Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Article Submission to Food Research

Rozirwan unsri <rozirwan@unsri.ac.id> 14 Agustus 2023 pukul 15.45
Kepada: foodresearch.my@outlook.com

Dear Editor-in-Chief
Prof. Dr. Son Radu – Food Research

Hereby I would like to submit the manuscript entitled “Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia” to the Food Research (FR).

This manuscript was not submitted or published to any other journal. The authors declare that all the authors approved that the paper to be submitted to FR. The authors declare that the article is original and is the work of the authors. The authors declare the novelty or the significance of results. All authors declare that they are not currently affiliated or sponsored by any organization with a direct economic interest in subject of the article. My co-authors have all contributed to this manuscript and approve of this submission.

Best regards

Corresponding author
Dr. Rozirwan, M.Sc

--
Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

3 lampiran

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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Article Submission to Food Research

Food Research <foodresearch.my@outlook.com> 16 Agustus 2023 pukul 01.25
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan

Thank you for your submission to Food Research.
To proceed kindly revise the manuscript according to the comments attached and revert to us at your earliest convenience
Adhering strictly to Food Research format is greatly appreciated.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Monday, 14 August, 2023 4:45 PM
To: foodresearch.my@outlook.com <foodresearch.my@outlook.com>
Subject: Article Submission to Food Research

[Kutipan teks disembunyikan]

Rozirwan_Manuscript_Food research.docx
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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Article Submission to Food Research

Rozirwan unsri <rozirwan@unsri.ac.id> 19 Agustus 2023 pukul 13.24
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor

Here, we would like to resubmit our revised article based on your comments .

Thank you
Warm regards
[Kutipan teks disembunyikan]

Revision_Rozirwan_Manuscript_Food research.docx
623K

Response to Reviewers

Reviewer #1	Response to Reviewer
Abstract	
Grammatically wrong. Please edit this section to make the sentence grammatically correct. "..is worried as it increased the….?	We have changed this sentence into "....is worrying as it increased the...."
Is this spelling correct?? "Sprektrophotometry"	We have changed this sentence into "spectrophotometry"
Rewrite in two sentences "Based on the results, the calcium content in fish bones of *P. canius* was 11.2%, 10.4%, and 9.3%, and phosphorus was 0.0238%, 0.0207%, and 0.0106%, while the calcium content in fish bones of *S. guttatus* was 13.3%, 10%, and 7.4%, and phosphorus was 0.0271%, 0.0224%, and 0.0116%"	We have changed this sentence into two sentence, "Based on the results, the calcium content in fish bones of *P. canius* was 11.2%, 10.4%, and 9.3%, and phosphorus was 0.0238%, 0.0207%, and 0.0106%. The calcium content in fish bones of *S. guttatus* was 13.3%, 10%, and 7.4%, and phosphorus was 0.0271%, 0.0224%, and 0.0116%."
Rewrite to "P=0.05 or"	We have rewrote to "P=0.05"
What do you mean?? How can this study be used as a natural source??? Rewrite in proper English! "this study can be used as a natural source"	We have fixed the sentence into "According to the World Health Organization's calcium and phosphorus standards, fish bones from these two species can be developed into natural hydroxyapatite that is useful for human needs"
Introduction	
Is this formula written correctly?? "(Ca10(PO4)6(OH)2"	We have rewrote the formula correctly into "$Ca_5HO_{13}P_3$"
Grammatically incorrect. Rewrite in proper English! "guttatus so that the results have the potential to be developed as a source of"	We have fixed the sentence into "Therefore, it is necessary to conduct a comparative study of calcium and phosphorus content in *P. canius* and *S. guttatus* fish bones as an effort to find natural hydroxyapatite."
Materials and Methods	
Rewrite in two shorter sentence for clarity! "The criteria for fresh fish samples, including red gills and scales, were not slimy, transparent, convex eyes, clear corneas, and	We have fixed the sentences into "Some criteria for fresh fish are red gills and scales, not slimy,

fishy smell (Issac et al., 2017), thereby obtaining fish bones that are in good condition to avoid other compounds from forming as a result of putrefaction (Faisal et al., 2020)."	transparent, convex eyes, clear eye corneas, and fishy smell (Issac et al., 2017). CC (Faisal et al., 2020)."
This information are better in the discussion! These are not methods/sampling??? "). The taste, health, quality, and freshness of fish encourage consumption (Tomić et al., 2016). It is assumed that the mineral content in the fish bones is still in good condition and has not decomposed (Kiczorowska et al., 2019)."	We have put the sentences into discussion.
Not listed in the Reference section? "White and Australian Centre for International Agricultural Research , (2013)"	We have changed this reference.
Grammatically incorrect. Rewrite in proper English "Identification of fish samples referred to (White and Australian Centre for International Agricultural Research , (2013). A sampling of fish in as many as three size categories, with a total of three fish in each category. P. canius species for big (>300 g), medium (150-250 g), and small (< 150 g). While the S. guttatus category is large (> 300 g), medium (150–200 g), and small (< 100 g)."	We have changed these sentences into "Identification of fish samples referred to (White and Australian Center for International Agricultural Research, (2013). There were 3 sizes of fish samples, namely large (>300 g), medium (150-250 g), and small (<150 g). Each size has three individuals."
Literature review NOT sampling?? Paragraph 3, Subs 2.1	We have moved this paragraph into discussion
Very confusing!! Please rewrite in proper English "Paragraph 2, Sub 2.2"	We have rewrote this parapraph into, "Sample destruction in this study refers to (Rozirwan et al., 2023c). Calcium deconstruction uses 1 g of sample and added 5 mL of HNO3, then left homogeneous for 1 hour at room temperature. The solution was heated on a hot plate stirrer at low temperature for 4 hours, then left for 12 hours. Then 0.4 mL of H2SO4 was added and heated on a hot plate for 1 hour. Next, add 2-3 drops of HClO4:HNO3 (2:1) mixture solution until the color turns light yellow. Next, the sample was removed, cooled, and added 2 mL of distilled water and 0.6 mL of HCl. Then, the solution was reheated for 15 minutes,

	then filtered through filter paper into a 100 mL volumetric flask. Phosphorus destruction using 2 g of sample prepared in Erlenmeyer. 1 N ammonium fluoride solution was made from 3.7 g ammonium fluoride solids and 100 mL H2O. 5 N HCl solution was made by dissolving 20 mL of concentrated HCl and 480 mL of H2O. Bray 1 solution was made by dissolving 30 mL of 1 N ammonium fluoride, 5 mL of 5 N HCl and H2O. The 5 N sulfuric acid solution was made from 140 mL of concentrated H2SO4 and 860 mL of H2O. Ammonium molybdate solution was made from 12 g ammonium molybdate and 250 mL H2O. Potassium antimonite tartarate solution was prepared from 1.298 g solids and 100 mL H2O. Ascorbic acid solution was made from 1 g of solids and added 200 mL of H2O. Finally, phosphate reagent was made by mixing the ingredients in each step, then adding H2O until it reached a volume of 2 L."
Write the formula correctly! "6Mo7O24.4H2O"	We have fixed it
Is this correct? 1,298 OR 1.298?	It is 1.298
Results	
Grammatically incorrect, please rewrite properly "3% HCl at 10.1%, 3% H3PO4 at 9.6%, and 3% CH3COOH at 9.3%."	We have rewrote these sentence
Already mentioned in materials and methods! "Analysis of calcium content was obtained by reading the atomic absorption spectrophotometer (AAS), and phosphorus content was obtained by reading the UV-Vis spectrophotometer."	We have fixed this sentence
Grammatically not good. Rewrite in proper English. "Paragraph 1, sub 3.2)	We have fixed these sentence into "The average calcium content in each size of *P. canius* fish were large (11.2%), medium

	(10.4%), and small (9.3%). Meanwhile, the calcium content in *S. guttatus* were large (13.3%), medium (10.0%), and small (7.4%). Phosphorus content in each size of *P. canius* fish were large size (0.0238%), medium size (0.0207%), and small size (0.0106%). Meanwhile, the phosphorus content of *S. guttatus* were large size (0.0271%), medium size (0.0224%), and small size (0.0116%)."
This is a very long sentence and the meaning are lost in translation!!! Please rewrite in shorter sentence for clarity purposes!! "Paragraph 3, Sub 3.3)	We have changed this sentence into, "Based on the results of the ANOVA test ($P < 0.05$), that fish size had a significant effect on the calcium and phosphorus content in the bones of *P. canius* and *S. guttatus*. Furthermore, LSD test showed significantly different calcium and phosphorus contents in each fish size."
Discussion	
Why is this reference written like this??? Not a scientific way of writing!! "(Fawole et al., 2007)"	We have fixed this citation into "Fawole et al. (2007).
Why you did not do it??? No need to suggest. "but further research is needed to obtain optimum using X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), and Fourier Transform Infrared Spectroscopy (FTIR)."	We have considered deleting this sentence

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Status of My Manuscript

2 pesan

Rozirwan unsri <rozirwan@unsri.ac.id> 6 Oktober 2023 pukul 09.25
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

I would like to inquire about the progress of my submitted manuscript entitled "Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia".
Manuscript ID FR-2023-278.

Thank you
Warm regards

--
Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Food Research <foodresearch.my@outlook.com> 6 Oktober 2023 pukul 10.59
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan

It is still under review.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Friday, 6 October, 2023 10:25 AM
To: Food Research <foodresearch.my@outlook.com>
Subject: Status of My Manuscript

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Manuscript ID: FR-2023-278

9 pesan

Food Research <foodresearch.my@outlook.com> 20 Agustus 2023 pukul 00.23
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

This message is to acknowledge receipt of the above manuscript that you submitted via email to Food Research. Your manuscript has been successfully checked-in. Please refer to the assigned manuscript ID number in any correspondence with the Food Research Editorial Office or with the editor.

Your paper will be reviewed by three or more reviewers assigned by the Food Research editorial board and final decision made by the editor will be informed by email in due course. Reviewers' suggestions and editor's comments will be then made available via email attached file. You can monitor the review process for your paper by emailing us on the "Status of my manuscript".

If your manuscript is accepted for publication, Food Research editorial office will contact you for the production of your manuscript.

Thank you very much for submitting your manuscript to Food Research.

Sincerely,

Son Radu, Ph.D.

Chief Editor

Email: foodresearch.my@outlook.com

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Saturday, 19 August, 2023 2:24 PM
To: Food Research <foodresearch.my@outlook.com>
Subject: Re: Article Submission to Food Research

Dear Editor

Here, we would like to resubmit our revised article based on your comments .

Thank you
Warm regards

Pada tanggal Rab, 16 Agu 2023 pukul 01.25 Food Research <foodresearch.my@outlook.com> menulis:

> Dear Dr. Rozirwan
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> Thank you for your submission to Food Research.

To proceed kindly revise the manuscript according to the comments attached and revert to us at your earliest convenience
Adhering strictly to Food Research format is greatly appreciated.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Monday, 14 August, 2023 4:45 PM
To: foodresearch.my@outlook.com <foodresearch.my@outlook.com>
Subject: Article Submission to Food Research

Dear Editor-in-Chief
Prof. Dr. Son Radu – Food Research

Hereby I would like to submit the manuscript entitled “Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia” to the Food Research (FR).

This manuscript was not submitted or published to any other journal. The authors declare that all the authors approved that the paper to be submitted to FR. The authors declare that the article is original and is the work of the authors. The authors declare the novelty or the significance of results. All authors declare that they are not currently affiliated or sponsored by any organization with a direct economic interest in subject of the article. My co-authors have all contributed to this manuscript and approve of this submission.

Best regards

Corresponding author
Dr. Rozirwan, M.Sc

--
Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

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Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Letter to Author FR-2023-278.pdf
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Food Research <foodresearch.my@outlook.com> 18 November 2023 pukul 14.53
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

Manuscript FR-2023-278 entitled " Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia " which you submitted to Food

Research, has been reviewed. The comments of the reviewer(s) are included in the attached file.

The reviewer(s) have recommended publication, but also suggest some revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript. Once the revised manuscript is prepared, please send it back to me for further processing.

Because we are trying to facilitate timely publication of manuscripts submitted to Food Research, your revised manuscript should be submitted before or by 13th January 2024. If it is not possible for you to submit your revision by this date, please let us know.

Once again, thank you for submitting your manuscript to Food Research and I look forward to receiving your revised manuscript.

Sincerely,

Son Radu, PhD
Chief Editor, Food Research
foodresearch.my@outlook.com

From: Food Research <foodresearch.my@outlook.com>
Sent: Sunday, 20 August, 2023 1:23 AM
To: Rozirwan unsri <rozirwan@unsri.ac.id>
Subject: Manuscript ID: FR-2023-278

[Kutipan teks disembunyikan]

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Rozirwan unsri <rozirwan@unsri.ac.id> 18 November 2023 pukul 15.28
Kepada: Nadila Nur Khotimah <nadilakhotimah1142@gmail.com>, Redho Yoga Nugroho <redhoyn.29@gmail.com>

[Kutipan teks disembunyikan]

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Rozirwan unsri <rozirwan@unsri.ac.id> 5 Desember 2023 pukul 23.36
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor

Here we would like to submit our revised manuscript based on the reviewer comments. We hope this improvement has been in accordance with the reviewer's suggestions.

Thank you

Best regards
[Kutipan teks disembunyikan]

2 lampiran

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Food Research <foodresearch.my@outlook.com> 14 Desember 2023 pukul 09.01
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

Please indicate revisions made using track change to facilitate the reviewing process.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Wednesday, 6 December, 2023 12:36 AM
To: Food Research <foodresearch.my@outlook.com>
Subject: Re: Manuscript ID: FR-2023-278

[Kutipan teks disembunyikan]

Rozirwan unsri <rozirwan@unsri.ac.id> 14 Desember 2023 pukul 09.32
Kepada: Nadila Nur Khotimah <nadilakhotimah1142@gmail.com>

---------- Forwarded message ---------
Dari: **Food Research** <foodresearch.my@outlook.com>
[Kutipan teks disembunyikan]
[Kutipan teks disembunyikan]

Rozirwan unsri <rozirwan@unsri.ac.id> 14 Desember 2023 pukul 09.32
Kepada: Redho Yoga Nugroho <redhoyn.29@gmail.com>

---------- Forwarded message ---------
Dari: **Food Research** <foodresearch.my@outlook.com>
Date: Kam, 14 Des 2023 09.01
[Kutipan teks disembunyikan]
[Kutipan teks disembunyikan]

Rozirwan unsri <rozirwan@unsri.ac.id> 17 Desember 2023 pukul 00.52
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

Hereby, we re-submit our revision article with the provision of track changes.

Thank you very much

Best regards
[Kutipan teks disembunyikan]

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2 lampiran

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Food Research <foodresearch.my@outlook.com> 6 Januari 2024 pukul 15.22
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

Thank you for the revised copy of your manuscript. We will contact you again for further processing.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Sunday, 17 December, 2023 1:52 AM
[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Manuscript ID: FR-2023-278

Food Research <foodresearch.my@outlook.com> 18 November 2023 pukul 14.53
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

Manuscript FR-2023-278 entitled " Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia " which you submitted to Food Research, has been reviewed. The comments of the reviewer(s) are included in the attached file.

The reviewer(s) have recommended publication, but also suggest some revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript. Once the revised manuscript is prepared, please send it back to me for further processing.

Because we are trying to facilitate timely publication of manuscripts submitted to Food Research, your revised manuscript should be submitted before or by 13th January 2024. If it is not possible for you to submit your revision by this date, please let us know.

Once again, thank you for submitting your manuscript to Food Research and I look forward to receiving your revised manuscript.

Sincerely,

Son Radu, PhD
Chief Editor, Food Research
foodresearch.my@outlook.com

From: Food Research <foodresearch.my@outlook.com>
Sent: Sunday, 20 August, 2023 1:23 AM
To: Rozirwan unsri <rozirwan@unsri.ac.id>
Subject: Manuscript ID: FR-2023-278

[Kutipan teks disembunyikan]

2 lampiran

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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Manuscript ID: FR-2023-278

Rozirwan unsri <rozirwan@unsri.ac.id> 5 Desember 2023 pukul 23.36
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor

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Best regards
[Kutipan teks disembunyikan]

2 lampiran

Response to Reviewers_FR-2023-278.docx
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2. Revision_Rozirwan_Manuscript_FR-2023-278.docx
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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Manuscript ID: FR-2023-278

Food Research <foodresearch.my@outlook.com> 14 Desember 2023 pukul 09.01
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

Please indicate revisions made using track change to facilitate the reviewing process.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Wednesday, 6 December, 2023 12:36 AM
To: Food Research <foodresearch.my@outlook.com>
Subject: Re: Manuscript ID: FR-2023-278

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Manuscript ID: FR-2023-278

Rozirwan unsri <rozirwan@unsri.ac.id> 17 Desember 2023 pukul 00.52
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

Hereby, we re-submit our revision article with the provision of track changes.

Thank you very much

Best regards
[Kutipan teks disembunyikan]

2 lampiran

Response to Reviewers_FR-2023-278.docx
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2. Revision_Rozirwan_Manuscript_Food research_Track Changes.docx
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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Manuscript ID: FR-2023-278

Food Research <foodresearch.my@outlook.com> 6 Januari 2024 pukul 15.22
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

Dear Dr. Rozirwan,

Thank you for the revised copy of your manuscript. We will contact you again for further processing.

Best regards,
Son Radu, PhD
Chief Editor

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Sunday, 17 December, 2023 1:52 AM
[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Status of My Manuscript

3 pesan

Rozirwan unsri <rozirwan@unsri.ac.id> 2 April 2024 pukul 10.58
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

I would like to inquire about the progress of my submitted manuscript entitled "Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia".
Manuscript ID FR-2023-278.

Thank you
Best regards

--
Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Food Research <foodresearch.my@outlook.com> 3 April 2024 pukul 23.25
Kepada: Rozirwan unsri <rozirwan@unsri.ac.id>

still pending

From: Rozirwan unsri <rozirwan@unsri.ac.id>
Sent: Tuesday, 2 April, 2024 11:58 AM
To: Food Research <foodresearch.my@outlook.com>
Subject: Status of My Manuscript

[Kutipan teks disembunyikan]

Rozirwan unsri <rozirwan@unsri.ac.id> 24 Mei 2024 pukul 23.39
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

After a few months ago we submitted our article, we would like to inquire about the progress of my submitted manuscript entitled "Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia".
Manuscript ID FR-2023-278.

Thank you
Best regards

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Status of My Manuscript

7 pesan

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 3 September 2024 pukul 09.04
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

After a few months ago we submitted our article, we would like to inquire about the progress of my submitted manuscript entitled "Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia". Manuscript ID FR-2023-278.

Thank you
Best regards

--
Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Food Research <foodresearch.my@outlook.com> 12 September 2024 pukul 21.50
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Dr. Roziwan,
Please edit your manuscript as many references in the Reference section were not provided with their Doi number or their URL.
Please check again the references cited in the manuscript to make sure that all references cited were listed under the Refeence section and vice versa.
Missing reference can cause the manuscript to be rejected due to incomplete information.
Please use the copy in attached file to do the editing.
Best regards,
Professor Dr. Son Radu
Chief Editor

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Tuesday, 3 September, 2024 10:04 AM
To: Food Research <foodresearch.my@outlook.com>
Subject: Status of My Manuscript

[Kutipan teks disembunyikan]

FR-2023-278 checked.docx
540K

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 13 September 2024 pukul 11.07
Kepada: Food Research <foodresearch.my@outlook.com>

Thank you, I will do that.
Best Regards

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 18 September 2024 pukul 14.12
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

We would like to submit our last revision article "Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia" Manuscript ID FR-2023-278. We have revised the references. Hopefully this revision will allow the article to be published soon.

Thank you
Regards

Pada Kam, 12 Sep 2024 pukul 21.50 Food Research <foodresearch.my@outlook.com> menulis:
[Kutipan teks disembunyikan]
[Kutipan teks disembunyikan]

3. Rev-FR-2023-278 checked.docx
547K

Food Research <foodresearch.my@outlook.com> 18 September 2024 pukul 23.59
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Rozirwan,
Please see attached files.

1. The Letter of Acceptance for your manuscript.
2. The Article Processing Charges (APC) Form. Please fill the APC Form at the INVOICE RECIPIENT section and return it immediately to us to enable us to process your manuscript.

Best Regards,
Professor Dr. Son Radu
Chief Editor

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Wednesday, 18 September, 2024 3:12 PM
To: Food Research <foodresearch.my@outlook.com>
Subject: Re: Status of My Manuscript

[Kutipan teks disembunyikan]

---

2 lampiran

FR Article Processing Fee Form FR-2023-278.docx
331K

FR-2023-278 Acceptance Letter.pdf
139K

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 19 September 2024 pukul 12.37
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,
The following is the INVOICE RECIPIENT information on our APC Form.

Thank you
[Kutipan teks disembunyikan]

INVOICE RECIPIENT_FR Article Processing Fee Form FR-2023-278.pdf
207K

Food Research <foodresearch.my@outlook.com> 19 September 2024 pukul 14.09
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Rozirwan,
Noted with thanks.
Best regards,
Son Radu
Chief Editor

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Thursday, 19 September, 2024 1:37 PM
[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

FOOD
RESEARCH

20th August 2023

Authors: Rozirwan., Khotimah, N.K., Putri, W.A.E., Fauziyah., Melki., Novianti, E., Iskandar, I., Mustopa, A.Z., Fatimah., and Nugroho, R.Y.

Manuscript title: Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia

Manuscript ID: FR-2023-278

Dear Dr. Rozirwan,

This message is to acknowledge receipt of the above manuscript that you submitted via email to Food Research. Your manuscript has been successfully checked-in. Please refer to the assigned manuscript ID number in any correspondence with the Food Research Editorial Office or with the editor.

Your paper will be reviewed by three or more reviewers assigned by the Food Research editorial board and final decision made by the editor will be informed by email in due course. Reviewers' suggestions and editor's comments will be then made available via email attached file. You can monitor the review process for your paper by emailing us on the "Status of my manuscript".

If your manuscript is accepted for publication, Food Research editorial office will contact you for the production of your manuscript.

Thank you very much for submitting your manuscript to Food Research.

Sincerely,

Son Radu, Ph.D.
Chief Editor
Email: foodresearch.my@outlook.com

FOOD
RESEARCH

FR/APC/19/9/2024

ARTICLE PROCESSING FEE FORM

Please note that all the manuscripts are subject to Article Processing Charges (APC).

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If the form is not received after five (5) working days without written notice, we will assume you have withdrawn your manuscript of your own accord.

No. of Journal Pages	Page Charge
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*The final number of pages of your paper in the journal will be determined by the Journal.

Once we have received the form, we will process your manuscript accordingly. We will send the galley proof for checking and approval when it is ready along with an invoice of the total APC. Authors are given the flexibility of editing and correcting the proof once (1). Changes/addition of data/results during this time are strictly prohibited. Subsequent editing and correcting of the proof will be charged USD 10/change.

CORRESPONDING AUTHOR INFORMATION			
Name	Rozirwan	**Manuscript ID**	FR-2023-278
Manuscript Title	Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia		
Authors	Rozirwan, Khotimah, N.K., Putri, W.A.E., Fauziyah, Melki, Iskandar, I. and Nugroho, R.Y.		

INVOICE RECIPIENT			
Name		**Salutation**	
Address			
Email			

Note: Any changes to the invoice recipient details are highly not encouraged.

FOOD
RESEARCH

19th September 2024

Dear Rozirwan,

ACCEPTANCE LETTER

Food Research is pleased to inform you that the following manuscript has been accepted for publication in Food Research journal.

Manuscript Title	:	Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia
Authors	:	Rozirwan, Khotimah, N.K., Putri, W.A.E., Fauziyah, Melki, Iskandar, I. and Nugroho, R.Y.

We thank you for your fine contribution to the Food Research journal and encourage you to submit other articles to the Journal.

Yours sincerely,

Professor Dr. Son Radu
Chief Editor
Food Research

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Status of My Manuscript

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 19 September 2024 pukul 12.37
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,
The following is the INVOICE RECIPIENT information on our APC Form.

Thank you
[Kutipan teks disembunyikan]

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207K

FOOD
RESEARCH

FR/APC/19/9/2024

ARTICLE PROCESSING FEE FORM

Please note that all the manuscripts are subject to Article Processing Charges (APC).

For us to proceed with the publication of your paper in our Journal, please complete the form by filling in the confirmed invoice recipient details and revert to the Editorial Office within five (5) working days from the date of the email.

If the form is not received after five (5) working days without written notice, we will assume you have withdrawn your manuscript of your own accord.

No. of Journal Pages	Page Charge
5 pages or under	USD 250
6^{th} to 8^{th} page	USD 60/page
9^{th} page and above	USD 70/page

*The final number of pages of your paper in the journal will be determined by the Journal.

Once we have received the form, we will process your manuscript accordingly. We will send the galley proof for checking and approval when it is ready along with an invoice of the total APC. Authors are given the flexibility of editing and correcting the proof once (1). Changes/addition of data/results during this time are strictly prohibited. Subsequent editing and correcting of the proof will be charged USD 10/change.

CORRESPONDING AUTHOR INFORMATION			
Name	Rozirwan	**Manuscript ID**	FR-2023-278
Manuscript Title	Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia		
Authors	Rozirwan, Khotimah, N.K., Putri, W.A.E., Fauziyah, Melki, Iskandar, I. and Nugroho, R.Y.		

INVOICE RECIPIENT			
Name	Rozirwan	**Salutation**	Dr
Address	Griya Sejahtera Blok AA03, Lorong Sejahtera 4, Indralaya Utara, Ogan Ilir, Provinsi Sumatera Selatan, INDONESIA		
Email	rozirwan@unsri.ac.id		

Note: Any changes to the invoice recipient details are highly not encouraged.

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Status of My Manuscript

Food Research <foodresearch.my@outlook.com> 19 September 2024 pukul 14.09
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Rozirwan,
Noted with thanks.
Best regards,
Son Radu
Chief Editor

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Thursday, 19 September, 2024 1:37 PM
[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Inquiry Regarding Article Publication Schedule

8 pesan

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 18 Desember 2024 pukul 10.31
Kepada: Food Research <foodresearch.my@outlook.com>

Dear Editor,

We are the authors of the article titled "Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia". Manuscript ID FR-2023-278. The article has been accepted for publication and the APC payment was completed.

We are writing to kindly inquire about the estimated publication schedule for our article. We understand that the publication process may take time, but we would greatly appreciate it if you could provide an approximate timeline for when the article will be published.

Thank you for your attention and for all the efforts of the editorial team in processing our article. Please let us know if there is any additional information you may require.

Best regards
--
Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Food Research Production <fr.production@outlook.com> 20 Desember 2024 pukul 14.16
Kepada: "rozirwan@unsri.ac.id" <rozirwan@unsri.ac.id>

Dear Dr Rozirwan

Thank you for your email.
It is expected to be published in the next issue or Mar- Apr 2024 issue.

Thanks & Regards,
Dr Vivian New, PhD
Editor | Food Research
Email: fr.production@outlook.com
Website: www.myfoodresearch.com

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Wednesday, 18 December, 2024 11:31 AM
To: Food Research <foodresearch.my@outlook.com>
Subject: Inquiry Regarding Article Publication Schedule

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 13 Maret 2025 pukul 21.50
Kepada: Food Research Production <fr.production@outlook.com>

Dear Dr. Vivian New,

We follow up on the publication schedule of our article titled *"Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia" (Manuscript ID FR-2023-278)*.

In your previous email, you mentioned that the article is expected to be published in the next issue or in the March-April 2024 issue. Could you kindly confirm whether it will be published this month or in April? We would greatly appreciate any updates regarding the timeline.

Thank you for your time and assistance. I look forward to your response.

Best regards,

[Kutipan teks disembunyikan]

--
Prof. Dr. Rozirwan
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Food Research Production <fr.production@outlook.com> 14 Maret 2025 pukul 12.47
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Dr Rozirwan

In April.

Thanks & Regards,
Dr Vivian New, PhD
Editor | Food Research
Email: fr.production@outlook.com
Website: www.myfoodresearch.com

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Thursday, 13 March, 2025 10:50 PM
To: Food Research Production <fr.production@outlook.com>
Subject: Re: Inquiry Regarding Article Publication Schedule

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 14 Maret 2025 pukul 12.54
Kepada: Food Research Production <fr.production@outlook.com>

Thank you for your information.
[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 30 April 2025 pukul 10.54
Kepada: Food Research Production <fr.production@outlook.com>

Dear Dr. Vivian New,

I am writing to kindly follow up regarding the publication status of our article titled *"Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch & Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia"* (Manuscript ID FR-2023-278).

In your previous response, you mentioned that the article would be published in April. As the month is now coming to an end, we would sincerely appreciate any updates you could provide regarding the publication timeline.

Thank you very much for your continued assistance and kind support. We truly appreciate your time and consideration.

[Kutipan teks disembunyikan]

--

Prof. Dr. Rozirwan, S.Pi., M.Sc
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

Food Research Production <fr.production@outlook.com> 30 April 2025 pukul 12.32
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Dr Rozirwan

It will be published in the next month, June 2025 issue.

Thanks & Regards,
Dr Vivian New, PhD
Editor | Food Research
Email: fr.production@outlook.com
Website: www.myfoodresearch.com

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Wednesday, 30 April, 2025 11:54 AM

[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 30 April 2025 pukul 14.44
Kepada: Food Research Production <fr.production@outlook.com>

Thank you for your information.
Regards

Prof. Dr. Rozirwan, S.Pi., M.Sc
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

FR-2023-278 - Article Production

Food Research Production <fr.production@outlook.com> 1 Mei 2025 pukul 15.36
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Dr Rozirwan,

Manuscript ID: FR-2023-278
Manuscript Title: Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia

Before we can proceed with the article production, I would like to clarify a few points that I have commented in the manuscript. Please refer to the attachment. Please address the issues raised in the comments.

Please use the attached copy to make your revisions as it has been corrected to the Journal's format. Do not delete the comments. Once you have done so, kindly revert the copy to me as soon as possible. Please note that the faster you respond, the quicker we will process your manuscript.

Thanks & Regards,
Dr Vivian New, PhD
Editor | Food Research
Email: fr.production@outlook.com
Website: www.myfoodresearch.com

FR-2023-278 checked +.docx
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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

FR-2023-278 - Article Production

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 1 Mei 2025 pukul 21.14
Kepada: Food Research Production <fr.production@outlook.com>

Dear Dr. Vivian New,

Thank you very much for your kind guidance and comments on our manuscript entitled *"Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia"*, with manuscript ID: FR-2023-278.

We have carefully addressed all the comments and suggestions provided, including the clarification regarding references with the same lead author and publication year. These have now been appropriately marked both in the main text and the reference list. All other necessary corrections have also been made following the journal's format.

Please find the revised manuscript attached for your kind consideration. We hope this version meets the requirements and can be processed for publication soon.

Best regards

[Kutipan teks disembunyikan]

--
Prof. Dr. Rozirwan, S.Pi., M.Sc
Head of Marine Bioecology Laboratory
Department of Marine Science
Faculty of Mathematics and Natural Sciences
Sriwijaya University
Jalan Raya Palembang-Prabumulih KM 32, Indralaya
Ogan Ilir, Sumatera Selatan, Indonesia, Pos Code: 30862
Email: rozirwan@unsri.ac.id, rozirwan@gmail.com

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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

FR-2023-278 - Article Production

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 1 Juni 2025 pukul 16.04
Kepada: Food Research Production <fr.production@outlook.com>

Dear Dr. Vivian New,

Thank you for your email and for providing the galley proof and invoice for our manuscript FR-2023-278 entitled *"Natural sources of calcium and phosphorus in fish bones of Plotosus canius (Hamilton, 1822) and Scomberomorus guttatus (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia."*

We have carefully reviewed the galley proof and made several corrections directly on the PDF as per your instructions. Please find attached the revised galley proof for your further processing.

Additionally, we have completed the payment for the publication, and the proof of payment is also attached to this email.

We kindly hope that the publication process can proceed smoothly and that the manuscript will be published at your earliest convenience.

Thank you very much for your assistance.

Best regards,

[Kutipan teks disembunyikan]

2 lampiran

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Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

FR-2023-278 - Article Production

Food Research Production <fr.production@outlook.com> 1 Juni 2025 pukul 16.21
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Dr Rozirwan

Thank you for the payment.
There are no changes made to the galley proof.

1. References with the same lead author who published in the same year, but different group of authors, are cited as in the original galley proof. This follows the journal's typesetting format.
2. Hour is abbreviated as hr. Hours are abbreviated as hrs.

Please confirm that you approve the galley proof.

Thanks & Regards,
Dr Vivian New, PhD
Editor | Food Research
Email: fr.production@outlook.com
Website: www.myfoodresearch.com

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Sunday, 1 June, 2025 17:04
[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

Local Resources

June 1, 2025 . Payment Sent

−US$404.99

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Transaction ID

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Contact information

Rynnye Lyan Resources
Message
foodresearch.my@outlook.com

Notes

Publication Fee Rozirwan el. al 2025 Natural sources of calcium and phosphorus in fish bones of . . .

Details

Sent to Rynnye Lyan Resources	US$400.00
Cost	**US$4.99**
Total	**US$404.99**

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

FR-2023-278 - Article Production

Food Research Production <fr.production@outlook.com> 1 Juni 2025 pukul 16.30
Kepada: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

Dear Dr Rozirwan,

Thank you very much for the confirmation. I'll notify you of the article's publication soon.

Thanks & Regards,
Dr Vivian New, PhD
Editor | Food Research
Email: fr.production@outlook.com
Website: www.myfoodresearch.com

From: Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>
Sent: Sunday, 1 June, 2025 17:29
[Kutipan teks disembunyikan]

[Kutipan teks disembunyikan]

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id>

FR-2023-278 - Article Production

Rozirwan ROZIRWAN <rozirwan@unsri.ac.id> 1 Juli 2025 pukul 18.49
Kepada: Food Research Production <fr.production@outlook.com>

Dear Dr. Vivian New,

We would like to kindly ask if there is any update regarding the publication schedule of our article. We are looking forward to seeing it published and would be grateful for any information you could provide. Thank you again for your support and kind assistance.

Best regards
[Kutipan teks disembunyikan]

Food Research 9 (4) : 1 - 9 (August 2025)
Journal homepage: https://www.myfoodresearch.com

FOOD RESEARCH

RESEARCH PAPER

Natural sources of calcium and phosphorus in fish bones of *Plotosus canius* (Hamilton, 1822) and *Scomberomorus guttatus* (Bloch and Schneider, 1801) obtained from Banyuasin waters, South Sumatra, Indonesia

[1,*]Rozirwan, [2]Khotimah, N.K., [1]Putri, W.A.E., [1]Fauziyah, [1]Melki, [3]Iskandar, I. and [1]Nugroho, R.Y.

[1]*Department of Marine Science, Faculty of Mathematics and Natural Sciences, Universitas Sriwijaya, Indralaya 30862, South Sumatra, Indonesia*
[2]*Environmental Management Study Program, Graduate Program, Universitas Sriwijaya, Palembang 30139, Indonesia*
[3]*Department of Physics, Faculty of Math and Natural Science, Sriwijaya University, Indralaya, South Sumatra, Indonesia, 30862*

Article history:
Received: 2 August 2023
Received in revised form: 17 December 2023
Accepted: 27 November 2024
Available Online: 2 July 2025

Keywords:
Calcium,
Fish bones,
Plotosus canius,
Phosphorus,
Scomberomorus guttatus,
Size categories

DOI:
https://doi.org/10.26656/fr.2017.9(4).278

Abstract

The fish meat production of *Plotosus canius* and *Scomberomorus guttatus* as a food source is worrying, as it increases the volume of bone waste, which damages the environment. This work aimed to determine the calcium and phosphorus content in fish bones of different species and size categories. Samples were collected from the coastal Banyuasin, South Sumatra. The samples were classified into three size categories: large (> 300 g), medium (150-250 g), and small (100 g). All trials were based on absorbance measurements using atomic absorption spectroscopy (calcium) and spectrophotometry UV -Vis (phosphorus). The statistical analysis used ANOVA, least significant difference (LSD), and independent sample T-test. Based on the results, the calcium content in fish bones of *P. canius* was 11.2%, 10.4%, and 9.3%, and phosphorus was 0.0238%, 0.0207%, and 0.0106%. The calcium content in fish bones of *S. guttatus* was 13.3%, 10%, and 7.4%, and phosphorus was 0.0271%, 0.0224%, and 0.0116%. The ANOVA results stated that the sample category had a real effect on calcium and phosphorus content (P = 0.05), followed by the results of the LSD test for each category were different, and the independent sample T-test Sig. (2-tailed) value exceeded 0.05, showing that there was no average difference in each fish bone. Fish bones of *P. canius* had a greater calcium content than *S. guttatus*, while *S. guttatus* had a greater phosphorus content than *P. canius*. According to the World Health Organization's calcium and phosphorus standards, fish bones from these two species can be developed into natural hydroxyapatite that is useful for human needs.

1. Introduction

Banyuasin coastal waters have a high potential for fishery products from the pisces, cephalopods, gastropods, and bivalves' classes (Rozirwan, Fauziyah, Nugroho *et al*., 2022; Rozirwan, Ramadani, Putri *et al*., 2023). Coastal people utilize fishery products as a source of livelihood to increase economic growth (Saputra *et al*., 2021). The rapid development of the industry in the field of processing fishery products has the potential to cause an increase in waste (Afreen and Ucak, 2020). The existence of this waste causes the formation of a decomposition process by sulfuric acid (H_2S), ammonia (NH_3), methane (CH_4), and CO_2, causing an unpleasant odor (Dewita *et al*., 2021). In addition, waste can lead to long-term degradation of the aquatic environment, potentially threatening the food security of coastal communities (Almaniar *et al*., 2021). The problem of fish waste has grown and has become a global concern in recent years. As much as 75% of fish biomass, including bones, heads, offal, skin, and fins, is not consumed because it requires further processing (Metwally *et al*., 2021). Fish bones can be used as raw materials to produce value-added compounds in various sectors, including agrochemical, biomedical, food, and pharmaceutical (Hlordzi *et al*., 2022). Fish bones as a source of calcium phosphate (CaP) ceramics have become the focus of many research studies because of their potential to produce quality biotechnological

*Corresponding author.
Email: *rozirwan@unsri.ac.id*

eISSN: 2550-2166
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materials (Boutinguiza *et al*., 2012). Fish bones are a complex substance made of carbonated HAP, type-1 collagen, non-collagenous protein, and water (Ma *et al*., 2021). Calcium-phosphorus (Ca-P) based compounds are among the most widely used biomaterials for bone substitution (Corrêa and Holanda, 2019).

Calcium and phosphorus are essential minerals involved in key physiological functions, including metabolism, muscle contraction, and the formation of bones, scales, ATP, cell membranes, and nucleic acids (Manz *et al*., 2023). Chemical analysis revealed that fish bones are a valuable calcium phosphate source as an economical source for synthesizing hydroxyapatite (Pon-On *et al*., 2016). Bone is a biological composite consisting of an inorganic phase (calcium phosphate with a structure like carbonated hydroxyapatite) (Harvey *et al*., 2021). In general, hydroxyapatite ($Ca_5HO_{13}P_3$) is a mineral of calcium phosphate, is a significant component of bone, and can be used as a material for bone regeneration (Lee *et al*., 2021). Natural hydroxyapatite can be easily obtained from natural sources such as cow bones, pork bones, and fish bones (Prado *et al*., 2021). Research has shown that calcium and phosphorus in pelagic fish bones have potential as natural hydroxyapatite for bone repair and replacement (Prado *et al*., 2021). However, comparative data on calcium and phosphorus content in fish species with differing morphology, physiology, and habitat remain limited. Therefore, this study aims to compare the bone mineral content of *P. canius* and *S. guttatus* to evaluate their potential as sources of natural hydroxyapatite.

2. Materials and methods

2.1 Samples

Fish samples of *P. canius* and *S. guttatus* were obtained from fish collectors in Sungsang Village, Banyuasin, South Sumatra (Figure 1). Banyuasin waters are known as a major fishing area (Rozirwan, Fauziyah, Wulandari *et al*., 2022). Some criteria for fresh fish are red gills and scales, not slimy, transparent, convex eyes, clear eye corneas, and fishy smell (Issac *et al*., 2017). Identification of fish samples referred to White *et al*., (2013). There were 3 sizes of fish samples, namely large (>300 g), medium (150-250 g), and small (<150 g). Each size has three individuals.

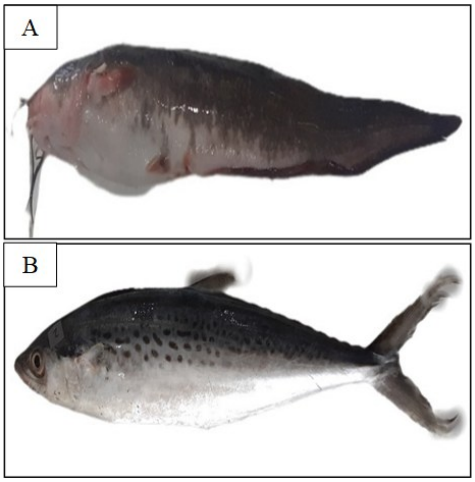

Figure 1. Fish morphology (A) *P. canius* (2) *S. guttatus*.

2.2 Sample preparation and destruction

The separation of fish bones from other organs of the body for further processing involves boiling fish bones at a temperature of 100°C for 1 hr to remove organic substances, blood, and meat attached (Boutinguiza *et al*., 2012). Then proceed with the alkaline extraction process with NaOH 1.5 N for 2 hrs by soaking at 60°C to remove protein, fat, and blood (Pon-On *et al*., 2016). After this, the fishbone samples were rinsed with distilled water and running water to neutralize the pH of the fish bones (Atma *et al*., 2018). The fish bones were dried in an oven at 65°C for 48 hrs to reduce the water content and were ground with a porcelain mortar and pestle (Sumarto *et al*., 2021). The preparation aimed to minimize the presence of impurities that would interfere with the analysis process by eliminating components other than the analyte (Rozirwan, Hananda, Nugroho *et al*., 2023). For calcium digestion, 1 g of the sample was mixed with 5 mL HNO_3, left at room temperature for 1 hr, then heated for 4 hrs and left overnight. Next, 0.4 mL H_2SO_4 was added and reheated for 1 hr. A few drops of $HClO_4$:HNO_3 (2:1) were added until the solution turned light yellow. The sample was cooled, mixed with 2 mL distilled water and 0.6 mL HCl, reheated for 15 minutes, then filtered into a 100 mL volumetric flask. For phosphorus digestion, 2 g of the sample was treated with Bray I extractant (30 mL 1 N ammonium fluoride and 5 mL 5 N HCl). The phosphate reagent was prepared by mixing ammonium molybdate, potassium antimonyl tartrate, ascorbic acid, and 5 N H_2SO_4, then diluted to 2 L with distilled water.

2.3 Determination of yield value

The fish bones sample that had been powdered was calculated for the yield value to determine the percentage ratio of the dry weight of fish bones (powder) to the wet weight of bones raw material. Yield was calculated based on the formula referring to Association of Official Analytical Collaboration International (1995).

2.4 Absorbance measurement of calcium and phosphorus content

Calcium content was measured using atomic absorption spectrophotometry (AAS) at a wavelength of 422.7 nm (Supriadi *et al*., 2021). Phosphorus was analyzed using a UV-Vis spectrophotometer by measuring light absorption in the UV (180–380 nm) or

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visible (380–780 nm) range (Pratiwi *et al*., 2022).

2.5 Statistical analysis

A one-way ANOVA was used to evaluate differences among group means for more than two samples, followed by the LSD test to identify specific differences (Rozirwan, Ramadani, Putri *et al*., 2023). For comparisons between two groups, an independent samples t-test was applied. A p-value below 0.05 showed a significant difference. Analyses were conducted using IBM SPSS Statistics v26.

3. Results and discussion

3.1 Yield value

The variation in yield values reflects the quantity of product obtained, indicating the efficiency of the extraction procedures applied (Figure 2). The results of yield value in each process through extraction with NaOH to remove fat, blood, and protein from the bone. Based on previous research Zainol *et al*., (2019), the extraction of fish scales with 5 N NaOH produced a yield value of 68%. However, after sintering at 1200°C, the yield was only 36%. The reduction in weight after sintering was probably due to the loss of organic residues in the fish scales after the alkaline treatment. Fishbone extraction can be used with several variations of 3% HCl at 10.1%, 3% H_3PO_4 at 9.6%, and 3% CH_3COOH at 9.3%. The higher the concentration of the acid solvent used, the resulting extraction will have an increased degree of acidity (Aisman *et al*., 2022). The difference in yield values produced can be caused by the method, solution concentration to remove non-collagen protein,

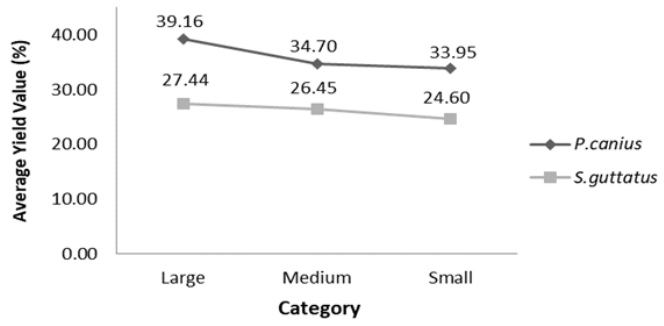

Figure 2. Average yield value in bones of *P. canius* and *S. guttatus.*

type of material, temperature, and production time (Wijaya and Junianto, 2021).

The yield values obtained in this study may reflect the quality of the bone meal produced from both fish species. A higher yield is generally associated with better flour quality. Fish bone meal is a solid product derived by removing most of the water content and a portion or all of the fat from fish bones (Ma *et al*., 2021). Fish meal could be used as the main component of aquaculture feed, which contains many nutrients such as protein, essential amino acids, omega-3 fatty acids, attractants, vitamins, and minerals (Hlordzi *et al*., 2022). The calculation of yield values was carried out to determine the success rate of food production. The higher the success of the production process, the better the quality of production and the more valuable the products become in various fields of fisheries (Atma *et al*., 2018).

Plotosus canius was classified as a demersal fish that prefers marine and brackish water habitats and is primarily found in estuaries, rivers, lagoons, and shallow waters (Prithiviraj and Annadurai, 2012). Mangrove forest waters have many *P. canius* fish for appropriate foraging, spawning, and enlargement (Rozirwan, Nugorho, Hendri *et al*., 2022; Rozirwan, Muhtadi, Ulqodry *et al*., 2023). *Scomberomorus guttatus* is a pelagic fish species typically found in muddy coastal waters, with a distribution range extending to depths of up to 50 meters (Al-Husaini *et al*., 2021). The distribution of pelagic fish is influenced by the environment, and pelagic fish tend to migrate to fertile seas (Welliken *et al*., 2021). Morphological observations were carried out on *P. canius*, in which the antennae functioned as a tactile tool to find food (Chakraborty and Yardi, 2020). The second dorsal fin is located on a vertical line between the anal and pelvic fins, and the tail type is pointed, has a dark brown color, no scales, and is slimy (Asriyana *et al*., 2020). *Scomberomorus guttatus* had a torpedo body shape, smooth skin, no scales, a select mouth type, and a semicircular tail type (Hakim *et al*., 2020).

3.2 Calcium and phosphorus content

The average calcium content in *P. canius* was 11.2%, 10.4%, and 9.3% for large, medium, and small sizes, respectively, while in *S. guttatus* it was 13.3%, 10.0%, and 7.4% for the corresponding size categories (Figure 3). Phosphorus content in *P. canius* was

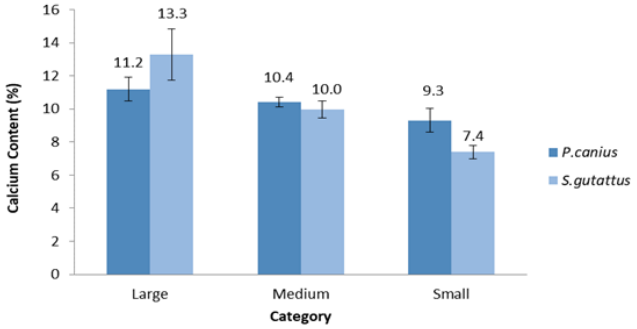

Figure 3. Calcium content in bones of *P. canius* and *S. guttatus.*

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Table 1. The mineral content of some fish species from previous studies.

Categories	Species	Part of body fish	Mineral content	References
Freshwater fish	*Oncorhynchus mykiss*	Meat	Ca (0.21±0.17 g·kg^{-1}), P (2.26±0.14 g·kg^{-1})	Kiczorowska *et al*. (2019)
	O. mossambicus	Meat	Ca (1.62±0.02%) P (1.21±0.06%)	Ullah *et al*. (2022)
	P. paradiseus	Whole fish	Ca (1.67±0.03%) P (1.21±0.03%)	
	Cyprinus carpio	Meat and skin	Ca (1232.98±31.62 mg/100 g), P (4767.49±47.16 mg/100 g)	Manz *et al*. (2023)
Sea and ocean fish	*Trachurus capensis*	Meat	Ca (62.47 mg), Mg (46.98 mg)	Maulu *et al*. (2021)
	Capros aper	Muscle	Ca (5073.6±163.2 mg/kg), P (3952.5±110.5 mg/kg)	Pinto *et al*. (2022)
	Neoepinnula orientalis	Whole fish ex.scales	Ca (4247±16 mg.kg^{-1}), Mg (2253±21 mg.kg^{-1})	Vijayan *et al*. (2016)
	Sparus aurata	Bones	Ca (9.23±0.34 mg/g), Mg (0.33±0.06 mg/g)	Kandyliari *et al*. (2020)
	Argyrosomus regius	Bones	Ca (6.93±0.93 mg/g), Mg (0.67±0.013 mg/g)	
	Sardinella maderensis	Meat and skin	Ca (1364.47±36.24 mg/100 g), P (2170.09±15.26 mg/100 g)	Manz *et al*. (2023)
	Scomber scombrus	Bones	Ca (143 g/kg), P (86 g/kg)	Toppe *et al*. (2007)
	Clupea harengus	Bones	Ca (197 g/kg), P (95 g/kg)	
	Gadus morhua	Bones	Ca (190 g/kg), P (113 g/kg)	
Brackish water fish	*Scatophagus argus*	Whole body ex. scales and intestines	Ca (4247±16 mg.kg^{-1}), Mg (1415±25 mg.kg^{-1})	Vijayan *et al*. (2016)
	Ilisha africana	Meat and skin	Ca (462.78±34.85 mg/100 g), P (2548.32±57.96 mg/100 g)	Manz *et al*. (2023)
	Ethmalosa fimbriata	Meat and skin	Ca (468.05±21.15 mg/100 g), P (1569.43±86.57 mg/100 g)	

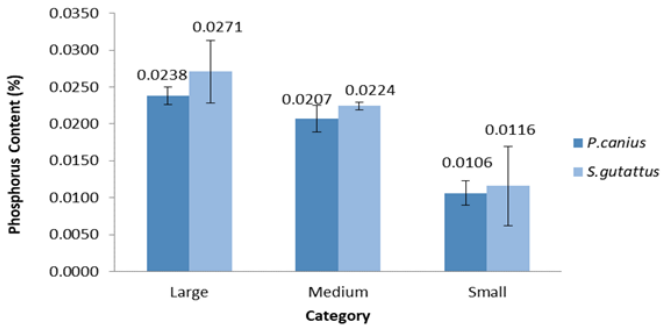

Figure 4. Phosphorus content in bones of *P. canius* and *S. guttatus*.

0.0238%, 0.0207%, and 0.0106% for large, medium, and small sizes, respectively, while in *S. guttatus* it was 0.0271%, 0.0224%, and 0.0116% for the same size categories (Figure 4). The mineral content of each species shows considerable variation, as reported in previous studies summarized in Table 1.

The measurement of calcium and phosphorus content for the fish bones of *P. canius* and *S. guttatus* with different size categories indicates that the sample size affects the mineral content in the fish bones. The smaller the sample category, the lower the calcium and phosphorus mineral content. Maulu *et al*. (2021) found that smaller fish contain higher amounts of minerals than most large and medium fish, regardless of processing. This is because small fish still contain components rich in minerals, such as bones, heads, and viscera. Based on the categories of size of *P. pardalis*, large fish have the highest concentration of calcium, and the lowest calcium content is found in medium-sized fish (Wijayanti *et al*., 2023). Previous research has also found that the mineral content of deep-sea fish was similar to brackish water fish (Vijayan *et al*., 2016). Fish need trace elements for physiological and biochemical functions to maintain their normal life processes (Lall and Kaushik, 2021). Macrominerals play an important role in cellular, tissue, and organ function, and their levels in the fish's body are influenced by various factors, including the fish's size (Weyh *et al*., 2022). Mineral absorption by fish is carried out by drinking seawater and stored by endocrine homeostatic regulatory mechanisms that optimally improve cell, tissue, and organ systems (Pinto *et al*., 2022). Macro-minerals in fish bodies are directly related to the development and maintenance of the skeletal system (Hlordzi *et al*., 2022). Large fish are more likely to take large quantities of food because they adapt the type of food to their mouth opening (Harvey *et al*., 2021). Nutrients in the developmental system of fish are known to interact with minerals because of their ability and tendency to form chemical bonds (Baeverfjord *et al*., 2019). Such interactions are broadly classified as positive, synergistic, harmful, or antagonistic. Direct

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positive interactions between elements in structural processes, such as the requirement for copper (Cu) and iron (Fe) for hemoglobin formation, calcium (Ca), phosphorus (P), and magnesium (Mg) for bone hydroxyapatite formation, and Mn-Zn interaction for conformation RNA molecule exact (Lall and Kaushik, 2021). The absorption of minerals in fish through their food and habitat is essential in promoting growth, resulting in good body composition, meat quality, and maintaining fish health (Pinto *et al*., 2022).

3.3 Analysis of variance and least significant difference

The ANOVA results indicated significant differences in calcium and phosphorus concentrations in fish bones across size categories for both species (Table 2). In *P. canius*, calcium levels were notably different between large and small fish ($p = 0.009$), but not between medium and small fish ($p = 0.075$). For phosphorus levels in *P. canius*, there were significant differences between both large-small and medium-small groups ($p = 0.000$). Further analysis using the LSD test (Table 3), revealing that calcium levels in *P. canius* were significantly different between large and small sizes ($p = 0.009$), but not between medium and small sizes ($p = 0.075$). Phosphorus levels in *P. canius* differed significantly between both large-small and medium-small groups ($p = 0.000$). In *S. guttatus*, both calcium and phosphorus showed significant differences across all size comparisons ($p < 0.05$). Based on the results of the ANOVA test ($P<0.05$), fish size had a significant effect on the calcium and phosphorus content in the bones of *P. canius* and *S. guttatus*. Furthermore, the LSD test showed significantly different calcium and phosphorus contents in each fish size. Differences in calcium and phosphorus content between categories based on the size of each type of fish bone depend on its ability to absorb inorganic elements from food and the living environment (Manz *et al*., 2023). Mineral absorption in fish may vary depending on gastric physiology, particularly between gastric and agastric species, as well as from direct absorption of minerals from water (Weyh *et al*., 2022). Habitat also plays a significant role; for example, freshwater species such as whitefish and trout have been reported to possess mineral levels comparable to those of marine species like halibut, mackerel, and herring (Kiczorowska *et al*., 2019). Additionally, variations in mineral content may result from differences in catch locations, physiological traits, taxonomic classification, analytical procedures, and even the timing of sample analysis (Pinto *et al*., 2022).

Table 2. ANOVA results for calcium and phosphorus in fish bones

Species	Element	df	F	Sig.
P. canius	Calcium	2	7.154	0.026
S. guttatus	Phosphorus	2	57.116	0.000
P. canius	Calcium	2	27.216	0.001
S. guttatus	Phosphorus	2	12.088	0.008

Table 3. LSD test results based on fish size category.

Species	Element	Category	Sig.
P. canius	Calcium	Large-Small	0.009*
		Medium-Small	0.075
P. canius	Phosphorus	Large-Small	0.000*
		Medium-Small	0.000*
S. guttatus	Calcium	Large-Small	0.000*
		Medium-Small	0.018*
S. guttatus	Phosphorus	Large-Small	0.003*
		Medium-Small	0.015*

*The mean difference is significant at 0.05 level.

3.4 Independent sample T-test

The calcium and phosphorus content of *P. canius* and *S. guttatus* were tested for normality and homogeneity. They obtained $p>0.05$ in both, in which the data were normally distributed and homogeneous. The independent sample T-test showing the difference in the average content of calcium and phosphorus in the two species of fish bones is summarized in Table 4. The results show that no significant difference in calcium and phosphorus content between fish bones in *P. canius* and *S. guttatus*. Based on the Sig. (2-tailed) values obtained, namely 0.908 and 0.551, meaning that the significant value exceeds the value of 0.05, indicating no difference in the average calcium and phosphorus content in *P. canius* and *S. guttatus*. The results for calcium and phosphorus content in these two species did not have a significant average comparison; they were only 0.11% and 0.002% different. The data on the calcium content of *P. canius* and *S. guttatus* bones showed that the calcium content of *P. canius* was higher than that of *S. guttatus*. Meanwhile, the phosphorus content in *S. guttatus* was slightly higher than in *P. canius*.

Several internal and external factors influence the mineral composition of fish bones (Table 1). Mineral concentrations in fish tissues are affected by size, age, sex, maturity, habitat, environmental parameters, and food availability. Fish bones are known to be rich in minerals (Boutinguiza *et al*., 2012), and dietary factors may contribute to variations in calcium content between *P. canius* and *S. guttatus*. Lall and Tibbetts (2009) also emphasized that mineral absorption is influenced by the surrounding environment, making the fish's origin a determining factor. Furthermore, mineral content in fish is associated with metal absorption from the environment (Weyh *et al*., 2022). Overall, larger fish exhibited higher calcium and phosphorus levels compared to smaller individuals. These two essential minerals are vital for

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Table 4. Independent sample T-test statistics for differences in average calcium phosphorus content in fish bones of *P. canius* and *S. guttatus*.

Variances		T-test for equality of means		
		Sig. (2-tailed)	Mean difference	Std. error difference
Calcium	Equal variances assumed	0.908	0.11111	0.94582
Phosphorus	Equal variances assumed	0.551	-0.00200	0.00328

human health particularly in bone development and maintenance (Loughrill *et al*., 2017). Phosphorus as a component of ATP supports energy metabolism, bone and tooth structure, and physiological processes such as acid-base balance, muscle contraction, and nerve transmission (Corrêa and Holanda, 2019; Manz *et al*., 2023).

According to WHO, the recommended daily calcium intake is 400–500 mg for adults, increasing to 700–800 mg with high protein intake, and up to 1200 mg for pregnant women, breastfeeding mothers, children, and adolescents. Intake should not exceed 2500 mg/day to avoid hypercalciuria. The recommended for phosphorus intake is 700 mg for adults and 1250 mg for adolescents. According to Metwally *et al*. (2021), fish by-products can be utilized to reduce reliance on external nutrient sources. Fish bones are also a promising source of hydroxyapatite, a bioceramic material widely applied in medical, health, and food industries (Harvey *et al*., 2021).

4. Conclusion

Fish bones of *P. canius* have more significant potential as a source of calcium than *S. guttatus* fish bones. The bones of *S. guttatus* have a more significant phosphorus content than those of *P. canius*. The large fish category has a higher mineral content than medium and small fish. Based on the different tests on the average range of calcium and phosphorus, the two types of fish bones did not have a significant average difference with the Sig. 2-tailed values of 0.908 and 0.551 were tested at the 0.05 level of confidence (α). Based on the nutritional adequacy ratio, this study's calcium and phosphorus content can be used as a natural source of minerals for the body's daily needs and has potential for further development in the health sector as bone substitutes or natural hydroxyapatite.

Conflict of interest

The authors declare no conflict of interest.

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