



Original Research



Development of morphological characterization magazine of Terigas tangerins (*Citrus reticulata* Blanco) at Mekarsari citrus picking tour, Blitar Regency

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ARTICLE INFO	ABSTRACT (Cambria 10)
Article history: Received date: 13 th March 2021 Revised date: 8 th April 2021 Accepted: 29 th May 2021 Published: 28 th June 2021	<p>This study aims to develop learning media in the form of magazines resulting from the morphological characterization of the Keprok Terigas citrus plant and to determine the level of feasibility. This type of research is research and development (R&D), with the first phase of qualitative research aiming to determine the morphological characterization of the Terigas Tangerine plant (<i>Citrus reticulata</i> Blanco). Data collection using observation and documentation methods. The second stage is the development of the magazine learning media product using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). This research was only carried out until the implementation stage. The results of the first stage of research, namely the morphological characterization of citrus plants with tree stature and dark brown taproots. The stem is cylindrical in shape, the direction of growth is straight (slightly bent on top), the texture is strong and sturdy, and the color is brownish green. The leaves are compound, oval-shaped elongated, the base of the leaves is blunt, the tips of the leaves are pointed, the edges of the leaves are serrated, the upper surface is shiny, and the lower surface is rough, and the leaves are green. The flowers include compound flowers with a complete arrangement of yellowish white, and have two sexes, namely stamens and pistils. The flowers on this plant have the formula ($\bar{\square} * K_5, C_5, A_{16}, G_1$). The fruit is a single true fruit that is fleshy, round and greenish yellow in color, and the seeds are oval-shaped yellowish white. The results of the second stage, namely research on the morphological characterization of the Terigas Tangerine plant (<i>Citrus reticulata</i> Blanco) was developed as a magazine, and validated by material experts, media experts and lecturers in Plant Anatomy and Morphology courses, each obtained a percentage of 76.4% (decent), 95% (very decent), and 85.2% (very decent). The results of the student legibility test on the feasibility of the magazine learning media obtained an average percentage score of 91.5%, which stated that this magazine was suitable to be used as one of the learning media to study Plant Anatomy and Morphology courses.</p>
Keywords: Development Research, Magazines, Learning Media, Morphology, Citrus Plants	

INTRODUCTION

Living things are one of the most extensive research objects, therefore it is necessary to study one aspect of living things in more detail and specifically. One of

the sciences that study living things is Biology. Biology is a science that has a characteristic by studying living things and their lives and their interactions with the universe (Darmawan, 2021). Biology has developed into various scientific branches, including Botany (which studies plant life), Zoology (which studies animals), Morphology (which studies the composition of plants), and many other branches of biology (Widya et al, 2019). Morphology is the study of the structure of the body in a plant. Morphology observes studying the shape and outer structure of plants (Tjitrosoepomo, 2011). The study of Morphology is discussed at the university level in the subject of Plant Anatomy and Morphology. So far, educators in teaching use learning media as a support for learning activities. Learning media is an object, tool, technique, a messenger, and a background used by students as a source for learning activities that aim to improve the quality of learning (Supriyadi, 2015). Learning media that discuss specifics about plant morphology are still limited and some only contain material, not yet accompanied by the latest images. Based on this, learning media is needed that can be used to recognize morphology in plants, one of which is in the form of magazines.

Magazine is one of the visual learning media with an interesting form of information presentation and can contain the latest information, magazines are used to attract interest for their readers because they can provide pleasure during the learning process. Magazines were chosen as learning media because they have several advantages, including they can be used for independent study, are more practical and efficient, making it easier to understand the content of the material to be delivered, and can add insight to the readers (Syukur et al, 2021). According to research conducted by (Pratiwi et al, 2017) magazines can add a variety of learning media that can support student learning independently, biology magazines developed on the subject of Protista are suitable for use in the process of learning activities. In addition, research by (Selviani and Anggraini, 2018) shows that the magazine that has been developed has received a good response, with an average rating in the good category and is very suitable to be used as a learning medium. The magazine that will be developed in this research is a type of scientific magazine. Scientific magazines generally contain scientific writings or studies of a scientific nature, such as the results of research conducted directly (Lasa and Purwani, 2014). The scientific magazine that will be developed is the result of research that discusses the characterization of plant morphology.

Morphological characterization is the observation of physical properties or characteristics in the form of roots, stems, leaves, fruits, flowers, fruits, and seeds of a plant. Characterization of plant morphology is very important to know the special properties possessed by a plant (Hardiyati et al, 2018). The morphological characterization observed was in citrus plants. Orange is an annual fruit plant originating from Asia. The composition of citrus fruits consists of 70-92% water (depending on the quality of the fruit) organic acids, sugars, amino acids, vitamins, dyes and minerals. Citrus fruits have a high vitamin C content which can be beneficial for health. Vitamin C acts as an antioxidant in the body, can prevent heart cancer and premature aging (Mutaqin, 2020). Citrus fruits are much favored by the community and have various types. One of them is the type of Tangerine Terigas (*Citrus reticulata* Blanco) which has a sweet taste and thick flesh. Tangerines contain folate, beta-carotene, 1.5 grams of fiber, more vitamin A than ordinary oranges, and have 40

calories. Vitamin A contained in tangerines is beneficial for eye health (Fitriana et al, 2020). The characteristics observed in this tangerine plant are the organs of the roots, stems, leaves, flowers, fruits, and seeds.

Through this research, it is hoped that a product can be obtained or developed in the form of a magazine characterizing the morphology of the Terigas Tangerine (*Citrus reticulata* Blanco) which can be used by students to study Plant Anatomy and Morphology courses as well as knowledge insights for the general public and their readers.

MATERIALS AND METHODS

This research was conducted in a period of approximately 5 months, starting in December 2020-April 2021 which took place at the Petik Jeruk Mekarsari Tourism, Blitar Regency. The tools and materials used in this study were writing utensils, black buffalo paper, knives or cutters, plastic clips, observation tables, cameras, and microscopes. This research is a type of research and development (Research and Development) with two stages. The first stage begins with a qualitative research (descriptive) which aims to determine the morphological characterization of the Terigas Tangerine plant (*Citrus reticulata* Blanco) at the Mekarsari Orange Pick Tour, Blitar Regency. The population in this study were all tangerine plants in the Petik Jeruk Mekarsari tour, Blitar Regency. Sampling using observation and documentation methods. Observations were carried out directly by observing the characters of the roots, stems, leaves, flowers, fruits, and seeds of the Tangerine Terigas plant (*Citrus reticulata* Blanco) at the study site, as well as recording the observations that had been obtained. The results of the observations were recorded in the form of instruments for observing the roots, stems, leaves, flowers, fruits, and seeds of the Terigas tangerine plant. Documentation is done by taking pictures during the research. Data analysis in the first stage was carried out by means of data tabulation and descriptive analysis. The second stage was the development of instructional media such as magazines using ADDIE development model consisting of five stages, namely Analysis, Design, Development, Implementation, and Evaluation. The instruments used in testing the learning media that will be developed, namely there is a grid of instruments and instruments for the feasibility of learning media for material experts, media experts, and supporting lecturers, as well as a readability test questionnaire instrument for students who have taken the Plant Anatomy and Morphology course totaling as many as 15 respondents. This research was only carried out until the implementation stage, due to time constraints.

Data analysis was carried out qualitatively and quantitatively, namely an assessment of the feasibility of learning media to find the percentage score with the formula:

$$K = \frac{P}{M} \times 100\%$$

Description:

K: Feasibility

P: Total score obtained

M: Total score Maximum

Percentage value obtained from the feasibility test then used as qualitative data. The percentage score category refers to the guideline for interpretation of the validation assessment category which is presented in table 1 below:

Table 1. Interpretation of the Validation Assessment Category

No.	Score	Category
1.	$81,25\% \leq \text{score} < 100\%$	Very Eligible
2.	$62,50\% \leq \text{score} < 81,25\%$	Eligible
3.	$43,75\% \leq \text{score} < 62,50\%$	Less Eligible
4.	$25\% < \text{score} < 43,75\%$	Not Eligible

(Quoted from Fatmawati, 2016)

RESULTS AND DISCUSSION (Arial 11)

First Phase Research (Qualitative)

Based on research that has been carried out in the field regarding the morphological characterization of the Terigas Tangerine plant (*Citrus reticulata* Blanco), the results obtained are as follows:

Table 2 Observation of Morphological Characterization of Citrus Roots

No.	Characteristics	Description
1.	Stature	Tree/wood
2.	Rooting system taproots	Penetrates into the soil
3.	Branching roots	Small long fibers
4.	Root color dark	Brown

Table 3. Observation of Morphological Characterization of Citrus Stem

No.	Characteristics	Description
1.	Types of stems	Woody
2.	Stem and directions branch growth	Perpendicular, slightly bent at the top
3.	Stem shape	Round
4.	Branching type	Sympodial

5.	Stem surface	Rough, thorns found on young stems
6.	Stem color	Brownish green

Table 4. Observation of Morphological Characterization of Citrus Leaves

No.	Characteristics	Description
1.	The location of leaf	At the end of the stem
2.	Filotaksis	Interleaved
3.	Stipule (stipules)	Having stipule
4.	Compound leaves or single	Leaves compound
5.	Strands leaf shape	Round (somewhat elongated oval)
6.	Leaf edge	Jagged
7.	Leaf base	Rounded (to form an obtuse angle)
8.	Leaf tip	Taper
9.	Top leaf surface	Smooth, slick, and looks shiny
10.	Down leaf Surface	Rough
11.	Leaf bone	Pinnate (irregular, but there are alternates)
12.	Leaf texture	Coriaceous (like skin)
13.	Young leaf color	Light green
14.	Dark leaf color	Green

Table 5. Observation of Morphological Characterization of Citrus Flowers

No.	Characteristics	Description
1.	Location of flowers	Leaf axillary bundle
2.	Type of inflorescence	Compound interest
3.	Bract/not bract	Undecided (has a supporting leaf)
4.	Flowers with stalk/sitting	Short stalk

5.	Flowers complete	Incomplete flowers
6.	flower symmetry	Radial
7.	Gender flowers	Hermaphrodite
8.	Multiple flowers	5 crowns
9.	Position of the ovary	Hypogyn
10.	Flower arrangement	Cyclic (located in a circle)
11.	Flower color	Yellowish white
12.	Flower base	Discus(disc)
13.	Compound or single flowers	Compound flower
Petals (<i>Calix</i>)		
14.	Number of petals	5
15.	Polypetalus/gamapetalus	Polypetalus
16.	Shape of petals	Lanceolate
17.	Color of petals	Greenish white (light green)
Crown (<i>Corolla</i>)		
18	Number of petals	5
19.	Polycephalus/gamecephalus	Polycephalus
20.	Shape of crown	Lanceolate
21.	Remain attached/free	Remain attached
22.	Color of crown	White
Male Sex Organs (<i>Andresium</i>)		
23.	Number of stamens (stamens)	Many and fused (4-3-4-4)
24.	Reduced	Fertile stamens
25.	Polyandrus	-


26.	Epipetalus	-
27.	Stamen shape	Pot
28.	Stamen long/short	Long
28.	Diplostemon/obdiplostemon	Obdiplostemon
29.	Location of anthers	Located at the end of the stamen stalk
Female Genital Organs (<i>gynoecium</i>)		
30.	Number of carpels (pistils)	1 (monokarpel)
31.	Attachment of fruit leaves	Parakarp
32.	Superus/semiminiferus/inferus	Superus
33.	Number of chambers	Many
34.	Number of ovules	Many
35.	Place of placenta	Axilar
36.	Number of pistils	1
37.	Flower formula	$\text{\textcircled{Q}} * K_5, C_5, A_{16}, \underline{G_1}$
38.	Flower diagram	

Table 6. Observations Morphological Characterization of Citrus Fruits

No.	Characteristics	Description
1.	Type of Fruit	A single true
2.	Fruit Shape	Round
3.	Color unripe fruit	Green
4.	Ripe fruit colors	Yellowish green/orange
5.	Meat fruit	Thick
6.	Fruit flesh color	Orange

Table 7. Observations Morphology Characterization Seed Citrus

No.	Characteristics	Description
1.	Seed	Shell Outer shell: yellowish white, skin-like texture Inner shell : greenish-white, smooth and smooth texture
2.	Seed core	There are institutions and white
3.	Number of seeds	Large
4.	Seed shape	Egg-shaped

Characterization results in Morphology of the Tangerine Terigas plant (*Citrus reticulata* Blanco) at Wisata Petik Jeruk Blitar Regency, citrus plants with tree stature, have strong roots that can penetrate into the soil. The root system in citrus plants is a taproot, in which the primary roots have small root branches with a complex and irregular arrangement. The roots of citrus plants are dark brown. The root system of citrus plants depends on the amount of nutrients contained in the soil (Sukri and Haryono, 2016).

Citrus stems are included in the type of woody stems that are sturdy and strong, the direction of growth of the stems is perpendicular to slightly bent above it, the shape of the stems is round and cylindrical. The stems of citrus plants have a rough surface and there are thorns on the young stems. The old stems are brownish green, while the young stems are green. The average citrus plant height can reach 2-5 meters. Branching stems of citrus plants are included in sympodial which means it is difficult to determine between true stems and branched stems. This is because the true stem stops its growth so that the growth of the branches dominates. Trunk growth is less fast than the growth of branches. The leaves of citrus plants are classified as compound leaves (*folium compositum*), pinnate (leaves alternate *pinnatus*), have an elongated oval leaf shape (*oblongonous*), the base of the leaves is blunt, the tips of the leaves are pointed (*actus*), and the edges of the leaves are serrated (*crenatus*).), and has a strong, leather-like texture (*coriaceus*). The leaves of citrus plants have a smooth top surface (*leavis*), the top side of the leaf looks smooth and shiny (*nitidus*). The lower surface of the leaves of citrus plants has a rough texture (*scaber*) due to the protrusion of the leaf bones (Tjitrosoepomo, 2011). The leaves of young citrus plants are light green and those that are mature are dark green. If the lime leaves are squeezed, it will release an aroma according to the type of orange (Aak, 1994).

Citrus flowers include compound flowers, yellowish white, also includes sissy flowers which means they have two sexes, namely male and female. The female genitalia (pistil) is cylindrical in shape, oval and elongated, the pistil is green and the head is larger, has a bright yellow color, and looks shiny. The male genitalia (stamen) is in the shape of an elongated pot, the stem is transparent white and the head

attached to the stem is larger with a shape resembling a bright yellow bean. The head of the stamen contains pollen grains which are then fertilized by the pistil. Orange plant flowers are complete flowers that have flower decorations in the form of petals and crowns. Petals (*calix*) in the citrus leaf blade of five petals are light green, shaped like a bowl leaf sheath diameter. The crown on citrus plants is lanceolate elongated, white, and in the middle it looks like there is a hollow. The base of the flower is shaped like a bowl or disc (*discus*) and the ovary includes hypogyn (*hypogynous*). The ovules are one in each flower, with plenty of ovule space. The formula for the orange flower is ($\bar{\square} * K_5, C_5, A_{16}, \underline{G}_1$) which means bisexual flower or sissy flower (*hermaphrodite*), has actinomorphic symmetry, five petals are not attached, five petals are not attached, sixteen stamens with a unified arrangement, and the pistil is one located at the base of the flower (Tjitrosoepomo, 2011). The flowers have a distinctive aroma that attracts attention to insects such as bees (Sunarjo, 2004).

The fruit on the citrus plant belongs to a single type of true fruit that is fleshy. The fruit on this plant has a morphology that is round, but there is also an oval shape. Oranges that are still young will be yellowish green, while the ripe fruit will be yellowish green. The surface of the skin on the fruit when touched has a slightly rough texture. This fruit is also included in the variety of buni fruit (*hesperidium*), the skin of the fruit has three layers. The outer layer is called the flavedo, the middle layer is called the albedo, and the inner layer is insulated. Citrus fruit when peeled will emit a distinctive smell. The flesh of citrus fruits is thick in texture and contains water droplets. The color of the orange flesh is orange, the orange flesh has a partition that forms several spaces in each part. Each part of this space will have watery grain bubbles in which there are free seeds between the bubbles (Tjitrosoepomo, 2011). The seeds of the Terigas Tangerine fruit are oval in shape, the tip is tapered and the base is blunt. The color of the seeds is yellowish white, in one fruit there are many seeds. Citrus seeds are generally polyembryonic, that is, each seed grows more than one shoot, one from the embryo and the other from the seed coat (Sunarjono, 2004). Pictures of the research results of roots, stems, leaves, flowers, fruit, and seeds of the Tangerine Terigas orange plant are presented as follows:



Gambar 1. Root

(source: personal doc.)



Gambar 2. Stem

(source: personal doc.)

Gambar 3. Stem of
simpodial

(source: personal doc.)



Gambar 4. Leaves

(source: personal doc.)



Gambar 5. Flowers

(source: personal doc.)



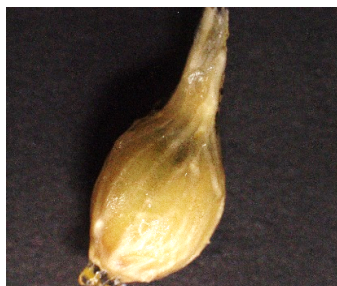
Gambar 6. Flower Diagram

(source: personal doc.)



Gambar 7. Fruit

(source: personal doc.)



Gambar 8. Seed

(source: personal doc.)



Gambar 9. Seed cleavage

(source: personal doc.)

Research Phase Two (Development)

Analysis

Analysis is a stage that aims to find out or collect information about the product to be developed. This stage is divided into two, namely performance analysis and needs analysis. Performance analysis is carried out by making a needs analysis questionnaire which will later be given to students, the questionnaire is made aiming to find out the needs of magazine learning media in the learning activities of Plant Anatomy and Morphology courses. The needs analysis is carried out by distributing the needs analysis questionnaire that has been made to students who have taken the plant Anatomy and Morphology course via google form. In addition, he also conducted interviews with lecturers in the subject (Plant Anatomy and Morphology) regarding learning activities during class and the development of magazine products to be made, as well as analyzing the Learning Implementation Plan for the Plant Anatomy and Morphology course regarding material points morphology in plants.

The results of the RPS analysis for the Plant Anatomy and Morphology course which weighs 3 credits with the details of 2 credits learning is done in the classroom, and 1 credit outside the classroom. Based on the Semester Learning Plan (SLP) analysis, students are expected to be able to understand the morphological structure of roots, understand the morphological structure of leaves, understand the morphological structure of flowers, understand the morphological structure of fruit, and understand the morphological structure of seeds. These indicators are used as

development guidelines in meeting the criteria for learning media in the form of a magazine characterizing citrus plants (*Citrus reticulata* Blanco).

The results obtained in conducting interviews with lecturers in Plant Anatomy and Morphology courses on February 7, 2021, namely that students experienced several difficulties in Plant Anatomy and Morphology courses, including not understanding the material in detail, this could happen because of the scope of the material. which is so wide, the lecture time is less effective, and one of the facts is also the ability and limitations of the information media obtained by each student to support learning activities. The strategies used during the course learning activities are presentations, discussions, and out-of-class practice. The learning resources used during the course learning activities are books, the latest research journals, PPT (power point), videos, and pictures of the material. Indicators in achieving competence during lectures have also been achieved well. The lecturer in the course of Plant Anatomy and Morphology explained that so far there have been handbooks in studying plant morphology, but he also agreed that other learning media in the form of magazines were presented with attractive appearances, accompanied by appropriate content and images, so that they could add information, understanding, and insight of students related to morphological material in plants.

Questionnaire analysis of learning media needs was distributed to Biology Tadris students of IAIN Tulungagung who had taken Plant Anatomy and Morphology courses via *google form*. The results of the needs analysis questionnaire that had been given and filled out by 40 students stated that 70% of students had difficulties in studying the Plant Anatomy and Morphology course which could be caused by the large number of learning materials, lack of information media, and ineffective lecture time. There were 62.5% of students who did not have a handbook for studying plant morphology and 37.5% who already had a handbook. Students who already have booklets include Plant Morphology by Gembong Tjitrosoepomo, Campbell, and Plant Anatomy by Sri Mulyani. Students who do not have a handbook, use modules, journals, scientific articles, papers and materials from lecturers. Judging from other questions, 65% of students answered lecturers in giving explanations usually using learning media such as power point with supporting pictures, reading books or modules, and supported by simple practicum, based on the learning media used by lecturers and handbooks owned by students 65% of students have been able to understand and practice using plant-based methods directly in the field and 35% have not been able to understand and practice using plant-based methods. All students answered that they needed interesting and easier to understand teaching materials in studying plant morphology, so 100% of the students answered they agreed if the learning media in the form of magazines was developed. This is in accordance with the answers from students that 85% answered that they had never encountered learning media in the form of magazines about plant morphology and with the development of learning media magazines 97.5% of students answered that they were helped in learning about plant morphology and could broaden their knowledge of the material.

Design

In this design stage, the process of material preparation and product planning is carried out. The material contained in the magazine comes from the

results of the morphological characterization of the Terigas Tangerine plant (*Citrus reticulata* Blanco) at the Mekarsari Orange Pick Tour, Blitar Regency. In the magazine, the material presented is equipped with the latest images that are in accordance with the research. The magazine consists of three parts, namely the front cover, the content component, and the back cover which are presented in the following table:

Table 8. Components of Magazine Learning Media

No.	Part	Component
1.	Beginning	Front cover
2.	Fill component	a. Foreword b. Overview c. Table of contents d. Verses that Discuss about Plants e. Tourism Profile f. Definition of Citrus Plants g. History of Citrus Plants h. Terigas Tangerine Plants i. Material Morphology j. Root Morphology Material k. Stem Morphology Material l. Leaf Morphology Material m. Flower Morphology Material n. Fruit Morphology Material o. Seed Morphology Material p. Material Content in Citrus Plants q. Material Benefits on Citrus Plants r. Citrus Cultivation Materials s. Pests and Diseases on Citrus Plants t. Bibliography u. Author's Profile
3.	End of page	Back cover

Development

This stage of development is the realization of the magazine product that has been developed, so that it becomes a product that can be used. This morphological characterization magazine for the Terigas Tangerine plant (*Citrus reticulata* Blanco) consists of 58 pages, and will be printed using paper *Art* with ISO A4 standard size (21 cm×29.7 cm). The cover page will be printed using paper *Art paper* whose oversized thicker than the contents of the page. Here is presented a picture of part of the cover page(*cover*) magazine and part of the page contents.

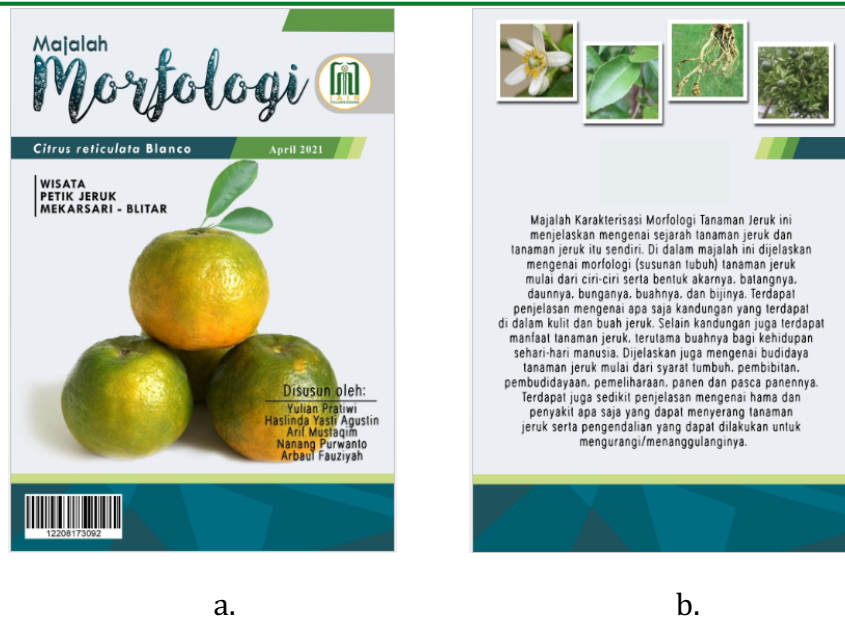


Figure 1. a) Front cover of the magazine and b) back cover of the magazine

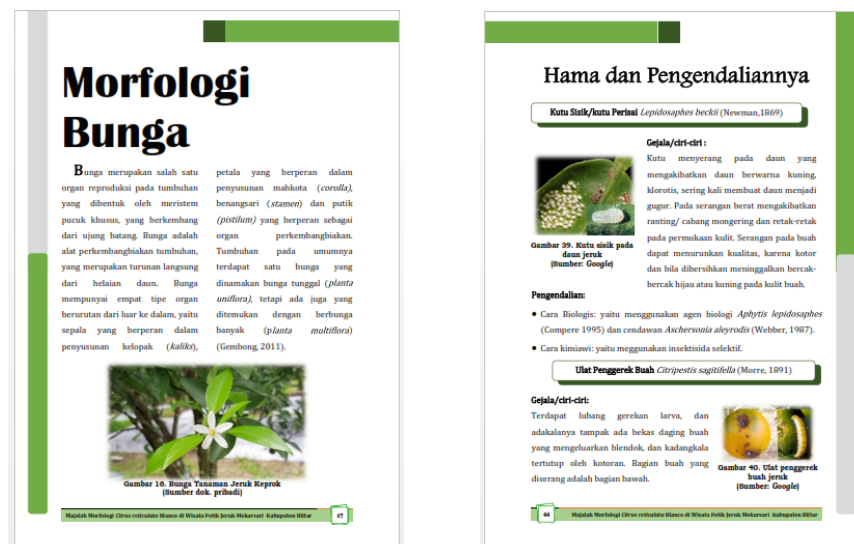


Figure 2. The content page of the magazine

In this development stage, validation assessment was also carried out by several experts, namely material experts, media experts, and lecturers (Plant Anatomy and Morphology course) on the feasibility of the magazine for the morphological characterization of the Terigas Tangerine plant (*Citrus reticulata* Blanco) that has been developed. Validation by material experts regarding the theme, learning content material (presentation of material), and the order of components contained in the magazine. The results of the validation carried out by material experts, obtained a score percentage of 76.4%, which stated that the magazine was suitable for use but with minor revisions. The citrus plant morphology magazine has a theme and presentation of related material content, so that it can provide appropriate information. According to (Simamora and Rosmaini 2019), with the suitability of the score obtained from the validation of material experts, the magazine

can already be used as a medium of learning and information in terms of the material aspects of its content.

Validation by media experts regarding the components in the magazine and aspects of presentation which consist of components of design, language, images, and the benefits of learning resources. The results of the validation carried out by media experts, obtained a percentage score of 95%, which states that the magazine is suitable for use without revision. The citrus plant morphology magazine has an attractive display design and image fit, and has several components arranged in sequence. The attractiveness of the appearance in the magazine is in accordance with (Ratnasari and Romi 2017), that in its presentation the magazine is presented in an attractive format and with excellent display quality. It also contains several components, namely a page cover (front) of the table of contents, page containing biological info, scientist profiles, roles, brain teasers and a page cover (back). In addition, with the appropriateness of the score obtained from the validation of media experts, magazines can already be used as learning media in terms of the media aspect of their appearance (Reflihadi, 2020).

Validation by the supporting lecturer (Plant Anatomy and Morphology course) regarding the presentation of material consisting of aspects of the feasibility of presenting content and aspects of usefulness for learning. The results of the validation carried out by the supporting lecturers, obtained a score percentage of 85.2%, which stated that the magazine was suitable for use but with minor revisions. The citrus plant morphology magazine has a presentation of contents that is easy to understand and can add new insights, in accordance with (Arsyad, 2013) which states that the magazine contains presentations of content and educational information that can increase curiosity to learn about it and can add insight to its readers. In addition, according to (Srikandi et al, 2019), with the suitability of the score obtained from the validation of the lecturer in charge of courses (Plant Anatomy and Morphology), the magazine can already be used as a learning medium in studying morphological material in plants.

Implementation

Implementation stage is the stage that aims to determine the feasibility of a product that has been developed with a test (the application) to students who have taken the course Anatomy and Morphology of Plants. The trial was carried out by giving a readability test questionnaire to students, totaling 15 respondents to determine the feasibility of the magazine as a learning medium. The results of the legibility test on the magazine obtained an average total score of 95.1%, which stated that the magazine was very suitable to be used as a learning medium in studying Plant Anatomy and Morphology courses. According to (Pratiwi et al, 2017), the results of the trial of the magazine product morphological characterization of the Terigas Tangerine plant (*Citrus reticulata* Blanco) using a readability questionnaire obtained are very feasible and suitable for use by students as one of the learning media in recognizing and studying the Anatomy and Anatomy course. Plant Morphology, especially the morphology found in citrus plants, besides that by developing this magazine, it is hoped that students can directly practice morphological imaging on plants, especially citrus plants during practical activities in the field.

CONCLUSIONS (Cambria 12)

Based on the research and development that has been carried out, the following results were obtained:

1. The first stage of research, based on the results of the morphological characterization of the Tangerine Terigas plant (*Citrus reticulata* Blanco) in the Petik Jeruk Mekarsari tourist area, Blitar Regency, namely citrus plants with tree stature and taproots, and dark brown. The stems of citrus plants are cylindrical in shape, the direction of growth is straight (slightly bent on top), the texture is strong and sturdy, and the color is brownish green. The leaves on plants are citrus compound, oval-shaped elongated, the base of the leaves is blunt, the tips of the leaves are pointed, the edges of the leaves are serrated, the upper surface is shiny, and the lower surface is rough, and the leaves are green. Flowers on citrus plants include compound flowers with a complete arrangement of yellowish white, and have two sexes, namely stamens and pistils. The flowers on this plant have the formula ($\bar{Q} * K_5, C_5, A_{16}, G_1$). The fruit in citrus plants is a single true fruit that is fleshy, has a round shape and is greenish yellow in color, and the seeds are oval-shaped and yellowish white.
2. The second stage of research, based on the results of the morphological characterization of the Terigas Tangerine (*Citrus reticulata* Blanco) in the Petik Jeruk Mekarsari tourist area, Blitar Regency, was carried out the development of learning media in the form of a magazine consisting of several components, namely the beginning, the content, and the end. The magazine learning media is validated by material experts, media experts and lecturers in the Anatomy and Plant Morphology course. The validation results obtained from material experts are 76.4%, media experts are 95% and lecturers in Plant Anatomy and Morphology courses are 85.2% (very feasible). The results of the student readability test on the feasibility of the magazine learning media obtained an average percentage score of 91.5%. Based on this, it can be concluded that the magazine morphological characterization of the Tangerine Terigas citrus plant is appropriate to be used as an additional learning medium for studying plant anatomy and morphology courses.

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