
(/ / : // :) *

(*Katsuwonus pelamis*)

(*Thunnus tonggol*)

(*Thunnus albacares*)

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(Schacky, 2000)

Morris *et al.*, 1993; Harris, 1997)

(Mori *et al.*, 2000;

(Agern *et al.*, 1997)

(Albert *et al.*, 1998)

(Blanco *et al.*,

2007)

(Leuenberger, 1991)

(Muyonga *et al.*, 2004)

(Gudmundsson, 2002; Haug *et al.*,

2004; Joly –Duhamel *et al.*, 2002;

Leuenberger,1991; Norland, 1990)

(Jamilah, Harvinder, 2002)

/

(Rahman *et al.*, 2008; Cho *et al.*, 2005)

/ (*Gadus morhus*)

(Gudmundsson,

Hafsteinsson, 1997, Gomez-Guille' *et al.*, 2002).

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.(

(Jamilah

& Harvinder, 2001, 2002 and Cho, Kim 2005)

(Jensen *et al.* 2003)

(Karim, Rajeev, 2009)

$$\left(\frac{a}{b} \right)^c = \frac{a^c}{b^c}$$

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pH

SPSS

Shapiro-wilk

One Way Anova

Tukey HSD

()
 (/ % ± /) (Jonhard *et al.*, 2009)
 (/ % ± /) (/ % ± /) = (/) ×

f = 476.9 , df = 2

Tukey HSD () ,

()

Edible

f = 214.72

(gelatin, sample no 911/1018, com.SA.)

Tukey HSD () df = 2

.()

.()

.()

% / ± / / ± /
/ ± / % / ± /
/ ± / % / ± /

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
	/		/	/	/
	/		/		
	/				

Multiple Comparisons

Tukey HSD

(I) species	(J) species	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
		- / (*)	/	/	- /	- /
		/ (*)	/	/	- /	/
		/ (*)	/	/	/	/
		- / (*)	/	/	- /	- /
		/ (*)	/	/	/	/
		/ (*)	/	/	/	/

*The mean difference is significant at the .05 level.

Dependent Variable: oil

Tukey HSD

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ANOVA

Sum of Squares	df	Mean Square	F	Sig.
/		/	/	/
/		/		
/				

Multiple Comparisons

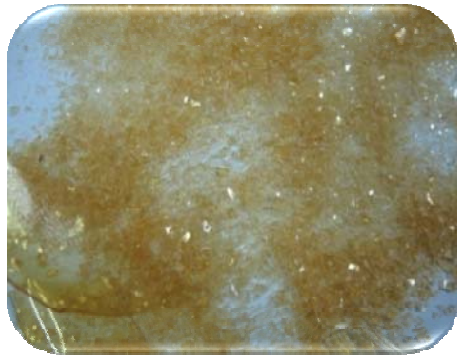
Tukey HSD

(I) species	(J) species	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
		- / (*)	/	/	- /	- /
		- / (*)	/	/	- /	- /
		/ (*)	/	/	/	/
		- /	/	/	- /	/
		/ (*)	/	/	/	/
		/	/	/	- /	/

*The mean difference is significant at the .05 level
 Dependent Variable: gelatin, Tukey HSD

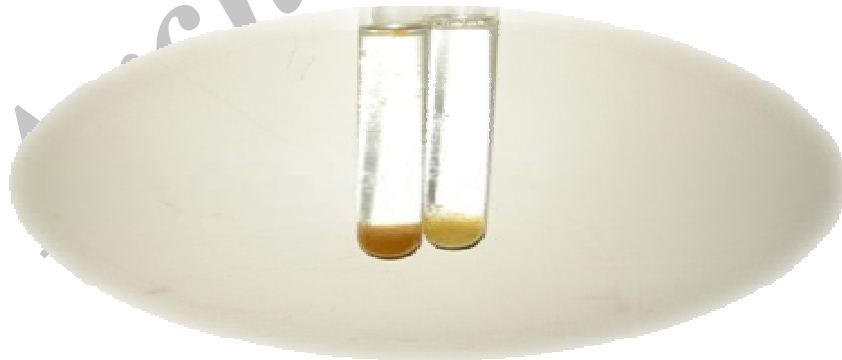


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۲۰۰۲ میزان قابل قبولی داشته است. عواملی که باعث تفاوت در میزان ژلاتین بدست آمده می شود سن ماهی و روش استخراج آن است (Gudmundsson, Hafsteinsson 1997). ژلاتین استخراج شده دارای رنگ زرد و بوی نسبتاً تند بوده که در سایر گزارشات نیز به آنها اشاره شده است. آزمایشات تکمیلی برای از بین بردن این ویژگی ها نیاز می-باشد.

(Aavena -)

(Bustilloset *et al*, 2006)

(Leuenberger, 1991)

(Pollock

روغن ماهی می تواند از کل بدن ماهی و یا از کبد ماهی بدست آید. میزان استخراج روغن از کبد ماهیهای غضروفی به طور میانگین بین ۵۰ تا ۸۰ درصد می باشد (Bakes, Nichols, 1995). در میان ماهیهای استخوانی شگ ماهیان بزرگترین منبع تامین مواد خام برای تهیه روغن ماهی می-باشد که میزان روغن آنها ۲ تا ۳۰ درصد می باشد (FAO, 1986). در این تحقیق روغن استخراج شده از پوست تن ماهیان بطور متوسط ۱۰/۴۵ در صد بود که قابل ملاحظه می باشد. متوسط بازده ژلاتین استخراجی از پوست ماهیها بین ۶ تا ۱۹ درصد گزارش شده است (Karim and Bhat, 2009). استخراج ژلاتین همراه با فرایند بهینه سازی روشها گاهی ممکن است بازده درصد ژلاتین را تا ۲ برابر میزان معمول افزایش دهد. بیشترین ژلاتین استخراج شده مربوط به کوسه ماهیان بوده است (Karim and Bhat, 2009). در این تحقیق میانگین درصد ژلاتین استخراجی از پوست ماهی گیدر حدود ۱۱ درصد بدست آمد که در مقایسه با تحقیقات رحمان و همکاران سال ۲۰۰۸، کو و همکاران سال ۲۰۰۵، گودمانسون و هافستین سال ۱۹۹۷ و مونتر و همکاران سال

(*Solea* *pollachius*)
 (*Lepidorhombus* *vulgaris*)
 | (*Gadus morhus*) | *boscii*)
 | (*Merluccius merluccius*)
 .(Gomez-Guille' et al. 2002)
 () | (*Otolithes ruber*)

(Karim, Bhat, .
 .2009)

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Gelatin and Oil Extraction From Skin of Three Tuna Fish Species of Persian Gulf

J. Pazooki^{1*}, A. Rashid Alijani¹, D. Minaee Tehrani² and M.R. Shokri¹

¹ Department of Marine Biology, Faculty of Biological Sciences, Shahid Beheshti University G.C. Tehran, I.R. Iran

² Department of Microbiology, Faculty of Biological Sciences, Shahid Beheshti University G.C. Tehran, I.R. Iran

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Abstract

Tuna fishes are valuable in fisheries. A large amount of tuna fishes which are caught in Persian Gulf and Oman Sea are used for producing fish cans. A lot of skins, left after fish processing that have not any usages. In 1388, one Kg. skin of *Thunnus albacares*, *Thunnus tonggol* and *Katsuwonus pelamis* were frizzed and carried to laboratory. Investigations were held on skin sample for extracting oil and gelatin in three replicate. The average of oil and gelatin which were achieved from *Thunnus albacares* skin was 10.81%, 7.25%, from *Katsuwonus pelamis* was 16.73%, 12.09% and from *Thunnus tonggol* was 16.46%, 14.23% respectively. A significant difference has been seen between the oil and gelatin of *Thunnus albacares* and two other fishes. The gelatin, coagulated in 5°C after three hours as well as its solvent obtained in 70 °C, after 40 minutes. The amount of gelatin and oil which obtained from these three tuna fishes are significant. Due to some Physical and Chemical features of these two components, may be they can be used in food industry.

Keywords: Marine recourses, Tuna fish, Sea of Omman, Iran