

## Feasibility of Cosmetic Ethnobotany-Based Pocketbook in Tonang Village as A Biology Learning Resource in High School

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### ABSTRACT

This study aims to determine the types of plants used as cosmetic ingredients by the people of Tonang Village, SengahTemila District, Landak Regency. The results of research on cosmetic plants are presented in the form of learning media in the form of a pocket book. The type of this research is qualitative and quantitative with descriptive method using triangulation data collection technique. The number of informants used were 76 informants with characteristics based on gender, age, education and occupation. Data analysis used descriptive analysis using media validation sheets. The results of cosmetic plants obtained were 21 species with 18 families with the most habitus being trees. The most locations found cosmetic plants in the yard of the house, the part that is widely used is leaves, the method of use is mostly by sticking it. Cosmetic plants are believed to have a beautiful effect on themselves such as smoothing and whitening facial skin, removing acne and thickening hair. The validation of pocket book media in Tonang Village was validated with 3 aspects and 12 criteria, so that the contents of pocket book media were declared feasible with an average total CVI validation of 0.99.

### KEYWORDS

Pocket book  
Ethnobotany  
Cosmetic Plant

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## 1. Introduction

Learning is a complex process that occurs in everyone throughout his life, the process occurs because of the interaction between a person and his environment, therefore learning can occur anytime and anywhere There are several factors that trigger the students' lack of understanding of the material presented, including school facilities that are less supportive, as well as a lack of interest in finding references for the learning process.

Learning media are all forms and means of delivering information that is made or used in accordance with learning theory, can be used for learning purposes in channeling messages, stimulating students' thoughts, feelings, attention, and willingness so that they can encourage a deliberate, purposeful and controlled learning process. Suryani, Setiawan, Putria, 2018,). According to(Arsyad 2017)) media functions for instructional purposes where the information contained in the media must involve students both mentally or in the form of real activities so that learning can occur.

Based on the results of interviews with teachers who teach biology in class X SMA Senior high school one Sengah Temila. Information was obtained that the curriculum used at Senior high school 1 Sengah Temila was the 2013 curriculum, and the Minimum Completeness Criteria (KKM) used for Biology subjects was 70 and there were some students who did not complete. In the sub-material of the use of biodiversity in Indonesia, students are expected to be able to find information about plants that are used by the community. Based on the 2013 curriculum syllabus, the sub-material of the use of biodiversity in Indonesia, class X SMA has Basic Competence (KD) 3.2, namely analyzing various levels of biodiversity in Indonesia and their threats and conservation. And in the sub-material of the use of biodiversity in Indonesia, it has the scope of material on biodiversity as a source of medicine, food, cosmetics, clothing, shelter, cultural aspects, and germplasm sources (Irnaningtyas, 2013).

Based on the results of observations, a learning media is needed that is in accordance with the conditions of the facilities and infrastructure as well as the students in this school, therefore a learning media in the form of a pocket book is chosen briefly and in accordance with the sub-material of the use of biodiversity in class X SMA. The pocket book is made based on several aspects, namely language aspects, content aspects and construction aspects which are described in the twelve criteria for assessing the feasibility of the pocket books made. Which was then validated by five validators or experts, namely two biology education lecturers and three class X biology subject teachers who taught material on the use of biodiversity, after which the feasibility was assessed using the Lawshe formula.

In previous studies, there have been those who have made ethnobotany-based learning media as in the first study, namely the diversity of ferns in the natural tourism area of the Wonogiri Muncar Temple as material for the preparation of learning modules (Wiharti, Sulastri and Nugroho, 2019) where the validation results reach 81% where it shows that the media created is suitable for use. Then continued with research (Wati, Wiharti and Nugroho, 2019) entitled the development of the Bryophyta module based on research results in Tahura Ngargoyoso Karanganyar for class X high school students with an average validation result of 83.61 which shows learning media that are made good and suitable for use in learning activities teaching in schools. And the third is a study from Latifa (2021) entitled the development of a biology module based on research on phytoplankton in the mulur sukoharjo reservoir, where the results of the assessment by module users are 86% so that the developed module is suitable for use in learning activities.

This pocket book made is different from the pocket book that was developed previously because this pocket book has its own characteristics that other pocket books do not have, namely this pocket book contains the results of research on cosmetic plants in Tonang Village, Sengah Temila District, Landak Regency. and this pocket book has a small size, light weight so it is easier to carry everywhere when used in teaching and learning activities in the classroom and outside the classroom and the type of paper when printing is selected glossy paper with a lifespan of more than one year.

Pocketbooks are books with a small size, are lightweight, and can be stored in a pocket, pocketbooks include print media, where print media are materials prepared for teaching and information (Caesar, 2015). The presentation of this pocketbook uses many pictures and colors so that it gives a more attractive appearance. The use of pocketbook media in This et al.'s research proves that the media can increase the effectiveness in learning activities, including the research of (Trisianawati, Djudin, and Katihada 2017). Furthermore, research by (Wati 2016) on the effect of using pocketbook learning media on student learning outcomes at SMA Negeri 2 Banjarmasin.

The pocketbook media in this study has a media size of 14 cm x 10 cm and is written in Times New Roman using the Microsoft Publisher application. Plants as cosmetic ingredients were originally introduced by our ancestors from generation to generation, their use started traditionally and is growing as more and more people know and feel their benefits. The parts used for cosmetic ingredients are roots, stems, leaves, fruit, and flowers (Ami 2013).

## 2. Method

This research was conducted in two stages. The first stage is the use of plants as cosmetic ingredients in Tonang Village, Sengah Temila District, Landak Regency, and the second stage is making pocketbook media. The method used in this research is a descriptive method in the form of qualitative and quantitative research. Quantitative research can be interpreted as a research method based on the philosophy of positivism, used to examine certain populations or samples, data collection using research instruments, quantitative/statistical data analysis with the aim of testing the established hypotheses (Sugiyono 2017).

Thus, the research in the first stage is to determine the types of plants used as cosmetic ingredients in Tonang Village by describing, classifying, plant parts used, and plant properties. The data was obtained based on the results of interviews with predetermined informants. Data collection for the determination of informants is based on MCMMillan and Schuamcher (Satori 2013) that if the research uses descriptive methods, the sample used as informants is 10% of the total population. Interviews were conducted by researchers to informants to find out the cosmetic plants in Tonang Village, Landak Regency. The key informants in this study were 39 administrators of Family Welfare Empowerment (PKK) who still use plants around the village as cosmetic ingredients. Steps for Collecting Identification Data on Cosmetic Plants in Tonang Village, Landak Regency, according to Ristoja; (1) Determination of informants, (2) Interviewing informants, (3) Collecting plant specimens, (4) Making herbarium, (5) Identification of plants obtained.

The cosmetic ethnobotany data obtained in Tonang Village, it was then implemented into learning media in the form of a pocketbook. In the study, the pocketbook made was 14 x 10 cm and printed on glossy paper, and the Microsoft publisher application on the cover contained the title, name and logo of the agency and the content section contained pictures of plants used as cosmetic ingredients as well as materials for the use of diversity life in Indonesia.

To find out the feasibility of the contents of the book media, a pocketbook assessment instrument was first validated using the Guttman scale which aims to see whether or not a validation sheet is appropriate. The instrument was validated by two lecturers of Biology Education FKIP University Tanjungpura after the instrument was declared feasible to use, then proceed to the validation of pocketbook media which was validated by 5 validators, namely, 2 lecturers of Biology Education FKIP University Tanjungpura and 3 teachers, SMA Negeri 1 Sengah Temila, SMA Negeri 2 Pontianak and SMA Santun University Tanjungpura. Aspects assessed from the pocketbook are language, content, and construction consisting of 12 criteria.

The CVR analysis formula is

$$CVR = \frac{Ne - \frac{N}{2}}{\frac{N}{2}} \dots\dots\dots (1)$$

Information:

Ne = Number of panelists/validators who agree on the validity of the media (considered agreeing if the value of each criterion reaches 3 to 4 if less than 3 it is considered not agreeing with the validity of the media.

N = Total number of experts / validators.

After obtaining the CVR value from each assessment criterion, then the Content Validity Index (CVI) is calculated to describe the overall criteria that the magazine media created has good content validity. The CVI formula is as follows:

$$CVI = \frac{CVR}{\sum n} \dots\dots\dots (2)$$

Information

CVR = total number of CVR.

n = total number of criteria items

If the final score for the calculation of CVR and CVI analysis reaches the minimum limit set by (Lawshe 1975) which is 1.00, then the herbal magazine made can be recognized as valid and can be used in the teaching and learning process.

### 3. Result and Discussion

Based on the results of research in Tonang Village, Sengah Temila District, Lanak Regency, 21 types of plants were used as cosmetic ingredients consisting of 18 families, the data obtained in this study were photos and classifications of plants used. After getting data based on the results of the study, it was continued with the making of a pocketbook for high school which contained materials on the use of biodiversity as a medium of learning in schools. Pocketbooks are books with a small size, are

lightweight, and can be stored in a pocket, pocketbooks include print media, where print media are materials prepared for teaching and information (Caesar 2015). The presentation of this pocketbook uses many pictures and colors so that it gives a more attractive appearance. Students tend to like interesting readings with few descriptions and lots of pictures or colors. Pictures can increase reading interest because pictures can help readers imagine (Nurhayati, 2019).

The pocketbook on the use of cosmetic plants that is made contains information related to the role of plants in daily life such as local names, Latin names, observation photos, classifications, and how to use and benefit these plants. Making a pocketbook using Microsoft Publisher by adding a combination of brown and orange beige colors as a background, using the Times New Roman font size 12, as well as variations of research results, then this pocketbook is printed with a size of 14x10 cm using a glossy paper. The picture of the pocketbook can be seen in Figure 1 and pocketbook media validation result can be seen in Table 1.



Figure 1. Media pocketbook

Tabel 1. Pocketbook media validation result

Criterion	Validator					Average of each criterion (CVR)
	1	2	3	4	5	
the suitability of KD, indicators, and learning objectives with the sub-material of the use of biodiversity with pocketbook media	3	3	4	4	4	0,99
Color compatibility of plant images, layouts, and backgrounds	4	4	3	4	3	0,99
The typeface used is attractive, and the font size is easy to read	4	4	4	4	3	0,99
The placement of images is done proportionally without disturbing the writing	4	4	4	3	3	0,99
The picture quality in the pocketbook, clear and easy to observe	4	3	4	4	4	0,99
Ease of remembering the use of plant materials	3	3	4	4	3	0,99
Pocketbooks have a shelf life of more than one year	3	3	3	4	3	0,99
Use of flexible media both indoors and outdoors	4	4	4	4	3	0,99
Use of language that is easy to understand	3	4	4	4	4	0,99
The use of language in pocketbook media is in accordance with PUEBI rules	3	3	4	4	3	0,99
Sentences arranged in a pocketbook are easy to understand	3	4	3	4	4	0,99
Pocketbook media is easy to carry everywhere	4	4	4	4	4	0,99
Total						11.88
CVI						0.99

Before validating the PocketBook media, the instrument was first validated using the Guttman scale by answering yes (Y) or no (T) to a criterion used to assess the feasibility of the high school biodiversity utilization pocketbook until it was concluded that the instrument was “Appropriate to Use.” (LD), “Appropriate to Use and Repaired” (LDP), and “Not Appropriate to Use” After that, the validated instrument was then used to validate the pocketbook media that had been made. The pocketbook media validation sheet consists of 12 criteria for assessing pocketbooks and an assessment column in the form of a Rating Scale of 1-4 and also a comment/suggestion column that can be filled in by the validator so that the pocketbook media can be improved in the future.

The results of the ethnobotany of cosmetic plants in Tonang Village, Sengah Temila District, Landak Regency, were then implemented into learning media in the form of a pocketbook. The selection of pocketbooks as a learning medium is due to the fact that it is in accordance with school conditions, especially at SMA 1 Sengah Temila where the facilities and infrastructure are inadequate to use electronic-based learning media. Therefore the delivery of information in the form of print media. The appearance of an attractive pocketbook with lots of pictures and a combination of background colors can attract students' reading interest. After validating the pocketbook media and it is considered valid, in other words, it is declared suitable for use as learning media. There are 12 assessment criteria from the pocketbook that have been declared valid, namely

In the first criterion, namely the suitability of KD, indicators and learning objectives with the sub-material of the use of biodiversity with pocket book media, on this criterion the first and second validators scored three third, fourth and fifth validators scored four, and the cvr value of 0.99 was considered valid. This criterion is in accordance with the opinion of (Sagala 2010)The teacher must clearly formulate what goals to be achieved in learning, the purpose of teaching in principle is to make the desired changes in behavior as a result of learning for students, these changes are usually carried out by teachers by implementing strategies using a learning approach , teaching methods, teaching media, and other teaching equipment. The pocket book that has been made has been adapted to the basic competencies, achievement indicators and learning objectives in the biodiversity sub-material.

In the second criterion, namely the harmony of the color of the plant image, layout and background on this criterion the first, second and fourth validators gave a score of four while the third and fifth validators scored three, and the cvr value of 0.99 was considered valid. The color layout of the plant pictures and the background is contrasting so it is comfortable to see. This is in line with (Rahmawati 2013)which states that students tend to like interesting reading with few descriptions and lots of pictures or colors.

On the third criterion, namely the typeface used is attractive and the font size is easy to read, on this criterion the first, second, third and fourth validators give a score of four while the fifth validator gives a score of three, and the cvr value of 0.99 is considered valid. The choice of font in pocket books is considered interesting and easy to read by students. This criterion is reinforced by the opinion of (Nurseto 2011)Use letters that have clear and firm characters, such as Arial, Tahoma or Verdana, avoid decorative characters or fonts because they are more difficult to read. The selection of appropriate teaching materials, easy to understand and learn, containing material that is in accordance with the curriculum, and involving the active role of students, will support the achievement of learning objectives (Yuliani, 2015).

On the fourth criterion, namely the placement of images is done proportionally without disturbing the writing on this criterion, the first, second, and third validators give a score of four while the fourth and fifth validators give a score of three, and the cvr value of 0.99 is considered valid. In this pocketbook, the research results and supporting images have been placed properly because they do not interfere with the writing or other images so that they look attractive. This agrees with (Asyhari and Silvia 2016)Learning media includes factors of aesthetic beauty, appropriate size, and appropriate color combinations so that it attracts the attention and interest of students to use it.

In the fifth criterion, namely the quality of the picture in the pocketbook, it is clear and easy to observe on this criterion, validators one, three, four and five give a score of four while the second validator gives a score of three, and the cvr value of 0.99 is considered valid. In the pocketbook learning media, the images displayed are clear and easy to observe by the reader. This agrees with (Sadiman 2014) that a good picture as an educational medium is that the picture must honestly describe the situation as if people saw the actual object and the composition of the picture should be clear enough to show the main points in the picture. Pictures can increase reading interest because pictures can help readers imagine. Imagination can help a person improve his memory performance (Masita and Wulandari, 2019).

In the sixth criterion, namely the ease of remembering plant utilization materials, on this criterion, the first, second, and fifth validators scored three while the third and fourth validators scored four, and the cvr value of 0.99 was considered valid. In this criterion, the material for sub-utilization of biodiversity is summarized as best as possible without omitting any information from the material so that students can remember it easily. This is in accordance with the opinion of (Asyhari and Silvia 2016) Making learning media must also be in accordance with the level of ability or thinking power of students who can encourage activity and creativity so as to help achieve learning success.

On the seventh criterion, namely, the pocketbook has a durability of more than one year, on this criterion the first, second, third, and fifth validators give a score of three while the fourth validator gives a score of four, and the CVR value of 0.99 is considered valid. (Arsyad 2017) states that good media is a media that is practical, flexible, and durable. In this criterion, the pocketbooks made are printed using glossy paper with the aim of making them last longer and better than ordinary paper so that they will last longer.

On the eighth criterion, namely the use of flexible media both indoors and outdoors, on criterion the first, second, third, and fourth validators gave a score of four while the fifth validator gave a score of three and the CVR value of 0.99 was considered valid. In this criterion, the pocketbook media is designed to be pocket-sized measuring 14x10 cm so that it is easy to use indoors or outdoors. In accordance with the advantages of printed media can be studied anytime and anywhere because it is easy to carry (Susilana 2012).

On the ninth criterion, namely the use of language that is easy to understand, criterion the first validator gives a score of three while the second, third, fourth, and fifth validators give a score of four, and the CVR value of 0.99 is considered valid. According to (Asyhari and Silvia 2016) Textbooks contain information, messages, and knowledge as outlined in written form that can be communicated to readers (especially teachers and students) logically, easily accepted according to the stages of cognitive development of readers. In this criterion, the language used in the pocketbook is not too many terms that are difficult for students to understand so that it is easier to understand.

In the tenth criterion, the use of language in pocketbook media is in accordance with the PUEBI rules. In this criterion, the first, second, and fifth validators give a score of three, while the third and fourth validators give a score of four, and the CVI value is 0.99. For this reason, the language used must refer to good and correct Indonesian principles, a textbook must pay attention to its linguistic components. In this criterion, the writing or delivery of information in the pocketbook is in accordance with the PUEBI rules, this is intended so that the information contained in the pocketbook can be understood by all groups.

On the eleventh criterion, namely the sentences compiled in the pocket book are easy to understand, the first and third criteria give a score of three while the second, fourth and fifth validators give a score of four, and the cvr value of 0.99 is considered valid. In this criterion, the writing of information is arranged systematically so that it is easier for students to understand. This is in line with the opinion of (Rahmawati 2013) Language in communicative pocket books makes it easy for students to understand the material. Followed (Susilana 2012) The arrangement of the material text in the pocket book in

such a way that it is easy to understand. In accordance with the opinion of (Wijayanti, 2019) there is a change in attitudes, traits and characters for the better after understanding the contents of the biology pocket book.

On the twelfth criterion, which is pocket book media, it is easy to carry anywhere, on this criterion all validators give a score of four, and the cvr value of 0.99 is considered valid. In this criterion, pocket books that are small and light in size will be easier to carry anywhere by students so that they are easy to read anytime and anywhere. according to (Setyono, Wahyuningsih, and Sukarmin 2013) pocket book is a small book that can be stored in a pocket and easy to carry everywhere. and anytime can be read

#### 4. Conclusion

Based on the results of the feasibility study of the pocket book media for the use of class X biodiversity in Tonang Village, Sengah Temila District, Landak Regency, the calculated CVR value per criterion was 0.99 where this value showed that each of the twelve criteria was declared eligible to be used, which was then calculated again for looking for CVI so that it can be concluded that the contents of the pocket book media as a whole are declared feasible with an average total CVI validation of 0.99 which means it is valid, which shows that pocket books are suitable for use in teaching and learning activities.

After the existence of this pocket book, the hope is that it can help teachers and students in teaching and learning activities in class and outside the classroom and can make students understand the material more quickly, especially in the sub-material of the use of biodiversity in class X SMA. The limitations of this pocket book media feasibility study are that the author did not examine the learning outcomes and student responses after using this pocket book media. Where this can be the next research, namely to see learning outcomes and student responses to this pocket book media.

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