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IDENTIFICATION OF CHEMICAL COMPOUNDS CONTAINED IN LEAVES OF METHANOL LEAVES OF KAPUK HALMAHERA (Ceiba Petandra)

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ABSTRACT

Introduction: Kapok leaves are a type of leaves that are easily available in tropical regions such as Indonesia. The use of kapok leaves as a febrifuge is an alternative to the use of drugs in general, besides being easy to be economical. The purpose of this study was to identify the chemical compounds contained in the leaves of Kapuk Halmahera methanol extract. The type of research used in this study is a pure experiment conducted at the Halmahera STIKES Pharmacy laboratory. His separation technique is meseration using the GC-MS method. The results of the research showed that the leaves of Kapah Halmahera contained the highest compound (9E) -9-octadecanoid acid 13.18%, and the lowest one was Farneso isomera compound 1.89%. Mass Spectrometry Cromotography) can be concluded that the Halmahera kapok leaves contain the highest compound (9E) -9-octadecanoid acid 13.18%, and the lowest one is Farneso isomera compound 1.89%.1 It is expected that the results of this research can be a reference to further research.2 It is expected that the Indonesian people can again use herbal ingredients as an alternative treatment media by utilizing the plants that are around so that Indonesian culture can be completed.

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INTRODUCTION

Herbal medicine is a type of medicines derived from plants. In developing countries most still use herbal medicine to meet its health needs, according to the World Health Organization (WHO), the United States 42% of the population uses herbal medicine, English 40%, Canada 70%, French 49%. Likewise the use of herbal medicines in Asia, in which Indonesia use of herbal medicines 70%.¹

It is by making use of parts of the plant as the raw material of manufacture of drugs. Herbal medicine has no side effects such as chemical drugs. In the 19th century, scientists began to discover that all the drug content of chemicals they use the same as that found in plants, since it began to be made of synthetic drugs which all the materials used are herbal medicines. Research conducted by the World Health Organization (WHO) found that about 80% of people use herbs as a herbal medicine for primary health care them.²

Leaves Kapok (*Ceiba pentandra*) is a tropical tree that is widely grown in Asia. Kapok tree drops a flower with a height of 8-30 m and a tree can have a fairly large tree trunks up to a diameter of 3 m. Kapok tree has fruit elongated shape with a length of 7.5-15 cm, hang, crustaceans and are green when young and brown when already elderly. In the fruit seeds are surrounded by fine hairs, yellowish fiber that is a mix of lignin and cellulose. The shape of the seed round, small, and colored black.³

Plant height can reach 70 meters, Kapok trees often attract attention by creating a 'blizzard' due to strands of cotton are falling. The benefits of this Kapok tree, 26% from the kapok tree is the seed, commonly called kapok klinteng. seed is capable of producing a better cooking oil from palm oil. Because Kapok oil does not contain cholesterol, odorless and contain omega 3, 6, and 9. as high fatty acid content, kapok oil is easily rancid, so it is less recommended as oil eating.⁴

Processing of cottonwood leaves as an herbal remedy. First picking cottonwood leaves of the tree and then washed with running water and rinse the leaves kapok use water to clean and then be put in a container such as a bowl or so then give water to be drunk in moderation so that leaves submerged by water entirely, at the time of immersion do the kneading on cottonwood leaves until the water in the container turns green and the leaves are already in ruins hinga water texture to be like a lender that is not too thick, then filtering to obtain fluid from cottonwood leaves them and accommodated in a glass or container ready drunk and potions result of cottonwood leaves ready for consumption for febrifuge. While the last dregs of the screening results can be made to compress the patient's body heat illness. Note that the liquid has a temperature of cottonwood leaves cold

temperature to minimize heat and assisted with the content contained in the leaves kapok.⁵

Kapok is a kind of foliage leaves are easily available in tropical regions such as in Indonesia. Utilization of cottonwood leaves as an herbal remedy for fever is an alternative to the use of drugs in general, in addition to easy in can also be economical and does not cause side effects that can be used by the public. This is a good step for the cultivation of medicinal plants in Indonesia artifacts. So that people do not experience dependence if difficult to get lowering drugs hot.⁶

Formulation of the problem

Based on the description of the problem in the above background, the researchers are interested in examining whether the results of chemical compounds contained in the methanol extract of leaves of Kapuk Halmahera.

Research purposes

To identify chemical compounds contained in the methanol extract of leaves of Kapuk Halmahera using GC-MS.

METHODS

Benefits of research

The results of this study are expected to provide information about the chemical compound. contained in the methanol extract of leaves of Kapuk Halmahera which can be used as an herbal remedy.

RESULTS

Preparation of Methanol Extract Leaves Halmahera Kapok (*Ceiba Petandra*)

Extra manufacture methanol leaves Kapuk Halmahera done with meserasi method or screening method for how to work and use the equipment in a simple darting. In addition meserasi method can also avoid damage to the compound of the chemical compounds that character thermolabile. The solvents used in the screening process is methanol.

Kapok leaves Halmahera taken in the washing with water until clean then the drying brought the sun to dry. Subsequently the samples in a blender until smooth to get the powder, then fine powder suda in sifter and given a label. A sample of 100 grams in the extraction using meserasi. Different entry pollen `Halmahera into the vessel meserasi then pour the methanol subsequently closed vessel meserasi and let stand for 5 days while in the mix every day in a place protected from light after 5 days in doing the filtering separation of filtrate and residue in the maceration back for 2 days while in the

mix every day, after 2 days to do the filtering and residue in the exhaust. Next, collect filtrate then steam with a rotary evaporator so obtained condensed extract.

Identification of Compounds

To identify the compounds from Kapuk Leaves Halmahera, methanol extract in fraksinai first in a beaker and then methanol in steam with Rotary evaporator thus obtained methanol fraction do next in compound identification using GC-MS.

Results of Identification of Chemical Compounds Leaf Kapuk Halmahera

Table 1. Sample Test Results Leaves Kapuk With Gs Tool- Ms.

NAME SAMPLES	COMPOUND	Contents
LEAF KAPUK HALMAHERA	(9E) octadecenoic acid	13.18
	GeranyGeraniol	4.15
	Gamma Tocopherol	7.94
	Stigmast-4-em-3-one	2.94
	Stigmastane-3,6-iodione (5 Alpha)	4.04
	Beta-sitosterol	2.03
	vitamin E	1.89
	solanesol	
	Hexsadecanoic acid	
	Comphor	
	Farneso isomera	

DISCUSSION

Kapok m Halmahera has compound leaves, alternate and clustered on the limb. Long petiole 5 -25 cm, red at the base, slender, and hairless. Having 5-9 leaflets, 1.5 to 5 cm wide, oval to oblong breech, pointed tip, base cuneate, margin with one another, dark green on top and pale green on the bottom. Flowers hang compound, clustered at the twig, hermaphrodite, whitish and large. Calyx bell-shaped, 1 cm long with 5-10 short lobes, petals of 3 - 3.5 cm to 5 bulges. Flowers are white to pink, pistil with the fruit will menunpang, near the end of a long and curved, stigma enlarged.

Based on the identification of test compounds of cottonwood leaves Halmahera, by using GC-MS

method, there are several compounds that have the highest content of which is:

(9E) -9-octadecenoic acid.

Contained in the methanol extracts from leaves of Kapuk Halmahera. Compound (9E) -9-octadecenoic acid 13.18%, Seed Wheat Halmahera compound (9E) -9-octadecenoic acid 23.11% .and Cow Milk of cattle Ruminansi compound (9E) -9-octadecenoic acid 24 0% , is essential to the human diet, which is found in milk CLA. Its role in giving benefits for the human body:

- As an anti-cancer because it contains antimutagenic contain components that can inhibit mutagenesis.
- Anti-atherogenic where a spur of reducing atherosclerotic disease.
- Can alter body composition which can reduce body fat.
- Wherein the immune stimulating immune function.
- Can increase bone formation.
- Anti diabetes improve glucose utilization.

Gamma Tocopherol and Vitamin E

Gamma - Tocopherol contained in Halmahera etrak cottonwood leaves her womb 5.50% also are in a banana leaf dry kapok the compounds Halmahera its 12.10% . So gamma tocopherol compound is greater in banana leaves are dry cured Halmahera. Functions as:

- As an anti-oxidant.
- Blood circulation.
- Increase endurance.
- Prevent the narrowing of blood vessels.
- Helps prevent heart disease.
- Normalize cholesterol levels.
- Help enrich the fertility of male and female reproduction.

CONCLUSION

From the results of the identification of chemical compounds were calculated using GC-MS (Gass Cromotography Mass Spectrometry) can be concluded that the cottonwood leaves contain compounds Halmahera highest (9E) -9-octadecenoic acid 13.18%, and the lowest compound isomera Farneso 1 , 89%.

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