

# Ethnobotanical Study of Sirgunggu (*Clerodendrum serratum* L.): Usage for *Gurah*, Traditional Theurapical Practice in Kampung Giriloyo, Imogiri, Bantul

Sindi Farhana\*, Astrino Purmanna, Nisa Ulmah Mudah, Rika Istiqomah, Erica Nuralam

Department of Biology Education Faculty of Science and Technology  
State Islamic University Sunan Kalijaga Yogyakarta - Indonesia  
Correspondency email\*: [sindifarhana@yahoo.com](mailto:sindifarhana@yahoo.com)

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## Abstract

Local people of Kampung Giriloyo, Imogiri uses Sirgunggu (*Clerodendrum serratum* L.) as the main ingredient for traditional theurapical practice *Gurah*. The capability of doing this theurapical practice were inherited from one generation to generation so that become the tradition of Kampung Giriloyo and become the identity of Imogiri. This study aimed to know the usage of Sirgunggu as the main ingredient of traditional theurapical practice *gurah* and to know the conservation effort by the local people.

**Keywords:** Ethnobotany, *Clerodendrum serratum* L., *Gurah*.

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## INTRODUCTION

Indonesia is a mega biodiversity hotspot and also rich in cultural diversity. Occupying only 1.3% of the world's land surface, Indonesia is one of the world's richest nations in terms of its biodiversity. According to Conservation International, Indonesia is one of the 17 mega diverse countries, with 2 of the world's 25 biodiversity hotspots, 18 World Wildlife Fund's "Global 200" ecoregions and 24 of Bird Life International's Endemic Bird Areas. It also possesses 10% of the world's flowering species (25,000 flowering plants) and ranks as one of the world's centres for agro biodiversity of plant cultivars and domesticated livestock.

This mega resource lead to the popular use of medicinal plants in traditional medical or theurapical practice. One of them is *Clerodendrum serratum* L. that belong to the family Verbenaceae as the ingredients of traditional theurapical practice *gurah* ([www.iptek.net.id](http://www.iptek.net.id)). *Gurah* is a traditional theurapical practice that popularly used by the Indonesia people. The treatment involves rinsing out the mouth and respiratory tract with a mixture of herbs that dropped through the nostrils. The theurapy usuallt treat the respiratory tract disease, nasal congestion, and help to create clearer voice (Iwasaki, 1995).

Based on the study by SP3T in 2004 about Clinical Observation of *Gurah* with Root Skin of *Clerodendron*

*serratum* Spreng. Juice, *gurah* is safe because there is no dangerous adverse reaction. There are several side effect of this theurapy, i.e. headache, red and watery eyes, dizzy, runny nose, thirst, and ear buzzing. This effect will fade in about 5 hours (Mangunkusumo, 2009).

This traditional theurapical practice were inherited from one generation to generation. At first, this traditional therapy only used by several people, i.e. traditional singer and Qur'an reciter in order to have a clear and crisp voice. But by the time, *gurah* also used to treat respiratory tract diseases (Abidin, 2012). The study on *gurah* is also rarely exist, especially the ethnobotanical study. So that the Ethnobotanical study of Sirgunggu (*Clerodendrum serratum* L.): Usage for *Gurah*, Traditional Theurapical Practice in Kampung Giriloyo, Imogiri, Bantul were done.

## METHOD

The observation and field study were done from October, 27 2016 until November, 22 2016. The ethnobotanical study were located in Kampung Giriloyo, Imogiri, Bantul. This study was categorized in descriptive quantitative study accompanied with semi-structural interview method. The question of the interview is an open ended question. The informant were choosed using random sampling technique.

## RESULT AND DISCUSSION

### *Morphology of Clerodendrum serratum L.*

Sirgunggu (*Clerodendron serratum* L.) are widely used as the ingredient for *gurah*. This plant has several local names, i.e. Simat baung (Sumatera), Simar buangkudu (Batak Toba), Tanjau handak (Lampung), Senggugu (Malaya), Singgugu (Sunda), Srigunggu, Sagunggu (Java), Kertase, Pinggir tosek (Madura), and San tai hong hua (Chinese).

Sirgunggu is a small shrub, usually grow under 3,5 metres height. This plant usually grow in areas with 1-1700 masl (metres above sea level) altitude. **Stem:** hollowed, cylindrical, and woody, The plant has quadrangular, glabrous branches, and big enlarged area in the root called tuber. **Leaves:** Leaves are green, large and ovate or oblong, usually ternate whorled, coarsely and sharply serrate, glabrous and pale beneath with six pairs of lateral nerves. **Flowers:** Flowers are numerous appearing in May to August month. The inflorescence is both axillary and terminal sometimes on the small plant. The inflorescence range from 1-39 cm long and 1-25 cm wide. The inflorescence maybe cymes, panicles or solitary flowers. The calyx varies in size ranging from 2-18 mm long. It is gamosepalous, commonly green, and less often red or white, always companulate, elliptic, 5 lobed, variously pubescent. The size of corolla ranges from 6 to 4 mm long to 3 to 20 mm wide. It is gamopetalous hypocretiform and may be white red, pink or purple. The fruits is drupaceous, mostly sublobose or obovoid, glabrous usually sepating at maturity in to pyrenes. Fruits range from 5 to 14 mm long and 5 to 8 mm wide. Seeds are four lobed, they are oblong with little no endosperm (Rueda et al., 1993). Seed: ovale, around 7 mm in length, and black-colored (Pusat Studi Biofarmaka LPPM IPB, 2014).

### **Classification**

Division	: Spermatophyta
Sub division	: Angiospermae
Class	: Dicotyledonae
Order	: Solanales
Family	: Verbenaceae
Genus	: <i>Clerodendrum</i>
Species	: <i>Clerodendrum serratum</i> L.

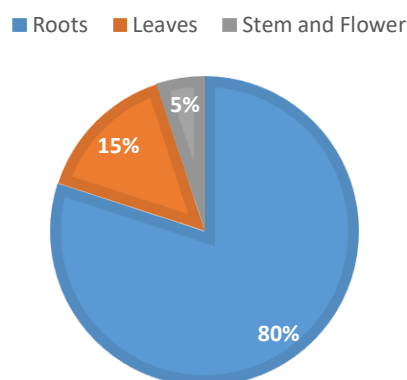
This plant is known as the main ingredient of traditional theurapical practice in Kampung Giriloyo, Imogiri. Local people believe that this plant has effect in voice clearing, diuretics problem, and eliminate excess mucus. Its leave potential in cure reumathism, the fruit Daun Senggugu berkhasiat sebagai obat rematik, the fruit cures cough, and the root has an effect in voice clearing, enhance diuretics effect, treating snake venom, cleanse and purify blood. Parts

of the plant that mostly used are the leaves and root skin. Based on previous study, those parts contains flavonoid and saponine. The leaves containe alcaloid and tanin while the root contains poliphenol that have 15 carbon atoms, consist of two benzene rings that connected by linear chain that consist of three carbon atoms (Abidin, 2012).

Local people processes the plant by drying the root skin or leave, then crush it to get the extract. The extract can be packed as drops, pill, and tea. The use of Sirgunggu extract to the patient is by put several drops of plant extract to the patient's nostrils and mouth to release excess mucus in the respiratory tract.

### **Part of Plant that Used by Kampung Giriloyo People for Gurah**

Based on the interview, not all parts of the plant are used for *gurah*. 80% of the people uses the roots, 15% uses the leaves, and 5% uses the stems or flower.



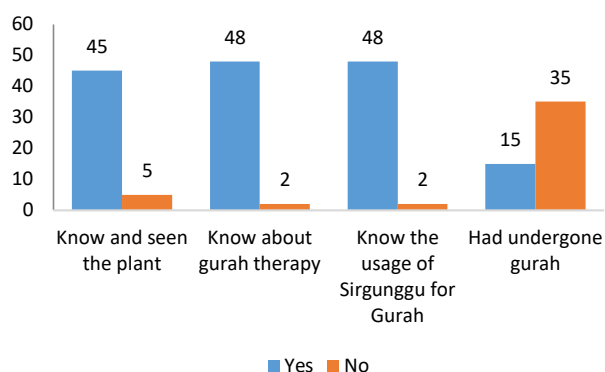
**Figure 1.** Percentage of Plant Parts USED for Gurah

Based on the previous study, the roots are mostly used because the extract of Sirgunggu root could reduce the viscosity of mucus or have mucolitics activity (Wahyono, 1998). Sirgunggu root extract contains sitosterole that has an anti-inflammatory effects by reducing hypersecretion of mucus (Kim, et.al., 2007) and flavonoid that inhibit  $Ca^{2+}$  influx that will prevent mast cell degranulation (Kawai, et.al., 2007). Previous study by Indriani (2007) proves that Sirgunggu leave extract contains steroid an alcaloid that potential in anti bacterial.

### **Local People Knowledge about the Usage of Sirgunggu**

Based on the interview to 50 respondents that randomly choosed from Kampung Giriloyo residents, 45 people know the plant and have seen it directly. 48 respondents know that *gurah* is one of traditional theurapical practice, and 48 respondents know that

Sirgunggu is the main ingredients for *gurah*. From the total respondents, only 15 people that had undergone *gurah* therapy.



**Figure 2.** Graphic Local People Knowledge on Gurah and Sirgunggu.

### Sirgunggu Conservation Effort

Most people have not made a conscious effort to conserve Sirgunggu (*Clerodendrum serratum* L.) plants because of the abundant number of plants in Kampung Giriloyo. A small portion of the community was found planting small amounts of Sirgunggu plants in their yard, which is about 1-3 plants. Cultivation is not difficult because these plants can thrive wildly without special care.

### CONCLUSIONS

Based on the results of the study it can be concluded that the people of Giriloyo village, Imogiri Bantul used Sirgunggu plant as the main ingredient in traditional theurapical practice *gurah*. This plant is believed to make voice clearer, enhance diuretic effect, and remove excess mucus. The most used plant organs are roots with a percentage of 80%, then the leaves are used as much as 15%, and stems or flowers with a percentage of 5%.

Based on interviews with 50 respondents who were randomly selected from the residents of Kampung Giriloyo, as many as 45 respondents knew of sirgunggu plants and had seen them directly. As many

as 48 respondents knew *gurah* as one of the traditional treatments and 48 respondents also knew that sirgunggu was the main ingredient in traditional theurapical practice *gurah*. Of the total number of respondents, only 15 had ever undergone such treatment.

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