



The Utilization of Sikala (*Etilingera elatior*) As Traditional Medicine in Porehu District, North Kolaka Regency, Southeast Sulawesi Province, Indonesia

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ABSTRACT

Background: *Etilingera elatior* is species of Zingiberaceae Familia and it is recognized as Sikala in North Kolaka. The species may use as an alternative medicine for healing typhoid fever symptoms. **Objective :** The study aimed to determine the efficacy, knowing the plant used part, and how to use them. This study was qualitative which explores local community understanding through in-depth interview with 2 key informants and 50 respondents. Types of Sikala was observed in Porehu district and laboratory tested was in Taxonomy laboratory in Basic Science and Matematic Faculty, Halu Oleo University. **Result :** The result showed that Sikala plants is usefull to cure the typhoid fever symptoms, healing mouth sores, diarrhea, lack of appetite, coughs, and serve as refreshment drink. The used of plant part are the pseudo stems, leaves, fruit and rhizomes. The pseudo-stem is heated by fire and stems squeezed to get liquid or pseudo stem is blended and filtered, then squeezed liquid are served to those who have typhoid fever symptoms as many as 3 tablespoons three times a day. Based on the experience of local community, this treatment can cure about 84% typhoid fever symptoms within 1-2 weeks. Sikala plant is traditional medicine to cure the various kinds of diseases symptoms, such as typhoid fever symptoms, diarrhea, canker sores, coughing, and heartburn. **Conclusion :** Communities use sikala as traditional medicine caused by experiences of their parents that were tested, easy to obtain, and no side effects in its use.

KEYWORDS: *Etilingera elatior*, symptoms of diseases, North Kolaka Community

INTRODUCTION

The genus *Etilingera* from the family of Zingiberaceae is distributed from India to the Pacific Islands with centres of species richness are assumed in Borneo and New Guinea. Presently at least 70 species are known from the Malesian region, which refers to a floristically distinct region including Malaysia, Indonesia, Brunei, Singapore, Philippines and Papua New Guinea [1]. Name *Etilingera elatior* (Jack) RM Smith introduced by Rosemary Margaret Smith from the Royal Botanic Gardens Edinburgh in 1980.

The names synonymous previously used as *Nicolaia elatior* (Jack) Horan, *Phaeomeria magnifika* (Roscoe) K. Schum, *Elettaria speciosa* Blume, *Alpinia magnifika* Roscoe, or *Alpinia elatior* Jack. *Kecombrang* a tropical ornamental plant known as torch ginger. In the latest classification, genus *Nicolaia* and *Phaeomeria* reduced to the genus *Etilingera*, so *Nicolaia* used as a subgenus and *Phaeomeria* as *sexy* in the genus *Etilingera* [2,3] shown that a total of 15 *Etilingera* species has been recorded in Peninsular Malaysia. Reports available have shown

torch ginger to exhibit rich antioxidant, anticancer and antimicrobial activities [4-7]. *Etilingera elatior* is a popular plant in South-East Asia where in their inflorescences are traditionally used for culinary and medicinal purposes [8]. *Etilingera elatior* (Jack) R.M. Smith is native to Sumatra, Indonesia and Malaysia [9] and it has been found in many places throughout Southeast Asia. It is commonly known as “kecombrang or honje” among Indonesia and “Kantan” in Malaysia [1, 10]. *Etilingera* species are varying shades of pink and red colors of bracts and flowers [11]. All *Etilingera* species are found mostly in equatorial evergreen forests, growing from lowlands to high altitudes of 2700 m. Sikala plant can grow to an average height of about 3 m, stem form upright and has midrib. Single leaves and stems in the form of rhizomes. Sikala plant (*E. elatior*) height can reach 2.5-5.0 m with an average of about 3 m, while the trunk diameter ranging between 2-4 cm with a mean of 2.5 cm. Sikala is usually propagated by rhizome and seed. It takes about 12 months after planting to start flowering but a longer time is needed when seeds are used [12]. *E. elatior* inflorescence is borne on a long, slender and leafless peduncle arising from the rhizome of the ground [13]. The leaves are grown from separate stalks along the rhizome, inflorescence mainly consists of three colours namely red, pink and white. The pink torch ginger is commonly planted in villages while the white and red are rare [12]. Torch ginger (*E. elatior*) is an aromatic plant from parts of plant that are rhizome, leaf and inflorescence and its phytochemistry and pharmacological properties have been extensively studied [7,14-17]. The extracts from torch ginger leaf and inflorescence exhibited antibacterial activity against gram-positive bacteria [5,18]. In Malaysia *E. Elatior* traditional usage of the torch ginger plant includes the use of the fruit to treat earache and the leaves for healing of wounds and for bathing by post-partum women to remove body odour [19].

These rich of biodiversity have a tied to the local culture. One of them is through the use of various types of medicinal plants which used in traditional medicine of local ethnic. The knowledge of traditional medicine has been tested empirically from generation to generation. The local communities in Porehu District using Sikala plants (*Etilingera elatior*) as a traditional medicine plants to curing the sickness, especially the symptoms of typhoidal fever. The District of Porehu is a mountainous area and the attempts to cure the disease still rely on traditional medicine. The medical services are still lacking due to a lack of doctors on duty in that area. The community in Porehu District of North Kolaka is a newcomer Ethnic such as Bugis and Toraja Ethnic.

Typhoid fever disease is a disease caused by the bacterium of *Salmonella thypii*. Typhoid fever is in the top ten biggest diseases in Indonesia. In Southeast Sulawesi Province the number of cases of typhoid fever was in 9th position in North Kolaka Regency. Based on the data from hospitals and local government clinics showed typhoid fever cases continue to rise [20]. Sikala is a plant belonging to Zingiberaceae familia with the local name Sikala (local language), Walae (ethnic of Tolaki), and Patikala (ethnic of Bugis), and in Indonesia known as *kecombarang*. Sikala for society in Porehu District hereditary used to cure the typhoid fever. Sikala plant for communities in Southeast Sulawesi is generally used for traditional medicine to cure bad breath, coughing, fever medication and to reduce the fever, and relieve itching in the throat. In addition to traditional medicine, sikala also used as flavoring food and refresher drink

MATERIALS AND METHODS

The method used in this study was the observation and interview. Observation and collection of sikala plant samples carried out on wild plants in the District of Porehu. The interview about the use of sikala plants as traditional medicine to cure the symptoms of typhoid fever was conducted on 2 traditional medicine gatherers and 50 users in the community in the Porehu District of North Kolaka. Determination of the scientific name (identification) of sikala plant samples was conducted in the Plant Taxonomy Laboratory of Mathematics and Natural Sciences Faculty of Halu Oleo University, with reference to the Flora of Java book. Determination of the symptoms of typhoid fever based on the conclusions of medical personnel's with the physical characteristics of the dirty tongue i.e. the middle of the tongue is white with the red edge (hyperemia) accompanied by a fever in the evenings, nausea, vomiting, lost appetite, abdominal pain, and constipation. This study also explored the local community knowledge about typhoid fever symptoms and the use of sikala plant for healing typhoid fever symptoms by interview.

Results:

Sikala plant (*Etilingera elatior*) is a plant belonging to Zingibeisraceae Familia, Genus of Etilingera. *Etilingera elatior* has the local name i.e. Sikala (Toraja Ethnic in Porehu District), Walae (local name of Tolaki ethnic), Patikala (local name of Bugis ethnic). Sikala plant is a wild plant that is found in Porehu District, but most people sikala plants grown as a source of medicinal plants and it planted as garden plants. Communities in the Porehu District generally obtained sikala as a traditional medicinal plant derived from wild plants as many as 68%, but in part of community, sikala has grown in the garden or yard. Based on data collection, the whole communities in Porehu District had known the sikala plants as traditional medicine to cure the symptoms of typhoid fever. All parts of the plant are used as a traditional medicine that is pseudo stem, leaf, fruit and rhizomes. Pseudo stem part is the part is widely used as a medicine ingredient that is as many as 44%, 32% of

leaves and rhizomes only 4%. The type of complaints or diseases that used pseudo stem to cure typhoid fever as many as 78%, ear infections was 12%, and curing lack of appetite as many as 10%. Sikala leaves are used to treat loss of appetite and curing diarrhea.

In Porehu District of North Kolaka, the processing of pseudo stem of sikala to cure the symptoms of typhoid fever by means of pseudo stem is heated with roasted on the embers, then the pseudo stem is softened, then squeezed to remove fluid on pseudo stem or pseudo stem was blended and then filtered to separate the liquid and crude fiber. Juice of pseudo stem is used to treat symptoms of typhoid fever with a dose of 1-2 tablespoons, with administration three times a day. The time to healing is usually 1 to 2 weeks was 84%, and recovered more than 2 weeks reached 14%. In healing the symptoms of typhoid fever, the communities generally do not use prescription and simply use the sikala extract as many as 68%, Communities combined with medical personnel recipes from Local Government Clinic of Porehu District as many as 32%.

The all users of sikala plants as medicine to cure the symptoms of typhoid fever declared that no side effects in its use. Consideration of communities to use sikala herbs in curing the symptoms of typhoid fever is caused by the experiences of their parents from generation the generation that were tested, easy to obtain and there were no side effects in its use. Sikala leaf extract is commonly used by people in the Porehu District to increase appetite and curing diarrhea. The fruit is used to treat canker sores and coughing. Sikala fruit for the communities in the Porehu District of North Kolaka had been processed into beverages, especially for those who experience the heartburn and canker.

In the Porehu District of North Kolaka communities of Southeast Sulawesi the pseudo stem in part of sikala used as a flavoring ingredient for cooking vegetables and the fruits is used as an acid for cooking fish.

Discussion:

The communities in Porehu District of North Kolaka Regency used sikala plant (*E. elatior*) in many purposes, especially for medicinal purposes. Beside that it can be used to curing various kinds of diseases, such as diarrhea, canker sores, coughing, and heartburn. It can be used for freshener drink. The use of plants sikala (*E. elatior*) as a food source by District Community Porehu North Kolaka, have in common with some other public place, such as Sumatra, Indonesia, Malaysia, and Thailand. Sikala have many purposes and utilization. The leaves of ginger species have been used for culinary and as medicinal purpose [21-22]. The fruit is used to treat the canker sores and coughing. For medicinal uses, fruits of *E. elatior* are used traditionally to treat earache, while leaves are applied for cleaning wounds in Malaysia [23]. Leaves of *E. elatior*, mixed with other aromatic herbs in water, are used by post-partum women for bathing to remove body odour.

In Sabah, Malaysia, the hearts of young shoots, flower buds and fruits of *E. elatior*, are consumed by indigenous communities as condiment, either eaten raw or cooked [24]. In Thailand fruits and cores of young stems of *E. littoralis* and flowers of *E. Maingayi* are eaten as vegetables [25]. *Etilingera elatior* (Jack) R. M. Smith is native to Sumatra, Indonesia and it has been found in many places throughout Southeast Asia. It is commonly known as 'kantan' among Malaysians. It is used traditionally as flavouring and medicine. These traditional uses may be explained by the presence of biologically active volatile constituents. There were several previous studies reported that *Etilingera elatior* possess significant biological activities [4]. Recently, besides commercial production as cooking ingredients, this crop is gaining recognition as an ornamental and landscaping plant in urban areas [12]. Plants of *Etilingera* have various traditional and commercial uses as food, condiment, medicine and ornamentals [26]. Plant parts such as rhizome, leaf and inflorescence of torch ginger have been traditionally used as condiment and medicine [27]. For the people of the Porehu District of North Kolaka, sikala flowers are not used as food or medicine but its fruit used for freshener drink.

Sikala plant (*Etilingera elatior*) has been cultivated by Porehu District of North Kolaka communities but the flowers have not been so utilized due to the lack of public knowledge about the usefulness. In other place, namely Peninsular City of Malaysia, *Etilingera elatior* are widely cultivated throughout the tropics as spices for food flavouring and as ornamentals especially its flower. Beside that they are commonly used as ingredients of dishes such as *laksa asam*, *nasi kerabu*, and *nasi ulam*. In addition, farms in Australia and Costa Rica are cultivating the species and selling its inflorescences as cut flowers [27].

Sikala plant is traditional medicine in Porehu District Communities of Southeast Sulawesi. It is used to cure the symptoms of typhoid fever. Beside that it can be used to curing various kinds of diseases, such as diarrhea, canker sores, coughing, and heartburn. Consideration of communities to use sikala herbs in curing the symptoms of typhoid fever is caused by the experiences of their parents from generation the generation that were tested, easy to obtain and there were no side effects in its use. Based on the results of other studies related to the content of Sikala plant showed that Sikala (*Etilingera elatior*) has total phenolic content (TPC), antioxidant properties (AOP) and ascorbic acid equivalent antioxidant capacity (AEAC) of leaves and rhizomes, showed that leaves of *Etilingera* had the highest values compared of 26 ginger species belonging to nine genera were screened [5]. In *E. elatior* and *E. maingayi*, AOP values of leaves were seven to eight times higher than those of rhizomes [21]. Leaves of *Etilingera* species exhibited antibacterial activity against gram-positive bacteria and

displayed strong tyrosinase inhibition. Based on bioactivities studied, the overall score and ranking were of the order: *E. elatior* > *E. rubrostriata* > *E. fulgens* > *E. littoralis* > *E. maingayi* [21].

Conclusion:

Based on the results of other studies related to the content of Sikala plant showed that Sikala (*Etilingera elatior*) has total phenolic content (TPC), antioxidant properties (AOP) and ascorbic acid equivalent antioxidant capacity. Communities use sikala as traditional medicine caused by experiences of their parents that were tested, easy to obtain, and no side effects in its use.

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