA Keisuke,
HASHIMOTO Yoshiro (1966): THE
COMPOSITION AND TOXICITY OF WAX
IN THE FLESH OF CASTOR OIL
FISHES. NIPPON SUISAN GAKKAISHI,
32, 137-145
<[doi:10.2331/suisan.32.137](https://doi.org/10.2331/suisan.32.137)>

Nichols Peter D, Mooney Ben D, Elliott
Nicholas G (2001): Unusually high levels
of non-saponifiable lipids in the fishes
escolar and rudderfish. Journal of
Chromatography A, 936, 183-191
<[doi:10.1016/S0021-9673\(01\)00894-9](https://doi.org/10.1016/S0021-9673(01)00894-9)>

Pilon Geneviève, Ruzzin Jérôme, Rioux
Laurie-Eve, Lavigne Charles, White
Phillip J., Frøyland Livar, Jacques
Hélène, Bryl Piotr, Beaulieu Lucie,
Marette André (2011): Differential effects
of various fish proteins in altering body
weight, adiposity, inflammatory status,
and insulin sensitivity in high-fat–fed rats.
Metabolism, 60, 1122-1130
<[doi:10.1016/j.metabol.2010.12.005](https://doi.org/10.1016/j.metabol.2010.12.005)>

Quigley D.T.G., Flannery K., Flannery K. (2005): First record of escolar *Lepidocybium flavobrunneum* (Smith, 1849) (Pisces: Gempylidae) from Irish waters, together with a review of NE Atlantic records. *Irish Naturalists' Journal*, 28: 128–130.

Rudkowska I., Marcotte B., Pilon G., Lavigne C., Marette A., Vohl M.-C. (): Fish nutrients decrease expression levels of tumor necrosis factor- in cultured human macrophages. *Physiological Genomics*, 40, 189-194

<[doi:10.1152/physiolgenomics.00120.2009](https://doi.org/10.1152/physiolgenomics.00120.2009)>

Ruiz-Gutierrez V., Perez-Zarza M. C., Muriana F. J. G., Bravo L. (1997): Lipid and fatty acid composition of muscle and internal organs from *Ruvettus pretiosus*. *Journal of Fish Biology*, 50, 1353-1357

<[doi:10.1111/j.1095-8649.1997.tb01658.x](https://doi.org/10.1111/j.1095-8649.1997.tb01658.x)>

Schwartz F.J. (1997): Size, body component weights, and fatty acid profiles of the escolar, *Lepidocybium flavobrunneum* (Pisces, Gempylidae) caught in the Atlantic Ocean off the mid-

South-east coast USA. Journal of the
Elisha Mitchell Scientific Society, 113: 9–
15.

Sveinsdóttir Kolbrún, Martinsdóttir Emilía,
Green-Petersen Ditte, Hyldig Grethe,
Schelvis Rian, Delahunty Conor (2009):
Sensory characteristics of different cod
products related to consumer preferences
and attitudes. Food Quality and
Preference, 20, 120-132
<[doi:10.1016/j.foodqual.2008.09.002](https://doi.org/10.1016/j.foodqual.2008.09.002)>

Taylor S.L., Speckard M. (1983): Isolation
of histamine-producing bacteria from
frozen tuna. Marine Fisheries Review, 45:
35–39.

Pérez Zara M. C., Ruiz Gutiérrez V.,
Bravo L. (): Composición lipídica de dos
peces laxantes: <i>Ruvettus
pretiosus</i> y <i>Lepidocybium
flavobrunneum</i>. Grasas y Aceites, 44,
47-52
<[doi:10.3989/gya.1993.v44.i1.1120](https://doi.org/10.3989/gya.1993.v44.i1.1120)>

[[fulltext](#)]

XHTML11 VALID

CSS VALID