

Short Communication

Herbal Ingredients for Athlete Stamina: Short Communication

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Abstract: *Background:* The side effects or dangers of using doping are numerous. From a cardiovascular perspective, doping causes irregular heart rhythms, high blood pressure, heart attacks, and sudden death. So many athletes are looking for halal natural ingredients that are safer and do not violate WADA laws. *Aim:* To find out natural ingredients that can be used as natural doping for athletes. *Method:* Using a systematic review of journals published on Google Scholar in the last 10 years. *Result:* There were 4 plants reviewed by the author, namely ginseng, lime, banana, and also akway. *Conclusion:* ginseng, lime, banana, and also akway are to be used as halal doping and are rich in benefits.

Keywords: Herbal medicine, athlete stamina, natural dope.

1. INTRODUCTION

The use of herbal medicinal products and supplements has increased over the last few decades. Today, several herbs are used to increase stamina and body mass. Emerging evidence suggests that the health benefits of plants are attributed to their bioactive compounds such as Polyphenols, Terpenoids, and Alkaloids which have several physiological effects on the human body. Sometimes manufacturers launch many products with prohibited ingredients in them with the wrong amount or fake supplements that cause harmful side effects. Until now, there is no guarantee that herbal supplements are safe for consumption by anyone and athletes in the field of sports in particular. Therefore, the purpose of this article is to provide education and the side effects of the most widely used plants in sports. As for the plants according to the following categories: Ginseng, alkaloids, and other herbal ergogenics such as Tribulus Terrestris, and Cordyceps Sinensis. We found that most of the effects of herbal supplements were probably due to the activation of the central nervous system via catecholamine stimulation. Ginseng was used as an endurance performance enhancer, while alkaloid supplementation resulted in improvements in intense sprinting and cycling exercises. Several other alkaloids such as green tea extract have been used to increase body mass and composition in athletes. Other herbs (i.e. Rhodiola, Astragalus) help relieve muscle and joint pain, but results on their effect on sports performance are non-existent [1].

2. METHOD

This research is qualitative research. This study emphasizes more on knowing the hidden meaning, understanding halal herbs, developing theories, ensuring the truth of data about the good and bad use of herbal ingredients, and researching halal doping. The approach in this article uses a qualitative approach. Data was collected through the library research method. In a library, data is obtained by observing related literature in the form of articles, books, and documents, or by observing online literature. Furthermore, the data were analyzed and discussed according to the themes discussed. The study in this article is focused on discussing the theme "Herbal Ingredients for Athletes' Stamina". While secondary sources are obtained from national and international journal articles and other internet sources. Data collection techniques in this study were carried out by identifying discourse from major national and international journal articles, as well as the web google scholar.

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3. ANALYSIS RESULTS

In this research, Ginseng is one of the best popular herbal dietary supplements and is probably the most studied herb with regard to physical performance. Ginseng consists of many species in the Araliaceae family. There are several species of ginseng such as Asian ginseng, Korean ginseng, Chinese ginseng (*Panax ginseng*), American ginseng, Canadian ginseng (*Panax quinquefolius*) and Siberian ginseng (*Eleutherococcus senticosus*). Many Asian countries, especially China and Korea use ginseng in food and medicine, meanwhile, *Panax ginseng* preparations have been described in human clinical trials as anti-inflammatory, antioxidant, brain function stimulant, anabolic and immunostimulant, and power performance enhancement stand. This species of ginseng contains many important compounds such as vitamins (A, B, C, and E), minerals (iron, magnesium, potassium, and phosphorus), fiber, protein, saponins, and Ginsenosides the main active constituents in *Panax* herbs. This component has been shown to reduce mental stress, improve immune function, and stabilize blood pressure. In addition, Ginseng has important antioxidant binding, which inhibits hydroxyl radicals and lipid peroxidation and facilitates mitochondrial activity during exercise. It is considered an adaptogen agent with Ginsenosides, Eleutherosides and Ciwujianosides thought to be responsible for ginseng's ergogenic effects. In addition, chronic use of Ginseng improves cardiorespiratory function and lowers blood lactate concentrations, in addition to improving physical performance. Ginseng's ergogenic effects have been attributed to physical conditions [1].

Not only ginseng, but the Akway plant (*Drymis Piperita Hook.*) is also often used by the Arfak tribe as a stamina enhancer. The bark is often used by scraping and brewing with hot water and then drinking it. Another way to use it is to be bitten during long trips to increase endurance and stamina [2]. The bark of the Akway tree also contains a lot of flavonoids, saponins, and tannins [3]. Several studies on the phytochemical compounds that make up Akway have been reported. The ethanolic extract of Akway bark contains alkaloids, saponins, triterpenoids, flavonoids, and tannins [4, 5].

Several studies have shown that lime (*Citrus Aurantifolia*) is useful for lowering total blood cholesterol levels. This is because lime juice is rich in Vitamin C which is a natural antioxidant, which works by lowering oxidative stress, inhibiting carbohydrate digestion, and inhibiting fat transport along the walls of the small intestine, thereby lowering blood cholesterol [6, 7]. Based on the results of phytochemical analysis, lime juice contains pectin, saponins, tannin alkaloids, steroid synephrine, and flavonoids [8]. Where Pectin, Synephrine, and Flavanoids (quercetin, rutin, tangeritin, naringin, and hesperidin) have an effect in lowering blood cholesterol levels. Based on research conducted by Kang, Kwon, Ahn, Lee, and Jo (2009) studied the effect of pectin contained in lime, by giving pectin to mice that had been fed high cholesterol, and the result was a reduction in blood cholesterol levels and triglycerides and LDL cholesterol [9]. Synephrine has the basic ability to stimulate "cold feeling" as compensation for the body to produce heat or to use energy taken from fat [10, 11].

Banana (*Musa paradisiaca*) is a fruit that contains complex carbohydrates and simplex so it is good to be consumed during training or competition because it can provide energy quickly. Bananas are a source of energy used to increase the endurance (endurance) of athletes because bananas are a source of carbohydrates and potassium. Another nutrient contained in bananas is vitamin B complex which can help speed up energy metabolism. Based on the theory, the nutritional content of 150 grams of bananas is 594 mg of potassium (15.2 mmol K⁺), 47.7 grams of carbohydrates, 1.8 grams of protein, 0.3 grams of fat, 4 grams of dietary fiber, and 1 mg of sodium (0,0043 mmol Na⁺). The carbohydrate content in bananas can be used as an energy source during exercise. Bananas contain carbohydrates in the form of sucrose, fructose, glucose, and fiber. Research shows that consuming two bananas 30 minutes before exercise can provide 90 minutes of energy. Banana is a fruit that is recommended for athletes because it has the advantage of a combination of carbohydrates and B vitamins so that they can provide energy quickly. VO₂max is a person's cardiorespiratory ability to consume oxygen maximally per minute. Athletes who consume more oxygen per minute have a higher diffusion capacity where oxygen can diffuse into the pulmonary capillaries bananas can be used as an ingredient to create functional foods to prevent fatigue or used to replace doping which has the function of protecting physical and psychological conditions, this is an important finding for athletes. Research by James et al., regarding the invitation to leave doping and switch to using natural foods to support the performance (speed, strength, endurance, and flexibility) of athletes can be accepted by athletes who usually use doping in the form of drugs or supplements as an energy boost [12, 13].

4. CONCLUSION

In this study, it can be concluded that there are several plants that can be used as herbal medicines without using doping that contains chemicals and is forbidden. So from this article, we can use ginseng, lime, banana, and also akway to be used as halal doping and rich in benefits. From Qur'an surah abasa 31-32 that Allah makes fruit and grass, [As] enjoyment [i.e., provision] for you and your grazing livestock. So that we should consume and praise to Allah as a good gift.

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