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#### Research Article



# Identification of Medicinal Plants Used by the Community of Watumite Village, Nangapanda District, Ende Regency as a Biology Learning Media

#### (Identifikasi Jenis Tumbuhan Obat Yang Digunakan Oleh Masyarakat Desa Watumite Kecamatan Nangapanda Kabupaten Ende Sebagai Media Pembelajaran Biologi)

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Article Information	ABSTRACT			
Submitted: 11 – 05 – 2023	The aim of the research is to find out the types of medicinal plants used by the			
Accepted: 18 – 08 – 2023	Watumite Village community, find out how to use each type of medicinal plant			
Published: 29 – 09 – 2023	used and find out what medicinal plant booklets are used by the Watumite Village			
	community. Watumite Village community is suitable for use as a biology learning			
	medium. The type of research used is research and development with the ADDIE			
	model (analysis, design, development, implementation, evaluation). This			
	research uses a qualitative and quantitative descriptive approach. The qualitative			
	approach used is to describe the types of medicinal plants used by the Watumite			
	Village community. Meanwhile, a quantitative approach was carried out by			
	calculating the results of the validation of the booklet developed which was then			
	analyzed descriptively. The results of research on medicinal plant identification			
	based on interviews with 10 respondents living in 4 hamlets in Watumite Village			
	obtained 32 types of medicinal plants originating from 22 families. The findings			
	of 32 types of medicinal plants packaged as Biology learning media in booklet			
	form have been validated by material experts and media experts with a			
	percentage value of 85% from material experts and 84% from media experts,			
	declared valid. The conclusions from this research are: (1) There are 32 types of			
	medicinal plants used by the community in Watumite Village; (2) The use of each			
	type of medicinal plant includes the part of the plant used as medicine, the type			
	of disease treated, and the method of processing; (3) Development of a Medicinal			
	Plants booklet for the Watumite Village Community is categorized as suitable as			
	a biology learning medium.			
	Key words: Medicinal Plants, Watumite Village Community, Learning Media			
Publisher	ABSTRAK			
Program Studi Pendidikan Biologi	Tujuan penelitian untuk mengetahui jenis-jenis tanaman obat yang digunakan			
FKIP Universitas Jambi,	oleh masyarakat Desa Watumite, mengetahui cara pemanfaatan setiap jenis			
Jambi- Indonesia	tanaman obat yang digunakan dan mengetahui apakah booklet tanaman obat			
	yang digunakan oleh masyarakat Desa Watumite. masyarakat Desa Watumite			
	cocok digunakan sebagai media pembelajaran Biologi. Jenis penelitian yang			
	digunakan adalah penelitian dan pengembangan dengan model ADDIE (analisis,			
	desain, pengembangan, implementasi, evaluasi). Penelitian ini menggunakan			
	pendekatan deskriptif kualitatif dan kuantitatif. Pendekatan kualitatif yang digunakan adalah mendeskripsikan jenis tanaman obat yang digunakan oleh			
	masyarakat Desa Watumite. Sedangkan pendekatan kuantitatif dilakukan			
	masyarakat Desa Watumite. Seuanykan penuekatan kuantitati Oliakukan			



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dengan menghitung hasil validasi booklet yang dikembangkan yang kemudian dianalisis secara deskriptif.. Hasil penelitian identifikasi tanaman obat berdasarkan wawancara terhadap 10 responden yang tinggal di 4 dusun di Desa Watumite diperoleh 32 jenis tanaman obat yang berasal dari 22 famili. Temuan 32 jenis tumbuhan obat yang dikemas sebagai media pembelajaran Biologi dalam bentuk booklet telah divalidasi oleh ahli materi dan ahli media dengan nilai persentase 85% dari ahli materi dan 84% dari ahli media, dinyatakan valid. Kesimpulan dari penelitian ini adalah: (1) Terdapat 32 jenis tanaman obat yang dimanfaatkan oleh masyarakat di Desa Watumite; (2) Pemanfaatan setiap jenis tanaman obat meliputi bagian tanaman yang digunakan sebagai obat, jenis penyakit yang diobati, dan cara pengolahannya; (3) Pengembangan booklet Tanaman Obat Bagi Masyarakat Desa Watumite dikategorikan layak sebagai media pembelajaran Biologi.

Kata kunci: Tanaman Obat, Masyarakat Desa Watumite, Media Pembelajaran



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### INTRODUCTION

Indonesia is an island country with a vast array of abundant natural resources. Of all the natural resources available, one of them is plants. In each region of course has a variety of different plants although almost the same. It is estimated that there are about 40,000 plant species on Earth and 30,000 living species in the Indonesian islands. Of those 30,000 species, at least 9,600 species are known to be nutritious as medicines and about 300 species have been used as traditional medicines by the traditional medicine industry. Indonesia is also rich in ethnic diversity that reaches 400 ethnicities who have a wealth of traditional knowledge about the use of plants for the maintenance of health and treatment of various diseases (Kepmenkes RI 2007). Indonesia is an island country with a vast array of abundant natural resources. Of all the natural resources available, one of them is plants. In each region of course has a variety of different plants although almost the same. It is estimated that there are about 40,000 plant species on Earth and 30,000 living species in the Indonesian islands. Of those 30,000 species, at least 9,600 species are known to be nutritious as medicines and about 300 species have been used as traditional medicines by the traditional medicine industry. Indonesia is also rich in ethnic diversity that reaches 400 ethnicities who have a wealth of traditional knowledge about the use of plants for the maintenance of health and treatment of various diseases (Kepmenkes RI 2007). This knowledge will be very different from one region to another, both ethnic and ethnic, because there are many differences that can be seen from the methods of cultivation, the processing and use of traditional medicinal plants, the customs of customs and the behaviour of local communities in each region.

The use of plants as medicines is ancient in human civilization, as evidenced by the presence of ancient manuscripts on leaves "Lontar Husodo" (Java), "Usada" (Balinese), "Lontarak Pabbura" (Southern Sulawesi), document "Serat Primbon Jampi", "Serat Racikan Boreh Wulang Dalem" and relief of Borobudur temple which depicts a man whose medicines are made of plants as a commodity (Sukandar, 2014). The ability to use plants as traditional medicine also belongs to the community of Watumite Village, Nangapanda, Ende district. Of course it can be seen from the life of a community that generally has an eye of livelihood as a farmer, so has a very close interaction with the natural environment. Scientists in the Watumite Village believe that medicinal plants have the potential to cure diseases, especially diseases in humans, which to this day people still rely on traditional medicine plants as an alternative remedy to chemical drugs. Despite the knowledge of traditional medicinal plants, most of the kinds of traditional medicine plants there are still much unknown and studied.

The basic reason why people in the village of Watumite chose to use medicinal plants to deal with the problem of disease is due to the reach of hospitals that are quite far away from the village and the lack of medical personnel in charge of the village. The community in the Watumite Village, also believes that traditional medicine plants are powerful and have the properties to cure diseases, besides the traditional medicine plant is easily available and relatively inexpensive in its use. The persistence of the use of traditional medicinal plants by the people of the Watumite Village, has existed since ancient times by their ancestors.

The use of medicinal plants by the community in the village of Watumite is of course varied, some use parts of plants such as leaves, stems and roots, either it is used with a boiled way to drink and also boiled for steam baths, there is also stung and then dioles on the affected parts and there is too through lubrication using customary language by the village physicians.

However, with the modernization of culture, lifestyles and scientific developments that are increasingly evolving, the loss of public knowledge of traditional medicine is very easy to use and use. Nowadays only certain groups, especially the villagers and the elderly in the village who still preserve the tradition, so the existence of medicinal plants little by little begins to be ignored and almost among the young generation of millennials do not know the use of traditional medicine that exists in their own village.

One way that knowledge about traditional medicine can be documented and not lose its knowledge is by creating a media like Booklet to introduce the medicinal plants that exist in the Watumite Village. Booklet is a small book that aims to convey messages or information with a simple skill in it so that with the presence of a booklet in learning not only can introduce knowledge of the use of traditional medicine plants in the watumite village, but also can be used as a reference to learning in classroom and outside the classroom in studying unknown types of plants so that it can increase the student's biology learning motivation. Besides, use of the booklet is effective in facilitating the reading of small carna with its simple shape and many colours and illustrations displayed, the content is easy to understand, the cost is relatively cheap so that can attract the interest of reading and understanding for the public to know the traditional medicine plant (Primadeka & Ariyati, 2014).

### METHODOLOGY

The research methodology employed in this study is research and development (R&D), which follows the ADDIE model with five stages: analysis, design, development, implementation, and evaluation. Research and development (R&D) refers to a systematic investigation conducted with the objective of creating a specific product, as well as enhancing and validating its properties (Jahun et al., 2022). The study employed a combination of qualitative and quantitative descriptive methodologies to elucidate the many types of medicinal plants utilized by the population residing in the Watumite village.

Regarding the quantitative technique, the validation results of the generated booklet are calculated and subsequently subjected to descriptive analysis. In the realm of research and development, the scope of activities was formerly confined solely to the development phase, primarily due to limitations imposed by time and financial constraints. Consequently, researchers have adapted by devising three distinct development models, namely analysis, design, and development. The researchers at the Catholic Junior High School of Santa Familia Kupang will conduct the stage implementation and evaluation of a study focused on the classification of living things. This study will involve students from class VII. The researchers will employ three research models to enhance the existing research and development model used in accordance with the researchers' timeline.

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## **RESULT AND DISCUSSION**

The product developed in this research is a web-based interactive learning media using google sites on the ecosystem material of X high school class. The results of this research can help the learning process of students with the help of already developed learning media. This research has used the Research and Development (R&D) method with a 4-D research design modified to 3-D. The 3-D phase includes the Definition phase, the Design phase and the Development phase (Develop).

The results of the research of 32 kinds of medicinal plants and the use by the community in the village of Watumite, developed as a biology learning medium in the form of booklets. The design of the booklet can be seen in Figure 1 below.

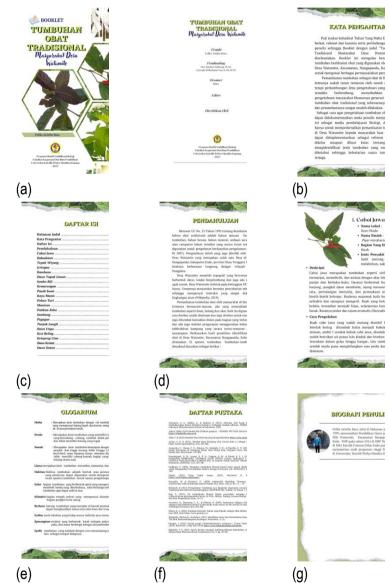


Figure 1. The design of the Booklet ; (a) Cover, (b) Preface, (c) List of content, (d) Content, (e) Glosarium, (f) References, (d) Biography of the writer.

The results of the design of the booklet in Figure 1 are then validated by two validators in this case the validator of the media expert and the expert validator in order to know the validity that has been made.

Table 1. Validation of Content and Media Expert							
No	Validator	SM (Total Aspect x Total Score)	R	NP (%)	Criteria		
1.	Expert of content	8 x 5 = 40	34	85 %	Valid		
2.	Expert of media	17 x 5 = 85	72	84 %	Valid		
		Average		84,5 %	Valid		

Based on table 1, the validation presentation value of the material expert is 85%, and the validation presentation of the media expert is 84%. Seeing from the validity criteria, the percentage of material and media aspects is declared valid. On the basis of the average calculation of the presentation of both validators, the presentation value is 84.5%. Then it can be concluded that the booklet The Watumite Village Community Medicine Belongs to the valid criteria and deserves to be used as a Biology learning medium.

Based on the results of the study, the 32 species of medicinal plants obtained in table 3 are divided into 22 families, the most commonly found families are the Astraceae family (8 species) consisting of Agreatum conyzoides (Babadotan), Emilia sonchifolia (Tempuh Wiyang), Dichrocephala integrifolia (Jukut Meurit), Chromolaena odorata (Kirinyuh leaves), Cyanthillium cinereum (Sawi Langit), Elephamtopus scamber L. (Tapa Liman leaves), Blumea blasamifera (Sembung leaves), and Crassocephalum crepidioides (Sintrong leaves).

According to Rahmawati, I., & Sulistiyowati, T. I. (2021) the family Asteraceae is the second-largest family in the kingdom of Plantae, which lives throughout the world's habitats, making it very easy to find. Members of the family Asteraceae are varied in the form of yearly or perennial plants, some of which have beautiful kinds of flowers so that they have high economic value as medicinal plants or ornamental plants.

Seeing from the kinds of plants that are grouped according to the habitus or their origin that are found in the village of Watumite is varied such as herb habitus, bushes, peras, lianas, trees or epiphytes used as medicines in the table 3, the type of habitus most widely used by the community is herb. Menurut Bown (1995) in Lestari, D et al. (2021) Herb habitus is widely used by the community, because herb is a kind of plant that is easily obtained and abundant. In addition, many found in the marketplace of the house because this plant is so easy to treat so much cultivated, which of course the use of the type of herb has been widely used as a medicinal plant because it has some parts of the plant that can empirically treat diseases.

In the table 3 shows that the portion of the plant used by the community of the village Watumite as a medicine of course varies either using leaves, seeds, skin, fruit, flowers, bulbs or rimpang. Of the part of the plants that are most often used by people of the Village Watumites are leaves. In general, the type

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of plant used as a medicinal part of leaves as a large is a plant that lives around the plantation as well as the households that are cultivated by the society so that it is easy to obtain. According to Leisha (2017) in Boimau, D. T et al (2022) leaves are easier to use to take the properties of plants. Besides, the leaves are easy to take, easy to re-grow when stained and easy for you. According to Pelokang, C. Y et al. (2018) the leaf part is almost always abundant in nature, very easy to find, the collection and processing of leaves belong very easy and simple. The properties of the leaves are known to be more healing than the other parts of the plant.

In addition to other plant organs such as root parts, fruits, skins there are some plant species also used by the community of the village Watumite as a medicine, such as the root parts of plants *i.e.* Maniran (*Phyllantus urinaria*), Gingseng Jawa (*Talinum piniculatum*), Tapa Liman leaves (*Elephamtopus scamber*) and Giringsingan (*Hyptis suaveolens*), skin part such as Pasak bumi (*Eurycoma longifolia*), Kayu Manis (*Cinnamomum verum*), Pohon Turi (*Sesbania grandiflora*), fruit part such as Jambu Biji (*Psidium guajava*), Cabe Jawa (*Piper retrofrsctum*), Tunjuk Langit (*Helminthostachyz zeylanica*), flower part such as Babadotan (*Agreatum conyzoides*), Patikan Kebo (*Euphorbia hirta*), stem part such as Bambu Jepang (*Pseudosasa japonica*), bagian umbi yaitu Rumput Teki (*Cyperus rotundus*), seed part such as Kasingsat (*Senna occidentalis*), dan wreckage part such as Jeringau (*Acorus calamus*).

### CONCLUSION

The results of the research on the identification of medicinal plants were based on interviews with 10 respondents who lived in 4 villages in the village of Watumite. The findings of 32 kinds of medicinal plants packed as biology learning media in the form of booklets have been validated by materialists and media experts with a percentage of 85% of material experts and 84% of media experts, declared valid. The conclusions of this study are: (1) There are 32 kinds of medicinal plants used by the community in the village of Watumite; (2) The use of each type of medicine crop covers the portion of the plant used as a medicine, the type of disease treated, and the way it is treated; (3) The development of a booklet of Medicinal Plants for the community of the village is categorized as qualifying as a biological learning medium.

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