



PRODUCTION OF YELLOW WOOD ROOT TEA AS A BLOOD SUGAR STABILIZER

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ABSTRACT

Diabetes mellitus is a disease or metabolic disorder that is increasing year by year, characterized by high blood sugar levels as a result of insulin function insufficiency. Diabetes mellitus, which is often referred to as diabetes, is a disease or metabolic disorder that is increasing year by year, characterized by high blood sugar levels as a result of insulin function insufficiency. Treatment is by using drugs. Currently, a treatment using herbal medicine is being developed, one of which is Kayu kuning, where in previous studies it was found that the roots of Kayu kuning can reduce blood glucose levels. This has triggered the Biochemistry and Medical Chemistry section of the Faculty of Medicine to introduce to the public the preparations of this herbal medicine with ready-to-use packaging and the right dosage. The process of making tea is carried out at the Chemical Basic Medicine Laboratory, Faculty of Medicine, Sriwijaya University. About 5.6 kg of yellow wood root, washed and cut into small pieces then dried and ground to obtain a coarse powder (simplicia) of about 2.5 kg. Yellow wood root simplicia is put into tea bags weighing 10 g per bag. One tea bag can be brewed with 200 mL of hot water and drunk once a day. In this service, 250 tea bags were produced which were packaged in 50 packages (5 tea bags/package). The production of this yellow wood root tea has been carried out in the Komplek Azhar Lama, Kenten Laut, Palembang.

Keywords: Herbal medicine, yellow root (*Arcangelisia flava*)

Keywords : yellow wood root tea, diabetes mellitus, blood sugar



INTRODUCTION

Diabetes mellitus (DM) is a disease characterized by increased blood glucose levels. DM is the 7th leading cause of death in the world and Indonesia has a fairly large number of people with this disease and is ranked 4th in the world after the United States, India, and China.¹ The incidence of DM in Indonesia is increasing every year, where the prevalence of DM in 2013 was 6.9%, while in 2018 it was 8.5%.²

Indonesian people use herbal plants to be used as medicine or herbs for the therapy of a disease, where the herbal plants will be processed by kneading, roasting, boiling, pounding, drying, squeezing and eating or drinking directly.³ The method of boiling can be done by using boiling water or hot water in the form of decoction or infusion of medicinal plants, so that the bioactive components contained in these medicinal plants will dissolve and produce pharmacological effects for therapy several related diseases.⁴

Kayu kuning (*Arcangelisia flava* (L.) Merr) is a vine that contains chemical compounds of alkaloids, flavonoids, phenols, saponins, and tannins.^{5,6} In various previous publications, it was explained that this yellow wood root can be used as antiplasmodial, antioxidant, antidiabetic, anticholesterolemic, antihypertensive, and anticytotoxic.⁷ Our society often uses various herbs to stabilize blood sugar levels, one of which is the root of Kayu kuning (*Arcangelisia flava* (L.) Merr), by drinking the boiled water of the Kayu kuning root. Yellow wood root water extract has the best potential to inhibit the action of the alpha-glucosidase enzyme than other extracts although its potency is lower than acarbose.⁸

People use this yellow wood root in the form of chunks or pieces of fresh roots to be boiled. This fresh yellow wood root contains a large amount of water. This large enough water content can cause the growth of fungi which can cause the bioactive components contained in it to be damaged. The dose of herbal plants used by the community for consumption as disease therapy is often in uncertain and precise quantities. Therefore, it is necessary to have a storage and packaging method that can allow the roots of this yellow wood to be used at any time and with the right dose and practical in its use.

METHODS

The method of this service activity is productive service, namely producing yellow wood root tea and then giving it to people who live in komplek Azhar Lama Kenten Laut kota Palembang. This yellow wood root is processed into simplicia and served in the form of ready-to-eat products in the form of tea bags. The yellow wood root used is the yellow wood root obtained from the city of Lubuk Linggau, kabupaten Musi Rawas. A total of 20 kg of fresh yellow wood are separated from other parts such as leaves and stems, were



washed and dried in the air without being exposed to direct sunlight, then chopped into small pieces and dried for a few days without being exposed to it. direct sun. After drying, mashed using a blender into a powder. The purpose of making this powder is that when boiling or soaking it in water, it can dissolve the active compounds with medicinal properties contained in it. Then the powder weighing 10 grams is put in a tea bag and tied tightly. Preferably after being packaged in this tea bag, stored in a plastic bag. How to use it is to pour 200 mL of hot water into a glass, put a pack of Kayu kuning root tea and cover immediately, let it stand for about 10 minutes. This herbal medicinal drink is ready to be used for therapy to lower or stabilize blood sugar and can be taken once a day.

DISCUSSION

The introduction of this herbal product was carried out at the Azhar Lama Kenten Laut complex, Palembang City on October 31, 2021, from 06.00 to 09.00. The event started with a joint heart exercise which is held every Sunday morning by the community around the housing. At around 07.15 the main event began with the introduction of the counseling team consisting of lecturers from the Biochemistry section, 4 students and 2 doctors who graduated from FK Unsri in 2021. Furthermore, counseling about diabetes mellitus and herbal therapy to reduce or stabilize blood sugar has been carried out by researchers from the Biochemistry and Medical Chemistry Section of Medical Faculty Universitas Sriwijaya. Furthermore, blood pressure checks and measurements of blood sugar levels are carried out for the surrounding community. After that, the package of this yellow wood root tea was distributed.

Research on the inhibitory activity of the alpha-glucosidase enzyme by aqueous extracts and ethanolic extracts from leaves, stems and roots of yellow wood (*Arcangelisia flava*) in vitro with IC₅₀ values for aqueous extracts of leaves, stems and roots of 195,161; 138.9881 and 48.68632 µg/mL and ethanol extract of leaves, stems and roots of 365.8793; 123.0814 and 66.9616 µg/mL, the root has a better potential to inhibit the activity of alpha-glucosidase enzyme than the leaves and stems of yellow wood, where the water extract of the roots of the yellow wood has the best potential for inhibited the action of the alpha-glucosidase enzyme than other extracts, although its potency was lower than that of acarbose and the antidiabetic test has also been tested in vivo where the water extract of the yellow wood root is able to lower the blood glucose of mice.^{8,9} With frequent consumption of this herbal medicine will also not be dangerous because extract of roots yellow root in doses of 250, 500, and 750 mg/kgBW in rats for 28 days no cause damage to liver and kidney cells through the determination of SGOT, SGPT, and observation histopathology.¹⁰



Picture 1. Kayu Kuning (*Arcangelisia flava*)



Picture 2. Kayu kuning in tea pack



(a)

(b)

(c)

Picture 3. Yellow wood root tea introduction to community

- a. Blood pressure measurement
- b. Blood sugar level measurement
- c. Yellow wood root tea distribution



CONCLUSION

Yellow wood root can lower blood glucose levels and is not harmful to the liver and kidneys.

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