Be Familiar with the Medicinal Plants in Campus Environment: Habitus, Usage, and Part Used

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Abstract. This study aims to list the kinds of medicinal plants in Universitas Lancang Kuning Riau and identifying the habitus of medicinal plant, the usefulness and the part used. The study was conducted for 8 months, i.e. from November 2017 to June 2018. The research method is survey. Determination of survey location is done by cluster sampling, which is grouping location based on faculty. The observation was done by cruising method, that is observing and recording all kinds of medicinal plants and identified based on the guidelines which are the results of research that has been published in scientific journals and books of the types of medicinal plants and properties. The types of medicinal plants identified in the Universitas Lancang Kuning are 109 species, consisting of 12 kinds of habitus and habitus of the most are trees. Usefulness of plants found is to treat various diseases and maintain health, also has other uses, namely as landscape elements, flavorings/food seasonings, natural dyes, as vegetables and food, and fruit producers. The parts used are roots, tubers, stem, bark, sap, leaves, flowers, fruits, seeds, bamboo shoots, whole parts of plants, and the most widely used are leaves.

Keywords: Herbs, Habitus, Medicinal plants, Usefulness, Unilak.

1. Introduction

Universitas Lancang Kuning have a relatively wide land is covered by many types of plants, whether intentionally planted as an ornamental plant and plant protection or accidentally planted / grow wild. Among the plants may have other functions, such as medicinal plant because of the active ingredient content. Various types of plants are part of the natural resources owned by the Universitas Lancang Kuning (Unilak) and has the potential to be developed for various purposes, one of which can be used as treatment resources that can be directly used or as a material for further study. However, the potential has not been explored because there is no data about the types of medicinal plants. This study aims to inventory the kinds of medicinal plants in Universitas Lancang Kuning Riau, as well as to identify the habitus of medicinal plant, the usefulness and the part used. The benefit of this research is as basic data about Universitas Lancang Kuning’s potency, especially about the kinds of medicinal plants in the campus area. With the data then it can be utilized for the preparation of development plans, management, and arrangement of campus potency.
2. Research Methods

This study was conducted in November 2017 until July 2018. Materials used were thally sheet observation, field guide sheet of medicinal plant species, and medicinal herbs at the study site. While the necessary tools are stationeries, cameras, plastic bags and knives. Methods of data collection is to conduct a survey. Determination of survey location is done by cluster sampling, which is classifying the location based on the faculty. In this study were taken 10 locations, consisting of 9 faculties and rectorate. Survey method is by cruising method, i.e. observing and recording all types of plants based on the guide sheet on the thally sheet. Data on the types of medicinal plants in the survey sites will be inventoried using guidance of medicinal plant species and their usefulness, which are the results of research published in scientific journals and books of medicinal plant species and properties. The data to be taken consisted of: local name of plant, scientific name, family, description of the plant in the form of habitus, efficacy and usefulness, and the part that is utilized. Each plant is photographed for identification purposes. The data obtained will be analyzed descriptively, i.e. describe the types of medicinal plants found, habitus, efficacy and usefulness and the parts used.

3. Results and Discussions

3.1. Kinds of Medicinal Plants Based on Habitus

The results of the survey found 109 species of medicinal plants that vary the habitus as listed in Figure 1. Types of medicinal plants found consisting of 13 kinds of habitus, they are trees, bush, terna, herbs, shrubs, clumps, creeping vines, climbing bush, lower plants, vines, trunked shrubs, epiphytes, and herb creeping. The number of plant species based on habitus found in the environment of Universitas Lancang Kuning as presented in Table 1.

| No | Habitus         | Number of Plant Types |
|----|----------------|-----------------------|
| 1  | Tress          | 25                    |
| 2  | Bush           | 20                    |
| 3  | Terna          | 19                    |
| 4  | Herbs          | 14                    |
| 5  | Shrubs         | 19                    |
| 6  | Clumps         | 1                     |
| 7  | Creeping vines | 2                     |
| 8  | Climbing bush  | 2                     |
| 9  | Lower Plant    | 1                     |
| 10 | Vines          | 1                     |
| 11 | Trunked shrubs | 1                     |
| 12 | Epiphytes      | 2                     |
| 13 | Herb creeping  | 2                     |

Source: Results of processing (2018)

From Table 1 it can be seen that most of medicinal plant species are trees consisting of 25 species, followed by bush habitus of 20 species. Habitus of medicinal plants in some of the most studied sites are trees. This is in accordance with the statement submitted by [1] that medicinal plants found in Indonesia are more tree-like than other habitats, i.e. 40.58%. Types of medicinal plants in the Universitas Lancang Kuning area are the result of planting that functioned as shade plants and ornamental plants, or deliberately planted in the framework of enrichment of species diversity. However, some types of medicinal plants are wild plants. The wild plants are mostly from the habitus of shrubs, shrubs and lower plants.
Based on the location of the discovery, the types of medicinal plants most commonly found in the Faculty of Forestry. This happens because the faculty is the most widely planted tree species and there is also the Course of Conservation of Medicinal Plants, so that has been made garden collection of medicinal plants. Until now the planting of plant species aimed at enhancing biodiversity at Lancang Kuning University is still continuing. It is expected in the future Universitas Lancang Kuning will play an important role in creating a greener environment for Pekanbaru City. Urban green will provide environmental services such as comfort, freshness, pollution-free and noise [2]

3.2. Kinds of Plants Based on Usage and Used Parts

Most of the people of Indonesia have used plant medicinal plants to treat diseases, maintain health and maintain beauty. This is not surprising, because the richness of our biodiversity, including medicinal plants is very abundant. Indonesia together with other Asian countries such as China and India is one of the world's largest medicinal consuming countries, including in Riau Province. As one of the provinces with a diverse population of ethnic groups, Riau Province is a province that has a lot of diversity of medicinal plants and also uses it in everyday life.

However, the types of medicinal plants used are still limited to some commonly used species only. This happens because the knowledge of the community will benefit the types of medicinal plants are still limited. Knowledge of the benefits or usefulness of different types of medicinal plants and parts used is important to continue to be developed and disseminated to the community, because with such knowledge will have an impact on the existence of these plants. Each medicinal plant has a property of more than 1 and several types of medicinal plants have the same utility. This is possible because the active ingredients contained by each plant variety and the same active substances are owned by several different types of plants.

Medicinal plants are not only useful for medicinal ingredients, but can also be used as ornamental plants and as landscape elements [3]. In addition, other uses of medicinal plants are for flavorings of food or spices from a variety of dishes, as a fruit producer for human and animal consumption, natural coloring agents, as well as vegetables or foods. In Table 2, other uses of medicinal plants in the Universitas Lancang Kuning are presented.

Table 2. Other uses of medicinal plants at Universitas Lancang Kuning

| Kinds of Plants Based on Usage | Landscape elements | Flavorings of food or spices | Fruit producer | Natural coloring agents | Vegetables or foods |
|-------------------------------|--------------------|----------------------------|----------------|------------------------|---------------------|
| Landscape elements            | Angsana, Bakungan, yellow | Chilli, Red | Tamarind, sweet star fruit, Belimbing | Harendong, Turmeric, pandanus, teak leaves | Spinach, Beluntas, yam leaves, Katuk, Keladi, Siam Pumpkin, Aloe Vera, Taro, Sugar Cane, Eggplant |
| Bamboo, Beringin, Bogenvil, Brojolintang, Jabon, teak wood, frangipani flower, Kembang Sepatu, Ketapang, Kumis Kucing, Mahagoni, Mahkota Dewa, Mahkota Duri, rose flower, Miana, Nanas Kerang, Nyamplung, Pohon Sigsag, Pulai, Puring, Saga Pohon, Seruni, green betel, red betel, Soka, Sosor Bebek, Tanjung, Tapak Dara, Tanduk Rusa, Lemongrass | Ginger, Lime, Lime, Kencur, Turmeric, Pandan Wangi, | Wuluh star fruit, Durio, water apple, guava, coconut, Lamtoro, Mango, Mangosteen, Jackfruit, Srikaya, Papaya, banana, Sawo, Sawo Kecik, Soursop, Breadfruit, Takokak | Physalis peruviana, Durio, water apple, guava, coconut, Lamtoro, Mango, Mangosteen, Jackfruit, Srikaya, Papaya, banana, Sawo, Sawo Kecik, Soursop, Breadfruit, Takokak | Harendong, Turmeric, pandanus, teak leaves | Spinach, Beluntas, yam leaves, Katuk, Keladi, Siam Pumpkin, Aloe Vera, Taro, Sugar Cane, Eggplant |

Source: Results of processing (2018)
From Table 2 it can be seen that many of the plants around us that have been regarded as ornamental plants, shade plants or even wild plants that are considered useless turned out to have many benefits. Likewise, the seasoning is often used as a seasoning food was also nutritious medicine. Not only in Indonesia, the use of medicinal plants for food seasonings is also used in other countries, as has been investigated by [4] which results in ginger being used as a mixture of ice cream and can reduce the use of sugar in ice cream. In addition, ginger is also useful as a preservative, for example ginger extract can act as an antioxidant in soybean oil, so it becomes more durable [5]. Other benefits of ginger have been widely studied, among others, to prevent prostate cancer [6], lower blood glucose levels [7], also serves in inhibiting the growth of E. coli and S. aureus bacteria [8].

Other medicinal plants used as popular food seasonings are kencur (Kaempferia galanga) and celery leaves. Kencur is used as a spice of various Indonesian traditional dishes that contain many essential oils and can cure inflammation (infiamasi) [9] and lower cholesterol and increase bone density [10]. While celery leaves much preferred as a seasoning dish because of the fragrant aroma. According to [11] celery leaves other than useful as an anti-hypertension, also act as anti-stress and cholesterol-lowering. Some types of medicinal plants above are also useful as natural dyes and are plants whose parts have been used as food for both humans and animals, such as fruit, leaves or stems as vegetables. Turmeric and pandan are commonly used as food coloring by our society, including indigenous peoples such as the Iban Dayak Tribe [12]. Apart from being a food coloring, turmeric can also be used to dye cotton as a reactive synthetic dye companion commonly used [13]. Not only turmeric is used as a cotton dye, teak leaves can also be used to dye cotton fabrics [14].

Part of the plant used as medicine consists of roots, rhizomes, tubers, stems, bark, sap, leaves, flowers, seeds and fruit. But there are also plants that are used throughout its parts. Of the whole species of medicinal plants found in the University of Lancang Kuning the proportion of parts used is as in Figure 1.

The most widely used part is the leaf, about 31%, followed by the root of 15%. While the least used part is the sap and bamboo shoots. The use of leaf part of the plant as raw material of herbal medicine is done by our society, for example in the community around Cagar Alam Gunung Simpang Jawa Barat [15], and people in other areas. It is mentioned that the use of leaves is done because it has several advantages, that is more easily taken and consumed, more in a number of plants, and can be used as a vegetable or vegetables. In addition, in the leaves of the process occurs photosynthesis, so it is suspected to contain more active ingredients that have efficacy as a drug or to maintain health and beauty.
4. Conclusion

From the results of research that has been done then it can be concluded that in the Universitas Lancang Kuning area found as many as 109 types of medicinal plants, consisting of 13 kinds of habitus, and most habitus is tree. The usefulness of the plants found is to treat various diseases and maintain health, as well as other uses, ie as landscape elements, food seasonings, natural dyes, as vegetables and foods, and fruit producers. The parts used are roots, tubers, stem, bark, sap, leaves, flowers, fruits, seeds, bamboo shoots, whole parts of plants, and the most widely used are leaves.

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