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**RESUMO**

**The editors can provide the translation of the ABSTRACT to Portuguese for those who Portuguese is not the first language**

Obrigatório para todos os manuscritos em que o formato **IMRAD (Introdução, Métodos, Resultados e Discussão)** deve ser resumido. Não deve conter fórmulas, referências ou abreviações. O nome RESUMO deve ser escrito em letras maiúsculas, Arial, corpo 12, negrito, alinhamento à esquerda. O resumo deve ser escrito em fonte Arial, tamanho 10, justificado. A revista adota o **RESUMO ESTRUTURADO de 200 a 300 palavras da seguinte forma:**

**Introdução:** Introdução e descrição do problema; identifica a necessidade da pergunta de pesquisa. Em pesquisas rigorosas, pode incluir uma hipótese que seja apoiada ou refutada em conformidade. Qual é o assunto e a relevância do estudo? O que pretende demonstrar ou descrever? Isso deve ser escrito de forma sucinta; pode ser necessário fazer uma breve referência a um contexto. Qual é a importância da pesquisa? Por que um leitor estaria interessado na obra maior? O pano de fundo (introdução) deve indicar claramente o problema, a razão para fazer o trabalho, as hipóteses ou previsões teóricas em consideração e o pano de fundo essencial. **Objetivo:** a finalidade do trabalho (objetivo); qual é o objetivo do estudo? As perguntas exatas abordadas pelo artigo; o objetivo principal da revisão. Comece com uma declaração clara e concisa do objetivo preciso ou questão abordada no artigo. Se mais de 1 objetivo for abordado, o objetivo principal deve ser indicado e apenas os objetivos secundários principais, declarados. Se uma hipótese a priori foi testada, ela deve ser declarada. Exemplo: Este estudo teve como objetivo ... ou ... O objetivo deste estudo foi ... **Métodos:** o desenho básico do estudo; informar a duração do acompanhamento, se houver; explicar os métodos para que outros possam replicar o estudo. Como os objetivos são alcançados? Incluir o (s) método (s) principal (ais) utilizado (s) para a pesquisa; coleta de dados - descreve o processo e aponta possíveis omissões; qual é o método de estudo? Apresente a metodologia usada, a forma de coleta de dados e amostra. Se for um ensaio teórico, qual a abordagem adotada. Forneça detalhes suficientes ao leitor para compreender como o estudo foi realizado. **Resultados e Discussão:** O objetivo de uma seção de Resultados e Discussão é apresentar os principais resultados de sua pesquisa. Quais são os principais resultados? Os principais resultados do estudo devem ser fornecidos e quantificados, incluindo intervalos de confiança ou valores P. Para estudos comparativos, os intervalos de confiança devem estar relacionados às diferenças entre os grupos. Os resultados devem ser apresentados de forma concisa. Aponte a importância dos resultados e coloque-os no contexto de outro trabalho e base teórica. É importante planejar esta seção com cuidado, pois pode conter uma grande quantidade de dados científicos que precisam ser apresentados de forma clara e concisa. **Conclusões:** Fornecer apenas conclusões diretamente suportadas pelos resultados; evitar especulação e generalização excessiva. Indique se estudo adicional é necessário; Dê igual ênfase a descobertas positivas e negativas de igual mérito científico; aponta coisas que podem ter sido esquecidas e sugere áreas para pesquisas futuras; resumo de sua pesquisa. Alguns pesquisadores também incluem: contribuição de conhecimento, limitação de pesquisa e recomendação de pesquisa futura na seção de conclusões.

(single space)

**Palavras-chave**: Os autores devem fornecer palavras-chave adequadas e curtas que encapsulem os principais tópicos do artigo. Deverão ser escritas, no máximo, 5 (cinco) palavras-chave, não incluindo palavras que apareçam no título do trabalho. As palavras-chave devem ser fornecidas indicando o escopo do artigo. A palavra Palavras-chave deve ser escrita em letra Arial, tamanho 10, inicial maiúscula, negrito, alinhado a esquerda. As palavras-chave propriamente ditas deverão ser escritas com letra, Arial, tamanho 10, itálico. **The editors can provide the translation of the KEYWORDS to Portuguese for those who Portuguese is not the first language**

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**ABSTRACT**

**Background:** Introduction and problem statement; identify the need for the research question. Rigorous research may include a hypothesis that is supported or refuted accordingly. What is the subject and relevance of the study? What does it intend to demonstrate or describe? This should be written succinctly; it might be eventually necessary to refer briefly to a context. What is the importance of the research? Why would a reader be interested in the larger work? The background (introduction) must clearly state the problem, the reason for doing the work, the hypotheses or theoretical predictions under consideration, and the essential background. **Aim:** the purpose of the work (objective); What is the aim of the study? The exact question(s) addressed by the article; the primary objective of the review. Begin with a clear, concise statement of the precise objective or question addressed in the manuscript. If more than 1 objective is addressed, the main objective should be indicated, and only key secondary objectives stated. If an a priori hypothesis was tested, it should be stated. Example: This study aimed to...or...The purpose of this study was to... **Methods:** Name the databases that were used in the research. What were the mains terms used in the research? The basic design of the study; state the duration of follow-up, if any; explains the methods so others can replicate the study. How are the objectives achieved? Include the main method(s) used for the research; data collection - describes the process and points out potential omissions; What is the study method? Show the methodology used, the form of data, and sample collection. If it is a theoretical essay, what is the approach adopted. Provide sufficient details to the reader to understand how the study was performed. **Results**: How many results did the search terms return in the databases? How many results were maintained in the study? The purpose of a Results section is to present the key results of your research. What are the main results? The main outcomes of the study should be provided and quantified, including confidence intervals or P values. For comparative studies, confidence intervals should relate to the differences between groups. Results should be presented concisely. Point out the significance of the results, and place the results in the context of other work and theoretical backgrounds. It is important to plan this section carefully as it may contain a large amount of scientific data that must be presented clearly and concisely. **Discussion:** Discuss the main results. How many are in agreement? The purpose of the Discussion is to allow the authors to compare the main results and make inferences about it. The discussion section is one of the final parts of a research paper, in which an author describes, analyzes, and interprets their findings. **Conclusions:** Provide only conclusions directly supported by the results; avoid speculation and overgeneralization. Indicate whether additional study is required; Give equal emphasis to positive and negative findings of equal scientific merit; point out things that may have been overlooked, and suggests areas for further research. Summary of your research. In the conclusions section, some researchers also include knowledge contribution, research limitations, and future research recommendations.

**Keywords**: Authors should provide appropriate and short keywords that encapsulate the principal topics of the paper. *The maximum number of keywords is 5* not including items appearing in the title. The keywords should be supplied, indicating the scope of the paper. Size 10, italic, justify, only the word Keywords must be bold, left alignment.

**ABSTRACT (Arial 12, bold, capital letters, left alignment) - ABSTRACT and KEYWORDS IN YOUR NATIVE LANGUAGE (if different from ENGLISH or PORTUGUESE)- MANDATORY**

**(single space)**

**Background:** Introduction and statement of the problem; identifies the need for the research question. Rigorous research may include a hypothesis that is supported or refuted accordingly. What is the subject and relevance of the study? What does it intend to demonstrate or describe? This should be written succinctly; it might be eventually necessary to refer briefly to a context. What is the importance of the research? Why would a reader be interested in the larger work? The background (introduction) must clearly state the problem, the reason for doing the work, the hypotheses or theoretical predictions under consideration, and the essential background. **Aim:** the purpose of the work (objective); What is the aim of the study? The exact question(s) addressed by the article; the primary objective of the review. Begin with a clear, concise statement of the precise objective or question addressed in the manuscript. If more than 1 objective is addressed, the main objective should be indicated, and only key secondary objectives stated. If an a priori hypothesis was tested, it should be stated. Example: This study aimed to...or...The purpose of this study was to... **Methods:** the basic design of the study; state the duration of follow-up, if any; explains the methods so others can replicate the study. How are the objectives achieved? Include the main method(s) used for the research; data collection - describes the process and points out potential omissions; What is the method of study? Show the methodology used, the form of data, and sample collection. If it is a theoretical essay, what is the approach adopted. Provide sufficient details to the reader to understand how the study was performed. **Results and Discussion**: The purpose of a Results and Discussion section is to present the key results of your research. What are the main results? The main outcomes of the study should be provided and quantified, including confidence intervals or P values. For comparative studies, confidence intervals should relate to the differences between groups. Results should be presented concisely. Point out the significance of the results, and place the results in the context of other work and theoretical background. It is important to plan this section carefully as it may contain a large amount of scientific data that needs to be presented in a clear and concise fashion. **Conclusions:** Provide only conclusions directly supported by the results; avoid speculation and overgeneralization. Indicate whether additional study is required; Give equal emphasis to positive and negative findings of equal scientific merit; point out things that may have been overlooked, and suggests areas for further research. Summary of your research. Some researchers also include knowledge contribution, research limitation, and future research recommendations in the conclusions section.

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**Keywords**: Authors should provide appropriate and short keywords that encapsulate the principal topics of the paper. *The maximum number of keywords is 5* not including items appearing in the title. The keywords should be supplied, indicating the scope of the paper. Size 10, italic, justify, only the word Keywords must be bold, left alignment.

**1. Introduction**

A review paper can be presented in a wide variety of formats. This template is by far not perfect, but it was created to provide some directions of the minimal components that the authors should include in a review paper to make it relevant, clear, reliable, and verifiable.

As the author, you are not forced to follow these orientations, but we are not obligated to publish manuscripts that are considered substandard. So please consider the quality of your research prior to any submission to this journal. This template model structure is mandatory from December 2022 and on.

The spacing between paragraphs should be 0pt, then 6pt, and single spacing between lines.

**The body text can be written in Brazilian Portuguese.**

The introduction must clearly state the problem, the reason for doing the work, the hypotheses or theoretical predictions under consideration, and the essential background. It should not contain equations or mathematical notation. A brief survey of the relevant literature so that a non-specialist reader could understand the significance of the presented results.

Page size: A4, margins: 2 cm on each side, line spacing: single, font type: Arial. Font size: 11. Please leave headers and footers unchanged since the editors should fill it.

In the text, references should be cited in the APA style (Author, year). Alternatively, the author’s surname may be integrated into the text, followed by the year of publication in parentheses. Cite only essential resources, and avoid citing unpublished material. References to papers "in the press" must mean that the article has been accepted for publication. At the end of the paper, list references alphabetically by the last name of the first author. Please, list only those references that are cited in the text and prepare this list as an automatically numbered list. The word References with size 12, bold, capital letters, left alignment.

Examples: Grasslands are regarded as important foraging areas for many insectivores in Europe, such as birds (Vichery, 2001; Barnet *et al.*, 2004) and bats (Güttinger, 1997) or amphibians and reptiles (Langton and Burton, 1997). However, the knowledge of the overall arthropod availability in such grasslands is scarce since many studies about insect populations concentrate on extensive grasslands on poor, dry, or wet soils and include only a few species or systematic groups (Ellgsen *et al.*, 1997; Gibson *et al.*, 1992; Hänsel and Plachter, 2004; Manhart *et al.*, 2004; Kruess and Tscharntke, 2002a, b; Wingerden *et al*., 1992; Sjödin, 2007a, b; Perner *et al*., 2005).

Carbon dioxide produced by the combustion of biodiesel can be recycled by photosynthesis, thereby minimizing the impact of biodiesel combustion on the greenhouse effect (Körbitz, 1999; Agarwal and Das, 2001). In addition, biodiesel has a relatively high flash point (150 °C), which makes it less volatile and safer to transport or handle than petroleum diesel (Krawczyk, 1996).

**2. METHODS**

Provide sufficient details to permit repetition of the experimental work. The technical description of methods should be given when such methods are new.

Within each main section, three levels of subheadings are available, and the titles must be bold, bold, and italic, italic, respectively. Font size: 10.

The research was conducted from June 01 to July 01, 2022. The period searched on the databases was from 1900 to 2050…

**2.1. Methods**

This section should describe the methods used to search for and select the articles reviewed, including any inclusion and exclusion criteria used.

Present the main methodology used in this section. Remember to include the references to the methods.

(sample text) This research was conducted in the databases of Scopus, WoS, Google Patentes, and the library X….

The keywords or terms used in the search were “A”, “b”, “c”…..

The logical operators used in the search were AND, OR, XOR… In addition, the search used the terms individually and in combination….

***2.2.1. Method A…***

Criteria to maintain results in the serch….

Criteria to exclude the results…

***2.2.2. Method B…***

**2.1. Subheadings**

***2.1.1 Subheadings***

*2.1.1.1 Subheadings*

Examples:

**2.1. Materials or Samples or Participants**

**2.2. Groups of Study or Study Design or……**

**2.3. Methods or Experimental procedures or….**

**2.4. Data Collection**

**2.5. Statistical Analysis or Data Analysis**

**2.6. Ethics or Ethical Guidelines**

**2.7. Other items that the authors deem necessary and relevant**

Mathematical expressions: In general, minimize unusual typographical requirements, use solidus, built-up fractions. Avoid lengthy equations that will take several lines (possibly by defining terms of the equation in separate displays). Please use the Equation Editor of Word for drawing equations, if possible. Make subscripts and superscripts clear. Display only those mathematical expressions that must be numbered for later reference or that need to be emphasized. The number displayed equations consecutively throughout the paper. The numbers should be placed in parentheses to the right of Equation 1, e.g., (Eq. 1).

3x3 + 2x2 + 5x +6 (Eq. 1)

**3. ResultS AND DISCUSSION**

**3.1. Results**

This section should provide a summary of the main findings of the reviewed literature, including any patterns, trends, or significant results.

Results should be presented concisely.

A table is a good way to present the results

***Table 1*.** *Example of a simple search result table*

|  |  |  |  |
| --- | --- | --- | --- |
| **Term** | **Database** | **Results** | **Exclusions** |
| “A” | Scopus | 1 | 1 |
|  | DOAJ | 5 | 3 |
|  | WoS | 3 | 2 |
| “B” | Scopus | 6 | 0 |
|  | DOAJ | 3 | 1 |
|  | WoS | 5 | 2 |
| “C” | Scopus | 8 | 5 |
|  | DOAJ | 2 | 0 |
|  | WoS | 4 | 1 |

***Table 2*.** *Example of a combined search result table*

|  |  |  |  |
| --- | --- | --- | --- |
| **Term** | **Database** | **Results** | **Exclusions** |
| “A” AND | ScienceDirect | 1 | 1 |
| “B” | DOAJ | 5 | 3 |
|  | WoS | 3 | 2 |
| “A” AND “C” | ScienceDirect | 6 | 0 |
|  | DOAJ | 3 | 1 |
|  | WoS | 5 | 2 |
| “B” AND | ScienceDirect | 8 | 5 |
| “B” | DOAJ | 2 | 0 |
|  | WoS | 4 | 1 |

**3.2. Discussions**

This section should provide an interpretation of the results, placing them in the context of existing literature and knowledge. It should also identify gaps in the literature and make suggestions for future research.

Discussion of the results. Point out the significance of the results and place the results in the context of other work and theoretical backgrounds.

**Figures:** All photographs, graphs, and diagrams should be numbered consecutively (e.g., Figure 1) in the order they are referred to in the text. The caption must appear below the figure (size 11, bold, italic) and should be sufficiently detailed to enable us to understand apart from the text. The lettering and symbols should also be explained in the caption and only exceptionally in the figures. Figures should be of good quality and preferably in black and white. (Color figures will appear in the downloadable files, but all papers will be printed in black and white.) Scanned figures should be at an 800 dpi/bitmap resolution for line graphs. Diagrams containing chemical structures should be of high graphical quality and always be of the same size to be uniformly reduced. Figures should have a maximum width of one Journal column (8.5 cm) to be inserted into the body of the text so that they can be applied to the standards of the Journal. If the figures exceed 8.5 cm, they will be placed at the end of the article. Also, authors are requested to submit each picture as an image file in one of the following formats: **jpg or png**. For figures, graphs, diagrams, and tables identical to material already published in the literature, authors should seek permission for publication from the companies or scientific societies holding the copyrights and send it to the editors of TQ along with the final form of the manuscript.



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***Table 3*.** *Example of table*

|  |  |
| --- | --- |
| **Ranking (BOLD)** | **Country (BOLD)** |
| 1 | Saudi Arabia |
| 2 | Iran |
| 3 | Iraq |
| 8 | Venezuela |
| 15 | Brazil |

Reference: Energy Information Administration - EIA - Official Energy Statistics from the U.S. Government. **International Oil and Natural Gas Reserves as of December 31, 2005**. (if necessary, the reference of the table or figure should be written like this example, below the table (or figure), Arial, font size 10, central alignment)

All the information inside the table should be written as the table above. Arial, Font size: 11 for the headings (bold) and the data of the table. Also, the borders and style should follow the example above.

To every term, the author should provide a proper discussion

***3.1.1 Sample text, term “Biology”***

The term “biology” was used in X amount of papers…

In the context of X, the term had the meaning of… The authors X (1990), Y (2009), and Z (2020) used the term to describe “A”, but the authors M (2022), and N (1999), described it in opposition.

From the point of view of the authors of this research, the concept used by authors X (1990), Y (2009), and Z (2020) is more accurate since it describes better ………..

***3.1.2 Sample text, term “life”***

***3.1.3 Sample text, term “Wild”***

***3.1.4 Sample text, terms “life”*** AND ***“Wild”***

**4. Conclusions**

This section should summarize the main findings and their significance and should provide a brief statement that reiterates the main objective of the review.

Summarize the data discussed in the Results and Discussion showing the relevance of the work and how different it is from other research. Also, point out the benefits and improvements that can be observed to develop new science standards that can change something in the related field.

**5. DECLARATIONS**

**5.1. Study Limitations**

Please present all possible limitations the study faces that might significantly affect the research outcome. If not applicable, write, “No limitations were known at the time of the study”.

**5.2. Acknowledgements**

If any, the acknowledgments should be placed in this paragraph and may include a list of people who contributed to the work in the manuscript but are not listed in the author list.

**5.3. Funding source**

Please, provide the funding sources and supporting grants with the grant number. The name of funding agencies should be written in full. If no funding source exists, write, “The authors funded this research”.

**5.4. Competing Interests**

Declare any potential conflict of interest that exists in this publication.

**5.5. Open Access (do not change the text of this section) and delete the red words.**

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Please, present the ethical approval authority name with the **reference** **number**. The author should send scan a PDF copy of the ethical approval letter obtained from IRB/ethical committee or institutional head.

**6.2. Informed Consent**

Write a statement of informed consent taken from the participants to publish this research work. The editor may request to upload a scanned copy.

**7. ReferENCES:**

1. De Boni, L. A. B; Lima da Silva, I. N; Pereira, M. M. (2013). The production of biodiesel monitored with real-time laser spectroscopy: confirmation of the technique with proton nuclear magnetic resonance. *Southern Brazilian Journal of Chemistry*, 21, 19-30.
2. De Boni, L. A. B; Lima da Silva, I. N. (2011). Monitoring the transesterification reaction with laser spectroscopy. *Fuel Processing Technology*, 92, 1001-1006.
3. Cervelin, A.; De Boni, L. A. B. (2019). Construindo um espectrofotômetro com materiais reciclados. *Periódico Tchê Química*, 32(16), 1029-1033.

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**THE JOURNAL USES THE APA FORMAT CITATION FOR THE REFERENCES. CHECK THE GENERAL RULE BELOW.**



***Figure 2.*** *Example of a figure that exceeds 8.5 cm (extrapolated from the measurements of the column), so it is placed at the end of the article. Source: the author*

***Table 2.*** *Example of a table that exceeds 8.5 cm (extrapolated the measurements of the two columns format), so it is placed at the end of the article. Source: the author*

|  |  |  |
| --- | --- | --- |
| **Ranking** | **Country** | **Country** |
| 1 | Saudi Arabia | Saudi Arabia |
| 2 | Iran | Iran |
| 3 | Iraq | Iraq |
| 8 | Venezuela | Venezuela |
| 15 | Brazil | Brazil |

Reference: Energy Information Administration - EIA - Official Energy Statistics from the U.S. Government. **International Oil and Natural Gas Reserves as of December 31, 2005**.

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