Makalah Lengkap Fahrauk

by nourisman

General metrics

14,981	2,142	203	8 min 34 sec	16 min 28 sec
characters	words	sentences	reading time	speaking time

Score

This text scores better than 92% of all texts checked by Grammarly

Writing Issues

84	41	43
Issues left	Critical	Advanced

Plagiarism

This text hasn't been checked for plagiarism

Writing Issues

46	**Correctness**	
13	Confused words	
16	Unknown words	
5	Comma misuse within clauses	
7	Misspelled words	
2	Improper formatting	
1	Text inconsistencies	
1	Incomplete sentences	
1	Determiner use (a/an/the/this, etc.)	
34	**Clarity**	
31	Passive voice misuse	
2	Wordy sentences	
1	Hard-to-read text	
4	**Engagement**	
3	Word choice	
1	Monotonous sentences	

Unique Words

Measures vocabulary diversity by calculating the percentage of words used only once in your document

29%

unique words

Rare Words

Measures depth of vocabulary by identifying words that are not among the 5,000 most common English words.

44%

rare words

Word Length

Measures average word length

4.7

characters per word

Sentence Length

Measures average sentence length

10.6

words per sentence

Makalah Lengkap Fahrauk

Orthosiphon Stamineus Benth. as A Potential Herbal Medicine (mini-review)

ABSTRACT

Cat's whiskers plant (Orthosiphon stamineus) is an herbal plant that has been commonly used mainly in several countries in Southeast Asia, such as Indonesia, Malaysia, and Thailand, and is often consumed in tea as Javanese tea, which has diuretic properties. Java tea has also been introduced to Japan and Europe. O. Stamineus has many biological activities such as antimicrobial, anti-inflammatory, antioxidant, edema, hepatitis, hypertension and many more. The activity is related to various contents in it, especially polymethoxylated flavonoids such as sinensetin and eupatorin, which are the most important components. Many studies on O. Stamineus, such as metabolite isolation, pharmacological studies, phytochemicals, and measurement of the amount. This paper is a comprehensive review that discusses several aspects such as propagation, distribution, diversity, traditional uses, the biological activity of O. Stamineus . Also, this paper also summarizes phytochemical aspects in terms of the quality and quantity of the cat's whiskers and the method used, which are very potential to be used as a traditional medicine in the future.

Keyword: Orthosiphon stamineus, aristatus, cat's whiskers, java tea, qualitative and quantitative, phytochemical, component

Introduction

The use of food as medicine has been practiced[15] for a long time ago. At present, prevention of diseases carried out using products originating from nature such as from marine sources, plants, or animals as health supplements, revitalization, and prevention agents are on the rise (Pariyani et al., 2015). Herbal products have been widely used[16] globally, and the market has developed rapidly in recent years (Purwantiningsih & Hussin, 2014). Indonesia is rich in traditional medicines and natural medicines, which have been traditionally used[17] as traditional medicinal herbs. Traditional medicine using medicinal plants is expected[18] to be utilized[19] in the development of public health. Now, the government promotes treatment using natural materials (back to nature) (Wijayakusuma, 1999).

In Indonesia, the Cat's Whiskers plant (Orthosiphon stamineus[20]) is one of the plants known as a medicinal plant family. It belongs with the Lamiaceae family and widely used to treat several diseases, such as edema, hepatitis, jaundice, hypertension, diabetes mellitus, rheumatism, influenza, and others (Sumaryono et al. 1991; Tezuka et al., 2000). Cat's Whiskers leaves have been used[21] for a long time in various kidney diseases. Leaves and stems of 0.stamineus (Orthosiphonis folium) are used[22] to prepare a diuretic tea, which has also been reported[23] to be active against kidney and bladder inflammations (Sumaryono et al. 1991). Tea made from the leaves of the cat's whiskers is used[2] to reduce gout and kidney stones. It is also used[25] for diabetes and hypertension

therapy (Mat-Salleh et al., 2002; Ohashi, 2000). This research shows that Javanese tea can protect intestinal cells from oxidative stress (Cai et al., 2018). Other studies have shown that O. Stamineus stems also have high antioxidant activity (Xue et al., 2016). Several studies have confirmed that Javanese tea extracts show strong antioxidant activity (Ameer et al., 2012). Phyto-products from the Cat's Whiskers plant contain derivatives of caffeic acid (rosmarinic acid, cycoric acid) and polymoxylated flavonoids (sinensetin, eupatorin) (Olah et al., 2017).

This cat's whiskers plant can be used as an herbal remedy considering its diverse contents and uses. Therefore, this journal contains a review made to provide information on the content of O. Stamineus qualitative and quantitatively based on the research that has been done.

Methodology

This review journal was created using the systematic review method based on literature searches from several journals, presidium, or books related to cat whiskers. Some online sites that are used in library search include PubMed (Medline) and Since Direct.

Distribution and Diversity of Orthosiphon stamineus Benth.

Orthosiphon stamineus Benth. (Family Lamiaceae) is a widely distributed plant in Africa and Southeastern Asia. The herb grows in temperate and tropical areas such as India, Malaysia, China, Australia, and the Pacific (K Hsuan, 1986). Malaysia and Indonesia have a tropical climate with high temperature and rainfall all year, which have enabled the plant to flourish extensively (Hossain & Rahman, 2015). The planting area of O. Stamineus in Indonesia is mostly found

in West Java (Bogor and Sukabumi), East and West Sumatra, Aceh, and North Sulawesi (Febjislami et al., 2019). The word Orthosiphon is derived from two Latin words, orthos and siphon, which mean straight while cylindrical, respectively (Ameer et al., 2012).

O. Stamineus is a perennial herb. Its height is 0.3–1 m. The stem is four-angled, while the leaves are simple, lanceolate-like, elliptical or rhomboid, 2–4 cm wide and 4– 7 cm long, and the flowers are white or pale lilac. They have stamens that extend from the corolla tube with a length of more than 2 cm (Wiart, 2000). According to both the floral and calyx colors, Orthosiphon sp. is classified into one of two varieties: one with white flowers (white variety), and the other with light purple flowers (purple variety). The purple variety has more bioactive compounds than the white one (Lee, 2004). However, most scientific investigations have used the white variety (Ameer et al., 2012).

4. Orthosiphon stamineus Benth. Propagation

Orthosiphon stamineus propagation is generally done through vegetative propagation with cuttings (Thijssen, 1989). Vegetative propagation produces a genetically similar plant as the mother plant, so O. Stamineus propagated by using cuttings has narrow genetic diversity (Febjislami, 2017). The genetic variation might be increased by combining with other genetic sources of O. Stamineus collected from various agro-ecosystem conditions for plant breeding. Agro-ecosystem conditions affect medicinal plants' genetic potential, thus affecting the diversity, quantity, and quality of medicinal plant material (Wahid, 1998) (Rahardjo & Rosita, 2003). Orthosiphon stamineus also produces a seed that can be used for generative propagation. O. Stamineus quickly propagated using seeds, but the seed germination rate rapidly declining (Febjislami, 2017). Information on the flowering of O. Stamineus is limited.

Generally, research was done to study the bioactive content of O. Stamineus and its potentiality as medicine (Mohamed et al., 2012; Tezuka et al., 2000).

5. Traditional Use

The O. Stamineus by local communities in Indonesia has been used as a diuretic or urinary remedy to cure diabetes mellitus (Mohamed et al., 2012). The plant is used as alternative medicine in Malaysia and has also been sold as a dietary supplement in recent years (Wiart, 2002). O. Stamineus is consumed as a herbal tea in many European countries to promote health due to its high antioxidant properties (Indubala J., 2000). The leaf has been introduced to Europe and Japan as a health tea that acts as diuretics (Beaux et al., 1999; Englert & Harnischfeger, 1992; Masuda & Nakatani, 1992).

6. Biological Activities

O. stamineus have shown several biological activities, including antimicrobial, antifungal (Hossain et al., 2008), hypoglycemic, diuretic, saluretic (Dharmaraj et al 2006), anti-inflammatory (Awale et al, 2003) , antioxidant (Akowuah et al, 2004), cytotoxic (Tezuka et al., 2000) and hypotensive (Matsubara et al., 1999). Amzad Hossain et al. has succeeded in isolating the new compound 5, 6, 7 and 8- tetra hydroxy-6-methoxy flavone from this plant which is widely used in India for some treatment such as eruptive fever, urinary lithiasis, edema, hepatitis, jaundice, hypertension diabetes mellitus, gout, rheumatism, diuretic, anti- inflammatory and influenza. They exhibit excellent antibacterial, antifungal, antimicrobial, anti-tumor, and insect anti feed ant activities. In the current study, an attempt was made to understand the antibacterial and anticancer properties of the leaf extracts of O. stamineus (Aneesh et al., 2014).

Exhibit Cytotoxic Activity

The MeOH extract of this plant's aerial part was found to exhibit cytotoxic activity against colon cancer cells (Stampoulis et al., 1999). Research shows

the efficacy of Orthosiphon stamineus leaf ethyl acetate extract against colon cancer cells and pathogenic bacteria (Aneesh Nair et al. 2014)

Antiangiogenic Activity

Recently, the potent antiangiogenic activity of O. stamineus and its prevention activity against human breast tumors in a xenograft model was reported (Ahamed et al., 2012). Another study reported that the ethanol extract of O. Stamineus specifically inhibited vascular endothelial growth factor (VEGF) expression and VEGF receptor (VEGFR) phosphorylation, which are known to be up-regulated during new blood vessel formation. Also, O. Stamineus can suppress vascularization and inhibited the growth of implanted human colon tumors. The high amount of rosmarinic acid in the ethanolic extract of O. Stamineus played a central role in these activities. The Orthosiphon extract significantly inhibits migration and formation of human umbilical vein endothelial cell tubes (HUVECs). Orthosiphon extract also suppresses VEGF induced phosphorylation, which VEGF induces on VEGF-2 receptors) in HUVEC (Ahamed et al., 2012)

Anti-inflammatory

The anti-inflammatory properties of O. Stamineus leaf chloroform extract have been scientifically proven. It shows a potent in vitro inhibition to pro-inflammatory mediators expressions such as iNOS, COX-2 and TNF-α, and PGE2 and NO production [10]. The anti-rheumatic activity of O. Stamineus can be beneficial for the prevention and management of rheumatoid arthritis and other chronic inflammatory disorders (Tabana et al., 2016).

Antioxidant

O. Stamineus has phenolic compounds with stronger antioxidants activity than flavonoids (Zalukhu, 2018). It also can protect the intestine from oxidative stress (Cai et al., 2018).

Diuretic

The aqueous extract of Orthosiphon, which is given[77] orally, significantly increases ion excretion in mice to a level comparable to that obtained with furosemide (Englert & Harnischfeger, 1992).

Anti hypertension

Flavonoid compounds have an ACE inhibitory activity directly related to their ability to bind with zinc ions in the active site of the ACE enzyme. OS extracts contain high amounts of flavonoids in addition to RA, TMF, SIN, and EUP. Thus, OS extracts can be applied[78] as ACE inhibitors (Shafaei et al., 2016)

Antidiabetic

Ethanol extract of 70% cat's whiskers leaves dose of 1.25 g / kg BW has the effectiveness of approaching glibenclamide when given for 14 days (Fauzan, 2017).

Antimicrobial

Several researchers have recently reported the antimicrobial activity against Vibrio parahaemolyticus[79], Streptococcus mutants (Chen et al., 1989).

7. Phytochemical Study

Based on several studies, qualitative component testing can use H-NMR, C-NMR, and GC-MS instruments while quantitative measurement using HPLC.

- Qualitative constituent of O. Stamineus

Compound

Library

Phenolic

Pentacyclic triterpenes betulinic acid

Oleanolic acid

Ursolic acid

β-sitosterol

(Tabana et al., 2016)

Rosmarinic acid

(Akowuah et al., 2004)

Phenylpropanoids (caffeic acid derivatives)

caffeic acid

rosmarinic acid

cichoric acid

2,3-dicaffeoyltartaric[80] ol.17

(Ameer et al., 2012)

Flavonoid

Sinensetin

Eupatorin tetramethoxyflavonone

(Akowuah et al., 2004)

Polymethoxylated flavonoids

3'-hydroxy-5,6,7,4'-tetramethoxyflavones[81]

Tetramethylscutellarein

Salvegenin

Ladanein

Vomifoliol

7,3',4'-tri-O-methylluteolin[82]

Scutellarein tetramethyl- ether.

(Ameer et al., 2012)

5-hydroxy-6,7,30,40-tetramethoxyflavone

Salvigenin

6-hydroxy-5,7,40-tri- methoxyflavone

5,6,7,30-tetramethoxy-40-hydroxy-8-C-prenylflavon

(Hossain et al., 2008)

Polymethoxylated flavones

Tetramethylscutellarein

30-hydroxy- 5,6,7,40-tetramethoxyflavone

(Pietta et al 1998)

□□□- Quantitative constituent of O. Stamineus

Compound

Source

Amount

Library

Rosmarinic acid

MeOH extract of dried herbal

22.2 µmol/g dry weight

(Sumaryono et al., 1991)

2,3-dicaffeoyltartrate[83]

MeOH extract of dried herbal

7.4 µmol/g dry weight

(Sumaryono et al., 1991)

Sinensetin

MeOH extract of dried herbal

5.3 µmol/g dry weigh

(Sumaryono et al., 1991)

Total Phenolics

Aceton extract of leaf

0,8435 % ± 0,0015 %

(Rivai et al 2019)

Total Phenolics

Ethanol extract of leaf

0,8162 % ± 0,0012 %

(Rivai et al 2019)

Total Flavonoids

Ethanol extraxt of leaf

0,8162 % ± 0,0012 %

(Rivai et al 2019)

Total Flavonoids

Water extract of leaf

1,4977 % ± 0,0031 %.

(Rivai et al. 2019)

Total Tannins

Aceton extract of leaf

0,7595 % ± 0,0004 %

(Rivai et al. 2019)

Total Tannins

Ethanol exract of leaf

0,6146 % ± 0,0006 %

(Rivai et al. 2019)

Total Phenolics

Water extract of stem

7.817 mg GAE/g ± 0.14

(Zalukhu, 2018)

Total Phenolics

Ethanol extract of stem

2.267 mg GAE/g ± 0.05

(Zalukhu, 2018)

Total Phenolics

Water extract of leaf

26.431 mg GAE ± 1.46

(Zalukhu, 2018)

Total Phenolics

Ethanol extract of leaf

7.838 mg GAE ± 0.72

(Zalukhu, 2018)

Total Flavonoids

Water extract of stem

1.234 mg GAE ± 0.39

(Zalukhu, 2018)

Total Flavonoids

Ethanol extract of stem

1.092 mg GAE ± 0.17

(Zalukhu, 2018)

Total Flavonoids

Water extract of leaf

2.860 mg GAE ± 0.10

(Zalukhu, 2018)

Total Flavonoids

Ethanol extract of leaf

3.948 mg GAE ± 0.83

(Zalukhu, 2018)

1,1 Dicyclopentylethane

n-hexane extract of leaf

11,009%

(Surahmaida et al. 2019)

Bicyclo[3.2.0]hept-2,6-diene-1,2,3,4,4,5,6-d(7)

n-Butyl palmitate

n-hexane extract of leaf

7,020%

22,516%

(Surahmaida et al. 2019)

1-oxo03.alpa.-(4-methyl-3 pentenyl) -6.alpa.-methyl 6a.alpa.-carbomethoxy

1,3,3a.alpa.,6a- tetrahydrocyclopenta[c]furan

n-hexane extract of leaf

21,805%

(Surahmaida et al 2019)

1,1,3,3,5,5,7,7,9,9,11,11,13,13- tetradecamethylheptasiloxane

n-hexane extract of leaf

15,117%

(Surahmaida et al. 2019)

1,4-bis (trimethylsilyl) - benzene

n-hexane extract of leaf

6,502%

(Surahmaida et al. 2019)

Silicone grease, Siliconfett)

n-hexane extract of leaf

16,031%

(Surahmaida et al. 2019)

Z, Z-6,24-Tritriacontadien-2-one Phytol

The methanol extract of leaf

5,640%

(Surahmaida et al. 2019)

Phytol

The methanol extract of leaf

16,198%

(Surahmaida et al 2019)

alpha.trans-sesquicyclogeraniol

The methanol extract of leaf

5,230%

(Surahmaida et al. 2019)

D,.alpha.-Tocopherol

The methanol extract of leaf

14,785%

(Surahmaida et al 2019)

(E)-5,10-secocholest-1(10)-en-3,5-dione

The methanol extract of leaf

10,355%

(Surahmaida et al. 2019)

Stigmasta-5,22-dien-3.ol

Methanol extract of leaf

18,612%

(Surahmaida et al 2019)

1,5-Dimethyl-6-(1,5-dimethylhexyl)-15,16-epoxy- 18-oxatetracyclo

[9.6.1.0(2,10).0(5,9)]octdecane-13- one

Methanol extract of leaf

21,710%

(Surahmaida et al. 2019)

Silicon grease, siliconfett[84]

The methanol extract of leaf

7,470%

(Surahmaida et al. 2019)

1.	~~Stamineus~~ → stamineus	Confused words	Correctness
2.	*stamineus*	Unknown words	Correctness
3.	*is often consumed*	Passive voice misuse	Clarity
4.	*been introduced*	Passive voice misuse	Clarity
5.	~~Stamineus~~ → stamineus	Confused words	Correctness
6.	, and	Comma misuse within clauses	Correctness
7.	*polymethoxylated*	Unknown words	Correctness
8.	~~eupatorin~~ → eupatorium	Misspelled words	Correctness
9.	~~important~~ → critical, essential	Word choice	Engagement
10.	~~Stamineus~~ → stamineus	Confused words	Correctness
11.	Stamineus .	Improper formatting	Correctness
12.	~~Also,~~ *this* or *Also, this paper* ~~also~~	Wordy sentences	Clarity
13.	*stamineus*	Unknown words	Correctness
14.	*aristatus*	Unknown words	Correctness
15.	*been practiced*	Passive voice misuse	Clarity
16.	*been widely used*	Passive voice misuse	Clarity
17.	*been traditionally used*	Passive voice misuse	Clarity
18.	*is expected*	Passive voice misuse	Clarity
19.	*be utilized*	Passive voice misuse	Clarity
20.	*stamineus*	Unknown words	Correctness

21.	*been used*	Passive voice misuse	Clarity
22.	*are used*	Passive voice misuse	Clarity
23.	*been reported*	Passive voice misuse	Clarity
24.	*is used*	Passive voice misuse	Clarity
25.	*is also used*	Passive voice misuse	Clarity
26.	~~strong~~ → vigorous, healthy, intense	Word choice	Engagement
27.	*This research shows that Javanese tea can protect intestinal cells from oxidative stress (Cai et al., 2018). Other studies have shown that O. Stamineus stems also have high antioxidant activity (Xue et al., 2016). Several studies have confirmed that Javanese tea extracts show strong antioxidant act...*	Monotonous sentences	Engagement
28.	~~cycoric~~ → cyclic	Misspelled words	Correctness
29.	~~polymoxylated~~ → polyethoxylated	Misspelled words	Correctness
30.	~~eupatorin~~ → eupatorium	Misspelled words	Correctness
31.	*information; Information*	Text inconsistencies	Correctness
32.	~~Stamineus~~ → stamineus	Confused words	Correctness
33.	*been done*	Passive voice misuse	Clarity
34.	*was created*	Passive voice misuse	Clarity
35.	*are used*	Passive voice misuse	Clarity
36.	*stamineus*	Unknown words	Correctness
37.	*Distribution and Diversity of Orthosiphon stamineus Benth.*	Incomplete sentences	Correctness
38.	*stamineus*	Unknown words	Correctness

39.	*is mostly found*	Passive voice misuse	Clarity
40.	*is derived*	Passive voice misuse	Clarity
41.	~~Stamineus~~ → stamineus	Confused words	Correctness
42.	~~one with~~	Wordy sentences	Clarity
43.	*stamineus*	Unknown words	Correctness
44.	*is generally done*	Passive voice misuse	Clarity
45.	*be increased*	Passive voice misuse	Clarity
46.	~~Stamineus~~ → stamineus	Confused words	Correctness
47.	*stamineus*	Unknown words	Correctness
48.	*be used*	Passive voice misuse	Clarity
49.	~~Stamineus~~ → stamineus	Confused words	Correctness
50.	*was done*	Passive voice misuse	Clarity
51.	~~Stamineus~~ → stamineus	Confused words	Correctness
52.	*been sold*	Passive voice misuse	Clarity
53.	~~Stamineus~~ → stamineus	Confused words	Correctness
54.	*been introduced*	Passive voice misuse	Clarity
55.	*stamineus*	Unknown words	Correctness
56.	~~et al~~ → et al.	Comma misuse within clauses	Correctness
57.	~~et al~~ → et al.	Comma misuse within clauses	Correctness
58.	) ,	Improper formatting	Correctness

59.	~~et al~~ → et al.	Comma misuse within clauses	Correctness
60.	*is widely used*	Passive voice misuse	Clarity
61.	anti-inflammatory	Confused words	Correctness
62.	, and	Comma misuse within clauses	Correctness
63.	*O. stamineus have shown several biological activities, including antimicrobial, antifungal (Hossain et al., 2008), hypoglycemic, diuretic, saluretic (Dharmaraj et al 2006), anti-inflammatory (Awale et al, 2003) , antioxidant (Akowuah et al, 2004), cytotoxic (Tezuka et al., 2000) and hypotensive (Ma...*	Hard-to-read text	Clarity
64.	*was made*	Passive voice misuse	Clarity
65.	*stamineus*	Unknown words	Correctness
66.	*was found*	Passive voice misuse	Clarity
67.	*stamineus*	Unknown words	Correctness
68.	*stamineus*	Unknown words	Correctness
69.	*was reported*	Passive voice misuse	Clarity
70.	~~Stamineus~~ → stamineus	Confused words	Correctness
71.	*be up-regulated*	Passive voice misuse	Clarity
72.	~~Stamineus~~ → stamineus	Confused words	Correctness
73.	The orthosiphon	Determiner use (a/an/the/this, etc.)	Correctness
74.	*been scientifically proven*	Passive voice misuse	Clarity
75.	~~Stamineus~~ → stamineus	Confused words	Correctness

76.	~~stronger~~ → more muscular, more robust, more vigorous, more vital	Word choice	Engagement
77.	*is given*	Passive voice misuse	Clarity
78.	*be applied*	Passive voice misuse	Clarity
79.	*parahaemolyticus*	Unknown words	Correctness
80.	di-caffeoyl tartaric	Misspelled words	Correctness
81.	tetra methoxy flavones	Misspelled words	Correctness
82.	*methylluteolin*	Unknown words	Correctness
83.	di-caffeoyl tartrate	Misspelled words	Correctness
84.	*siliconfett*	Unknown words	Correctness