



Article titles are written in 12-15 words, Times New Roman, 12 pt, centered, bold. Title must be simple, informative, and reflect important findings of the article

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ABSTRACT

Abstracts are written briefly in English. Written one paragraph of 150-200 word. The structure of the abstract should consist of the background, research objectives, methodology, results, conclusion of the study and accompanied by 3-5 keywords. Written in Times New Roman font type, 12 pt, spacing 1.0.

Keywords: 3-5 words

INTRODUCTION

The introduction contains the background of the research, the state of the art (current conditions referring to existing research) that are relevant. The existence of novelty or differences with other research based on current conditions. The research is continued with the purpose of the research. The introduction is presented in the form of paragraphs of approximately 1000 words. Citations must be formatted using APA style. Using Times New Roman font, 12 pt.

Example :

Catharanthus roseus (L.) G. Don, known as tapak dara leaves, is widely cultivated as an ornamental plant. Currently, *Catharanthus roseus* leaves are also cultivated as a plant producing alkaloid compounds.....(Lombonbitung *et al.*, 2015).

Although *Catharanthus roseus* leaves are easy to cultivate with a high population, the level of vinblastine and vincristine production in *Catharanthus roseus* leaves is very low, which is around 0.0003% of the total alkaloid content of 2.56%. Thus it is necessary to find a method to increase vincristine and vinblastine levels through in vitro culture methods.....(Darsini, 2011; Namdeo, 2007).

Cell culture is a method of producing secondary metabolites in a much shorter time compared to conventional methods, namely in a matter of weeks. Through cell culture, the production of secondary metabolites can be increased by providing certain concentrations of elicitors (Ncube & Van Staden, 2015). This study aimed to increase vincristine levels by administering methyl jasmonic acid and tryptophan with various concentrations in *Catharanthus roseus* leaf cell suspension cultures using *High Performance Liquid Chromatography* (HPLC) analysis.

MATERIALS AND METHODS

Equipment and Materials

The equipment and materials required should be listed in detail.

Methods

Provide the research design, complete with information on the type of study, location, time, population, sample, sampling method, instruments, data collection techniques, analysis, and Ethical Considerations (if the research involves human subjects or animals).

Example:

Manufacture of solid Murashige-Skoog (MS) media

Weighed 4.4 grams of Murashige-Skoog (MS), 30 grams of sucrose, 100 mg of myo-inositol, and 5 grams.

Explant sterilization

Catharanthus roseus leaves are washed with running water and liquid soap,.....

Induction and subculture

In a petri dish, the Catharanthus roseus leaves were cut into smaller pieces (explants) with a length of 2 cm.

Cell suspension culture and quantification of culture results

The callus was transferred to a cell suspension culture, and 0.5 g of fresh callus was transferred to a 50 ml Erlenmeyer containing 10 ml of liquid MS.....

Analysis of vincristine levels using HPLC

a. Sample preparation

A total of 500 mg of dry callus from each sample was transferred into a 10 ml centrifuge tube and then

b. Analysis with HPLC

As much as 20 μ L of the supernatant was injected in HPLC with a column using Kinetex 5

RESULTS AND DISCUSSION

Results can be presented in the form of tables or figures. In general, journal papers will contain three-seven figures and tables. Figures and tables should be concise and numbered using Arabic numerals in the text (e.g. Figure 1, Figure 2, etc.; Table 1, Table 2, etc.). The discussion should be concise and relevant to the interpretation of the results. In discussing, please compare with other studies or underlying theories. Research limitations should also be included.

Example:

Content of Vincristine Compounds

Analysis of the content of vincristine compounds was carried out using the HPLC method. In this study, the use of the elicitors methyl jasmonate acid and tryptophan had a positive effect on producing compounds vincristine in cell suspension cultures of Catharanthus roseus leaves.

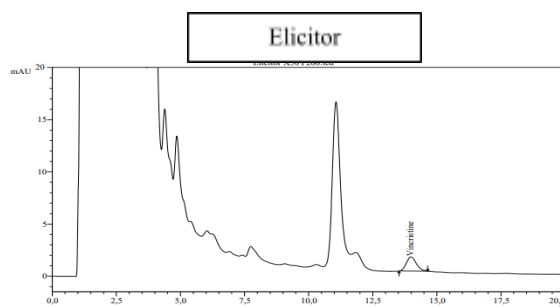


Figure 1. Figure name

Figure 1 shows the retention time of vincristine in Catharanthus roseus leaf cell suspension culture by administration of methyl jasmonic acid and tryptophan with various concentrations. For each retention time in each treatment, the chromatogram showed around 13 minutes. In the same study Alhatemy et al. (2019), the retention time of the vincristine

standard solution on the chromatogram showed that the vincristine peak appeared at 12.98 minutes

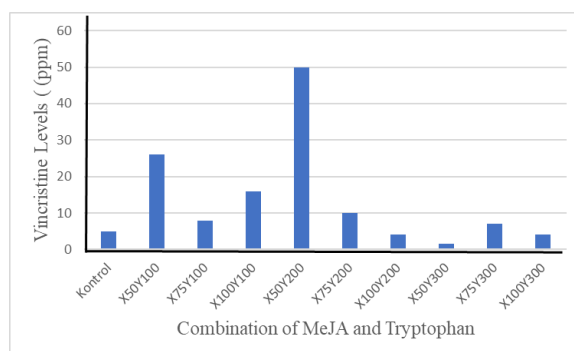


Figure 2. Figure name

example of writing research results in table form

Table 1. Table Name			
Column Title	Column Title	Column Title	Column Title
Name	0,0104	0,0104	0,00376
Name	0,0827	0,0827	0,05066

CONCLUSION

The conclusion of the research results must be written in one paragraph, briefly and clearly, which answers the formulation of the problem and the research objectives.

ACKNOWLEDGMENTS

Contains thanks to all parties involved in this research. If this research received funding from external parties, please mention it.

AUTHOR'S DECLARATION

Authors' contributions and responsibilities

Write the contribution of each author here, or mark the following column.

- ☐ The authors made substantial contributions to the conception and design of the study
- ☐ The authors took responsibility for data analysis, interpretation and discussion of results
- ☐ The authors read and approved the final manuscript

Funding

Write down the research funding, if any

Availability of data and materials

- ☐ All data are available from the authors



Competing interests

☐ The authors declare no competing interest

Additional information

Write additional information related to this research, if any.

REFERENCES

The bibliography is written using APA style, it is recommended to use Mendeley.

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