



# HydroMediT 2021

4<sup>th</sup> International Congress on  
Applied Ichthyology, Oceanography  
& Aquatic Environment

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Virtual

**Assessing consumer attitudes towards the invasive Rayed Pearl  
Oyster *Pinctada imbricata radiata* (Leach 1814)**

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## Introduction

Atlantic rayed pearl oyster *Pinctada imbricata radiata* is a **non-indigenous species** (NIS) of Indo-Pacific origin.

In Greece the demand for shellfish products **has not increased**. On the other hand, the traditional Greek consumer's attitude has been **rapidly changing**, mainly due to **socio-economic** changes such as:

- Improvement of the standards of living
- Great expansion of media
- Promotion of biological products
- Development of the tourism industry, etc.

Has been reported in **Aegean** since mid-1960 and recently in **Ionian Sea**.

Is harvested for **edible** purposes, especially in the areas with **high natural stocks** availability (**Saronikos** and **Evoikos Gulf** (Aegean Sea)).

### Aim:

**The present study aims to investigate the consumers' preferences and attitudes on the purchase and consumption of the edible pearl oyster**



## Material and Methods

Specially designed questionnaire was distributed to randomly selected consumers throughout Greece during spring-summer 2020.

### Demographic questions:

- Sex
- Age
- Place of residence
- Educational level
- Profession
- Marital status
- Number of children

### Consumers attitude questions:

- Shellfish known and tried at least once
- Frequency and quantity of shellfish consumption
- Criteria of shellfish freshness
- Frequency of shellfish purchase by species
- Points of purchase
- Preferred pearl-oyster products
- Quantity of package preference
- Packaging material preference
- Announcements of the veterinary services



## Material and Methods

Data was statistically analyzed addressing variables of respondent's

- demographic status (residence and age)
- and socio-economic status (net monthly family disposable income and education level).

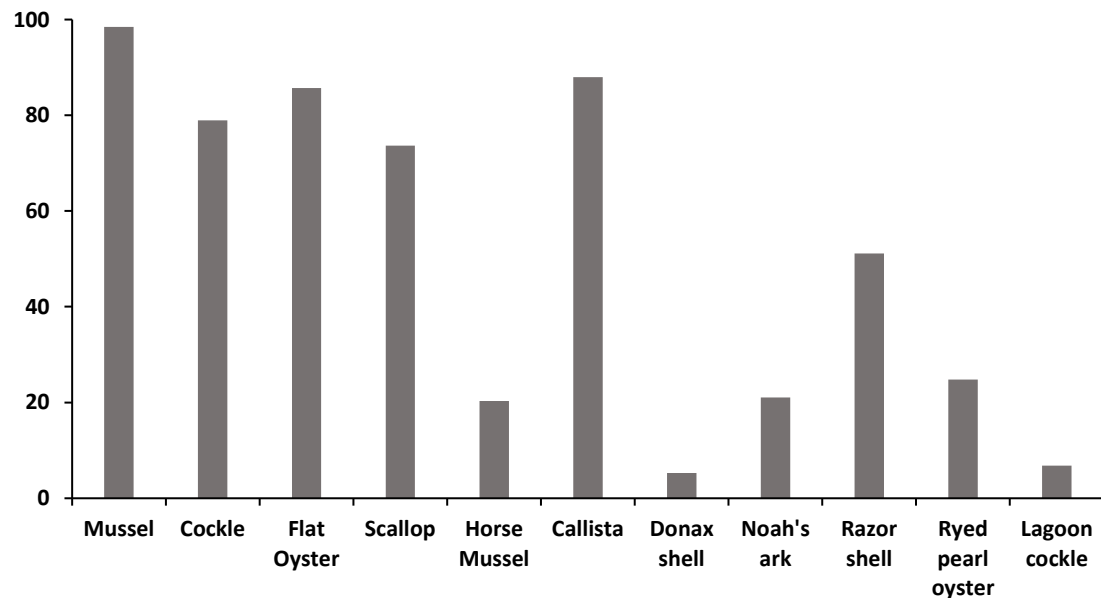
→ Chi-square ( $\chi^2$ ) procedure was used and a number of statistical tests of independence were performed

→ In case of significance, the Adjusted Standardized Residuals in the cross tabulation tables were carefully examined to detect departures from independence.

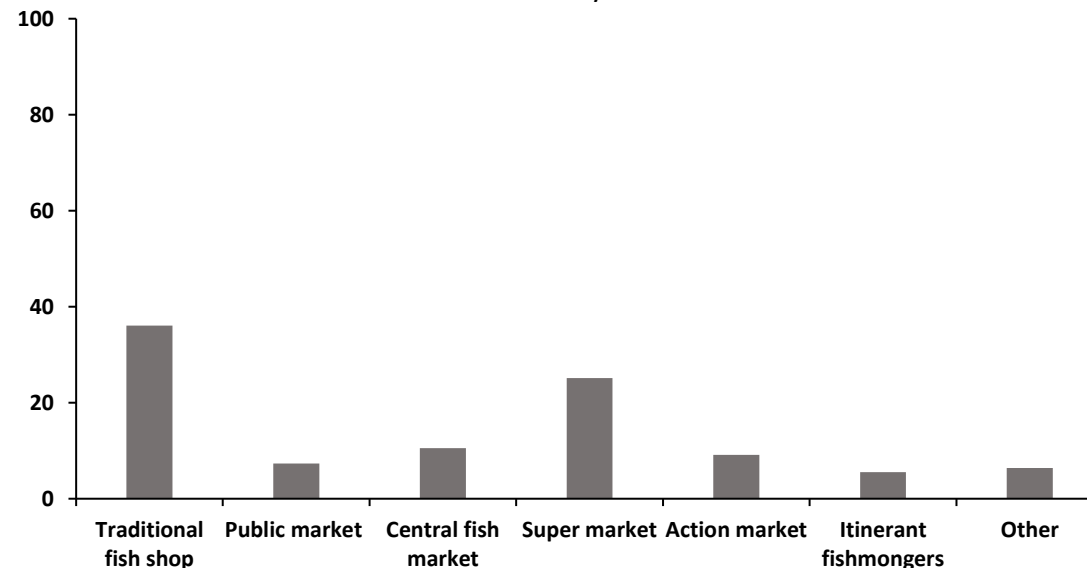


## Results

Which of the following types of shellfish do you know and which have you tried at least once?



From which of the following fish market places are you usually purchase shellfish for your household?

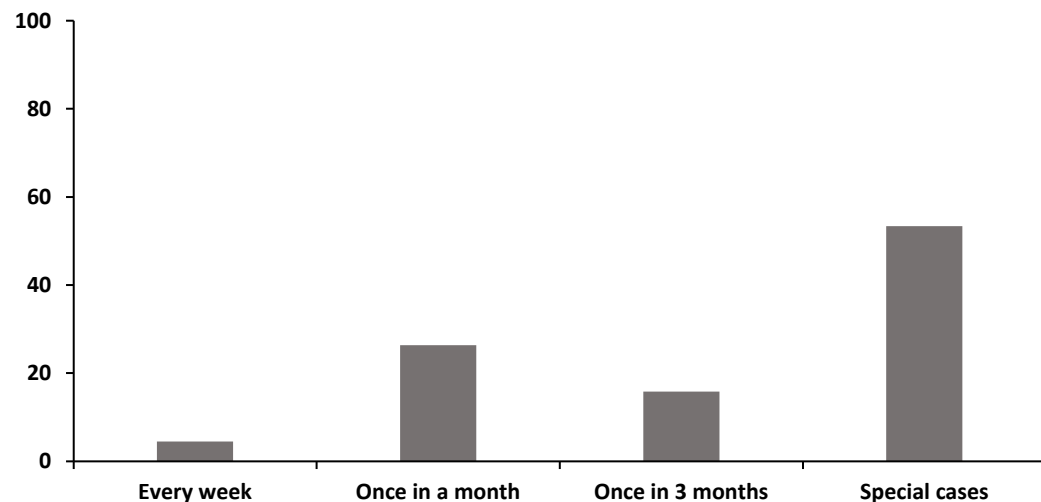


- Bivalve species were **more common** to consumers of **urban areas** than to other areas ( $\chi^2$ ,  $P < 0.05$ ).
- **Younger consumers** and those of **higher education level** seemed to know or have consumed shellfish in **higher percentages** compared to those of lower education ( $\chi^2$ ,  $P < 0.05$ ).

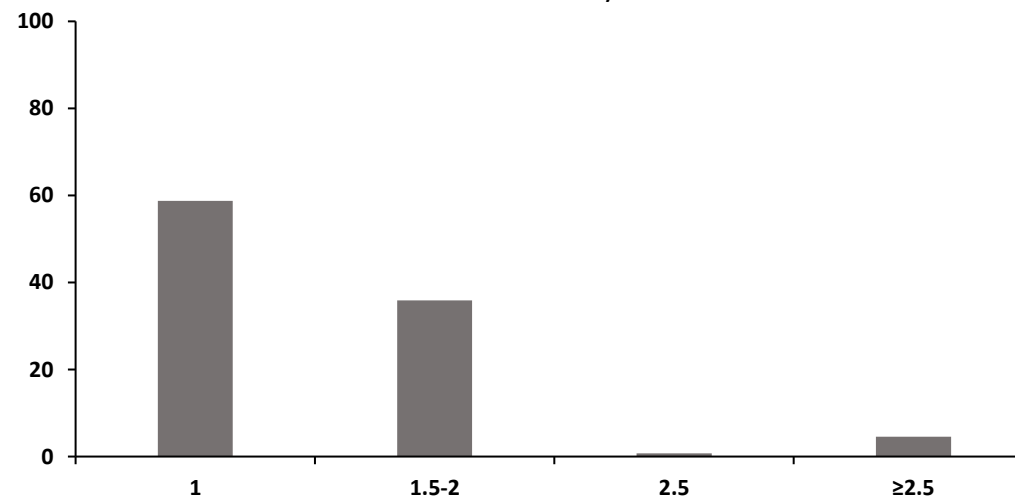


## Results

How often do you buy and consume shellfish in your family?



How much shellfish do you usually buy & consume for a meal of your family?



- **Significantly differed** ( $\chi^2$ ,  $P < 0.05$ ) with the place of residence.
- Consumers from **urban area** purchased significantly ( $\chi^2$ ,  $P < 0.05$ ) more often bivalves in their family than the consumers from **coastal and non-coastal areas**.



## Results

Sort by **preference** what you **examine** in shellfish in **terms of freshness** ((1) most preferred to (5) less preferred):

1. Odor
2. Shells (closed or not)
3. Expiration and shell removal date
4. Clarity of packaging water
5. Other

Which of the following **Atlantic pearl-oyster products** on the market **consumers would prefer** ((1) most preferred to (8) less preferred):

1. Fresh alive in bulk
2. Fresh alive, packed in net
3. Fresh alive in vacuum
4. Without shell, frozen
5. Without shell in jar with brine
6. Without shell in jar with olive oil and oregano
7. Without shell smoked in jar
8. Without shell breaded nuggets

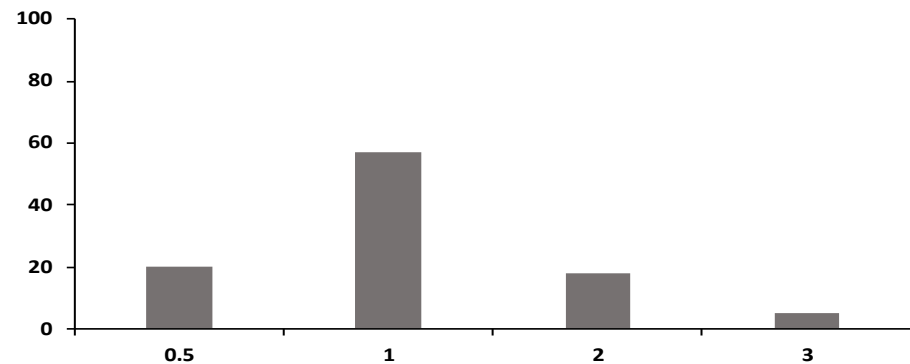
**Bivalves** that consumers prefer are :

- Mussels (Very Often)
- Cockles (Often)
- Oysters (Seldom)
- Calista (Seldom)
- Scallops (Seldom)
- Atlantic pearl-oysters (Never)
- Horse mussels (Never)

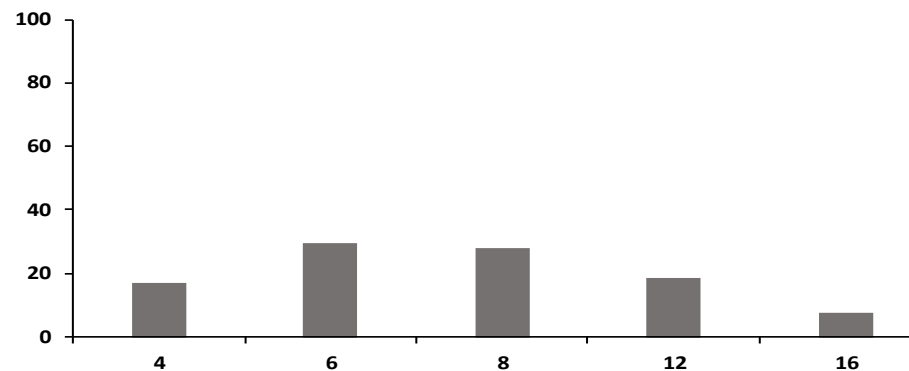


## Results

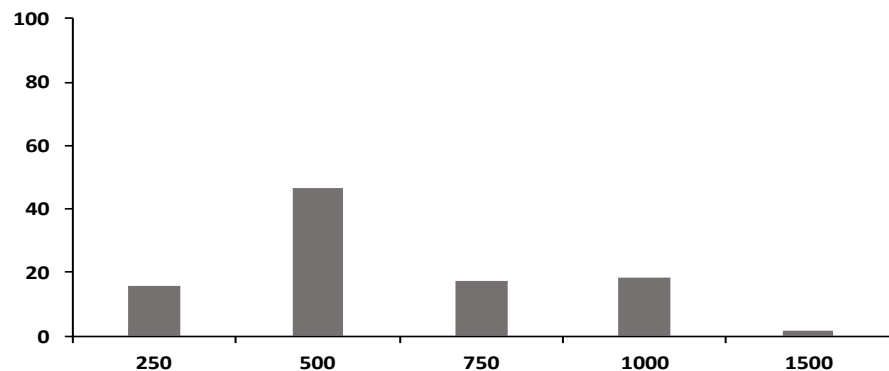
In case of choosing fresh alive in nets, what size of package would you like? (Kg)



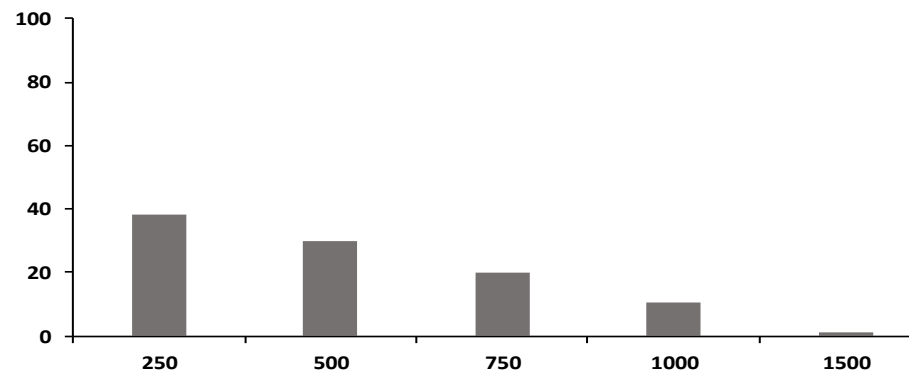
In case of choosing fresh alive in Vacuum, what quantity of packaging would you like? (Pcs)



In case of choosing without shell, frozen, what size of package would you like? ( g )



In case of choosing without shell breaded nuggets, what size of package would you like? ( g )

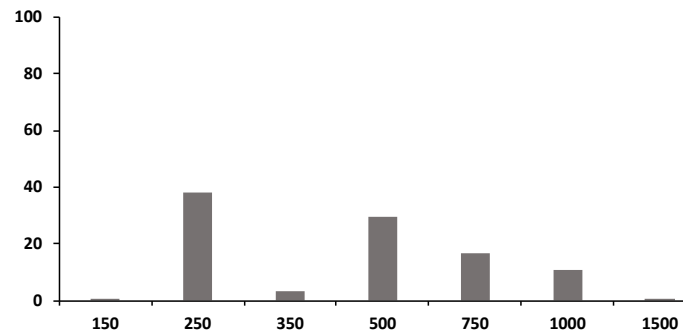




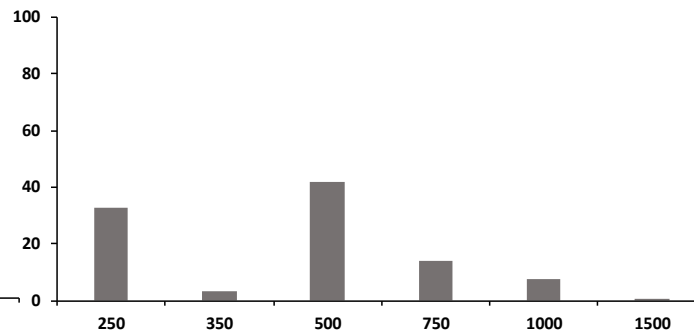


## Results

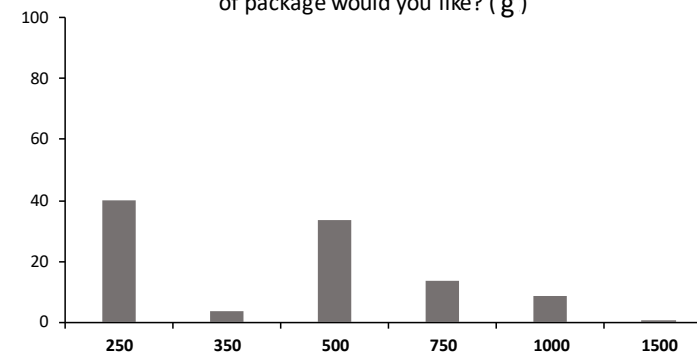
In case of choosing without shell in jar with brine, what size of package would you like? ( g )



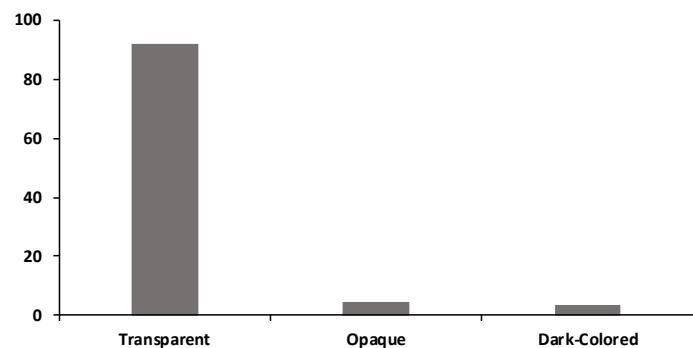
In case of choosing without shell in jar with olive oil and oregano, what size of package would you like? ( g )



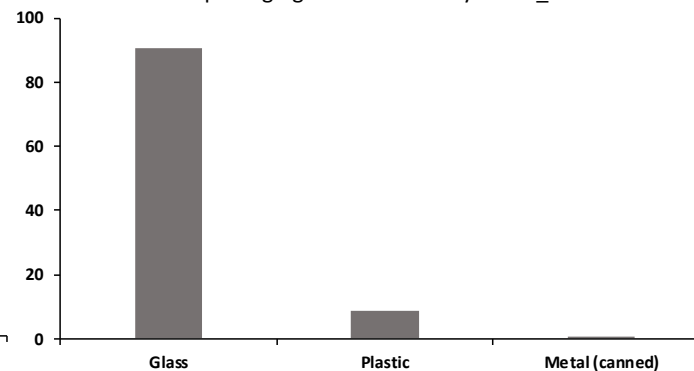
In case of choosing without shell smoked in jar, what size of package would you like? ( g )



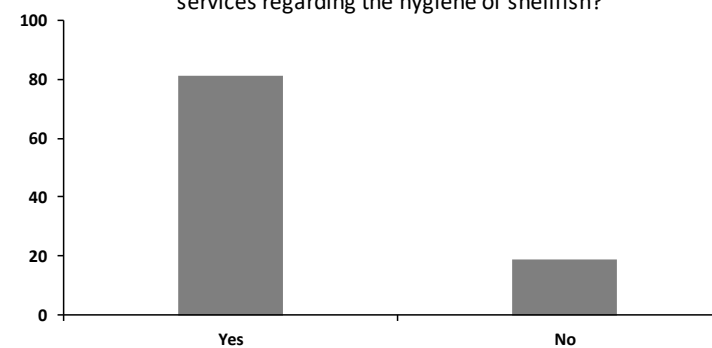
What packaging material would you like\_Container



What packaging material would you like\_Material



Do you trust or not the announcements of the veterinary services regarding the hygiene of shellfish?





## Discussion

- More than half of the respondents (66.6%) was from **urban areas**, which mirrors the spatial distribution of the Greek citizens.
- Consumers from **urban areas** seem much better informed, compared to those from other Greek areas on bivalves consumption.
- The most critical issues that they **examine** when purchase shellfish:
  1. “shellfish odor”
  2. “shells (closed or not)”
  - 3 “expiration and shell removal date”.

Greek consumers trust the confirmation provided by the **veterinary authorities**.

- **Health** is an issue **frequently mentioned** as a reason for specific food choices, such as consuming bivalves.

→ Prefer and consume **more frequently** and in **more quantities** bivalves in their family.

- There is a clear preference of buying shellfish from the **traditional fish shops**.

↓  
Are considered that are routinely inspected by veterinarians who issue a **certificate** on **shellfish sea origin, hygienic condition, freshness and quality**.



## Discussion

- The information dispersed by **the media on shellfish safety, strongly influences** the consumers' purchasing behavior.
  - Quite often **over-emphasize** the restriction advice given by the **veterinary authorities** and the consumers **question** the **shellfish hygiene** and their **safety status**.
  - This situation could be **changed** whether consumers were **properly educated** on shellfish **safety matters**.
- The vast majority of Greek consumers **purchase and taste mussels more** than pearl oysters.
  - More than half of the respondents stated that the **most preferred** pearl-oyster product was **“fresh alive in bulk”**.
  - They preferred a **“transparent container” or “glass material”** for the pearl-oyster packaging.

The findings of this study could prove to be quite helpful for Greek producers and marketers of shellfish in order to identify new business opportunities and plan more efficient marketing strategies, which in turn would promote shellfish consumption.



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Thank you!

Questions?

