

Analysis of effective components and uses of extracts from baobab

Liangchun Xu

Synmr BIOTECHNOLOGY (SHANGHAI) Limited Shanghai 200500

Abstract:The baobab is a unique tropical plant,It's widely used because of its rich nutrition and medicinal value,The composition and method of the extract were analyzed in this paper,And combined with practical cases for use,Several theoretical bases are proposed,The aim is to provide the corresponding theoretical basis for the comprehensive utilization of baobab.

Key words:Baobab;Extractive;Active ingredient;Use

Introduction:The baobab is a warm-loving tropical tree,Tolerance to high temperatures, frost has a greater impact on the baobab,It grows well in areas with annual precipitation of 300-800mm,Where annual precipitation exceeds 1000mm, excessive water can affect baobab growth.However, baobab trees are adaptable. Although sour and alkaline soil and well-drained fertile soil can make baobaobaobaobaobaobaotrees grow better, they grow better in clays and sandy soil.The extract of baobab is rich in active ingredients,And has a variety of effects,As a dietary supplement, it can accelerate the burning of fat during weight loss;Add to skin care products has moisturizing, antioxidant and other effects,So it's an ideal ingredient for many skin care products,Skin care products containing baobab extract can keep skin hydrated,Improve the skin tightness;In terms of medical treatment, it can play a medical role such as clearing heat and reducing swelling.Baobab extract has played a huge role in the development of some drugs.^[1]Analysis of the active composition and use of baobab extracts,It aims to maximize the role of baobab trees and provide more services.

1 Effective components of baobab extract

1.1 Ingredients

Baobab extract contains rich active ingredients, which brings many benefits to human health.These components are not only present in the dried leaves and young leaves of the baobab tree, but also widely distributed in its fruits and seeds, which together constitute the unique nutritional value of the baobab tree.The dried leaves of the baobab tree contain 13% to 15% protein,It provides the human body with a rich source of amino acids, helping to maintain the normal function of the muscle, bone and immune system;The sugar content is between 60% and 70%, providing the body with sufficient energy sources to help maintain the needs of daily activities.Leaves are also rich in oil and ash, which oil contains a variety of unsaturated fatty acids, help to reduce cholesterol, improve cardiovascular health;The ash content contains calcium, iron, potassium, magnesium, manganese, molybdenum, phosphorus and zinc,These elements play an indispensable role in maintaining the normal physiological function of the human body.

Protein content in the young leaves, although slightly lower than in the dry leaves,But it also has nutritional value,Young leaves are rich in antioxidants like vitamin A, vitamin C, and beta-carotene,These ingredients can not only help to enhance immunity, prevent common diseases such as colds, but also can protect the eyes, skin and other organs from the damage

of free radicals, and delay the aging process .^[2]

The fruit of the baobab is also a nutrient-rich natural food, The fruit contains plenty of sugars, cellulose, and vitamin C, The content of vitamin C is extremely high, about 10 times that of oranges. Vitamin C plays an important role in enhancing immunity, promoting iron absorption and maintaining skin health. The fruit is also rich in protein and fat, providing comprehensive nutrition for the human body.

Baobab seeds are rich in various nutrients, including fat, protein, sugars and cellulose, These ingredients not only provide energy to the body, but also promote intestinal motility and improve digestive function, Help the body to accelerate the metabolism of waste and toxins, and maintain a healthy body.

1.2 Extraction method

Baobab fruit and fruit are rich in polyphenolic compounds with extremely high nutritional and medicinal value, The traditional extraction and purification methods are inefficient, limiting the exploitation and utilization of baobab resources, This paper analyzes how to extract "baobab extract" from baobab, and the extraction methods are as follows:

Treatment process: The baobab fruit is thoroughly washed to remove surface impurities and possible pollutants to ensure the purity of the polyphenol compounds extracted later. The washed baobab fruit is dried at a drying temperature of 105°C for 24 hours to ensure that the moisture is fully removed and the active ingredients are not destroyed by high temperatures. After the completion of drying, the grinding work is carried out, and the crushed baobab fruit is passed through the 20-mesh screen, the particle size of the 20-mesh screen is about 1mm, and the subsequent extraction effect will not be affected by too large or too small particle size.

Extraction method 1: By the ultrasound-assisted ethanol extraction method, the crushed BFS was extracted using an ultrasonic cell grinder. By optimizing parameters such as ethanol concentration, extraction temperature, and extraction time, For example, each 10 grams of BFS powder is added with 300ml 50% ethanol, the amplitude is set at 30%, and the temperature is controlled at 60°C to achieve efficient extraction of polyphenols, and the clarified liquid is obtained through filtration, laying the foundation for subsequent purification steps.

Extraction method 2: In the hot water extraction method, BFS powder is mixed with water in a certain proportion, heated to a boil and kept for a period of time. The extraction rate of polyphenols was effectively improved by extracting three times and combining the liquid medicine. Then food grade diatomite was added for filtration to obtain the clarified liquid. Compared with the polyphenol extraction rate of the two methods, the ultrasound-assisted ethanol extraction method has higher extraction efficiency.

Separation and purification: This process is mainly through the large pore resin column for selective adsorption and elution of the liquid medicine. Pass the solution at a flow rate of 1.5 ± 0.1 BV / h through the already processed D300 large hole resin column, Ensure that the liquid can fully contact the resin, while avoiding insufficient adsorption caused by too fast flow rate, Rinse the resin column with purified water until the electrical conductivity of the effluent drops below 50 μ S/cm. The purpose of this step is to remove unadsorbed impurities and other small molecules remaining in the resin column to ensure the purity of the subsequent elution step;

After washing, the resin column was eluted with a certain concentration of ethanol solution. Effectively destroy the adsorption force between polyphenol compounds and resin, Desorption of "baobab extract" from the resin, During the elution process, the effluent is collected, which is rich in "baobab extract". The collected effluent is concentrated under reduced pressure at 60°C. Excess ethanol and water were removed and concentration can be increased by reduced pressure to facilitate subsequent drying.

Compared with other alkaloids, alkaloids extracted from baobab have the following advantages:

Low cost: Baobab has rich resources, strong adaptability to the growing environment, and short growth cycle of raw materials. The extraction process efficiency is higher, up to 90%, The extraction rate of other alkaloids is generally about 75%, so it can be seen that the raw material cost of baobab extract is low and the source is wide, which greatly increases the market competitiveness of similar products.

With security: The extract from baobab has higher activity index and toxicity index of 5, which has higher safety compared with other alkaloids. During the preservation process, the biological activity is not susceptible to destruction and facilitates preservation. In the food industry, it is also used as a natural antioxidant, because of its good stability, can effectively extend the shelf life of food, while maintaining the nutritional value of food.

In summary, Compared with other alkaloids, the polyphenol alkaloids extracted from baobab showed significant advantages in bioactivity and stability. Baobab extract also has antioxidant, moisturizing, anti-inflammatory, heat and swelling, condiments and other effects, The combination with L-carnitine can also reduce weight, and the use of the extract is analyzed in detail in the third section of this paper.

2 Uses of baobab extract

2.1 Moisturize and improve the skin

Extract of the baobab Seed oil is a natural oil rich in a variety of fatty acids, Such as palmitic acid (unsaturated fatty acids), Oleic acid (monounsaturated fatty acids) and linoleic acid (polyunsaturated fatty acids). These ingredients are beneficial to human health, linoleic acid as a natural component of sebum, in strengthening the epidermal lipid barrier and maintain the skin metabolism normalization has a positive effect, combined with skin care products, help to prevent skin moisture loss, keep the skin moist, and easy to be absorbed by skin epidermis tissue, can better protect the skin moisture loss.

Shea butter oil has a high penetration and nourishing property, which can help the skin regain elasticity and luster. For example, it can enhance the skin's natural barrier function and reduce transepidermal water loss for dry skin and skin with compromised barrier. When the skin is damaged, using extracts of shea butter can promote the regeneration and repair of skin cells, reduce the depth of scars, and help improve the appearance and depth of stretch marks, such as in the treatment of pregnancy lines. By applying and massaging shea butter extract on the affected areas daily, it can effectively prevent the formation of pregnancy lines. For pre-existing stretch marks, it can also help reduce their appearance and depth, helping the skin regain smoothness and firmness [3].

To verify the restorative effects of baobab seed oil on the skin, baobab seed oil was combined with paraffin and petrolatum emulsion and compared with a blank group that received no treatment on the leg. The treatment was applied twice daily for 12 consecutive

days. According to the test results, baobab seed oil was able to increase the moisture content of the stratum corneum within 30 minutes. The specific experimental results are shown in Figure 1.

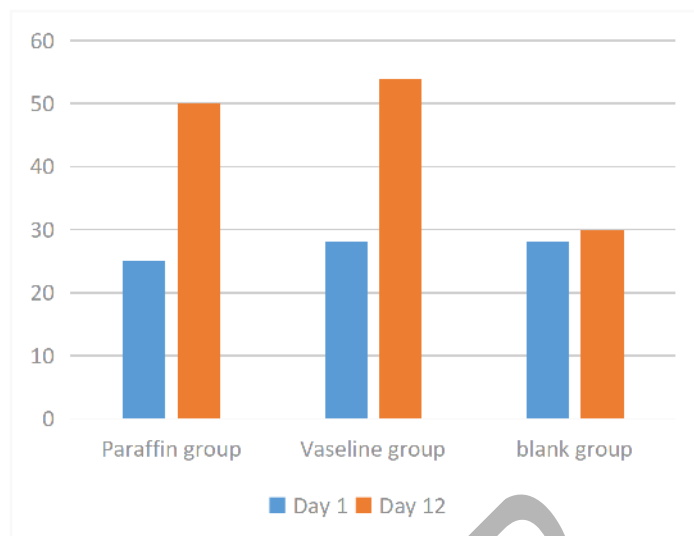


Figure 1. Display diagram of the water content of the cuticle

From the data in Figure 1, it can be seen that the oil from the baobab fruit can increase the moisture content of the stratum corneum in a short time, indicating that it has excellent instant moisturizing effects. For those who need to quickly relieve skin dryness, natural ingredients are easier to be absorbed by the skin and avoid the side effects of using chemical ingredients. The reason for this may be that it contains rich unsaturated fatty acids and antioxidants, which maintain the integrity of the skin barrier and prevent water loss. Baobab seed oil also has the function of promoting skin cell metabolism, accelerating the renewal of the stratum corneum, and making the skin smoother.

2.2 Prevent the formation of acne and acne

The oil from baobab seeds contains a higher proportion of linoleic acid, which is a type of fatty acid that is beneficial to human health. Linoleic acid plays an important role in moisturizing the skin, helping to improve the water balance of the skin and making the skin softer and smoother. Linoleic acid in baobab seed oil also helps heal skin diseases and sunburn, and it also treats acne vulgaris.

In addition to linoleic acid, baobab seed oil contains rich antioxidants such as high unesterified matter, of which 75% is beta-sitosterol. These antioxidants can combat the damage caused by free radicals, protect skin cells from oxidative stress, and help treat skin diseases and injuries. Baobab seed oil also contains various vitamins and minerals, such as vitamins A, E, and F, which are equally important for skin health and can stimulate cellular tissue regeneration, enhance skin resistance, and further promote skin repair and healing. Baobab seed oil also has the function of alleviating burn pain and accelerating epithelial tissue regeneration. This makes it useful in treating acne and inflammation.

In addition to linoleic acid, baobab seed oil contains rich antioxidants such as high unesterified matter, of which 75% is beta-sitosterol. These antioxidants can combat the damage caused by free radicals, protect skin cells from oxidative stress, and help treat skin diseases and injuries. Baobab seed oil also contains various vitamins and minerals, such as vitamins A, E, and F, which are equally important for skin health. They can stimulate cellular

tissue regeneration and enhance skin resistance, further promoting skin repair and healing. Baobab seed oil also has the function of alleviating burn pain and accelerating epithelial tissue regeneration. This makes it excellent in treating acne and inflammation, especially suitable for the care of oily and acne-prone skin.

Five experimental participants were organized and used skincare products containing baobab seed oil, such as creams and cleansers, all of which contained baobab seed oil, and their pre-experiment problems and post-use conditions were recorded, as shown in Table 1.

Table 1 Data sheet on prevention of pimples and acne formation

Age range	Experiment number	Skin properties	Initial problem	Service time	After use
20-25	1	Oily skin	comedosis	15 Days	The number of acne is reduced by 20%, and the production of oil in the skin is balanced
				1 month	The number of acne was reduced by 60%
	2	Mixed skin	Mild acne	15 Days	Reduce acne resolution by 30%
				1 month	Acne recedes and skin smoothness improves
	3	Dry skin	Occasional acne	15 Days	40% less acne
				1 month	Skin oil secretion adjusted, acne did not appear again
	4	Sensitive skin	Acne and erythema	15 Days	Acne is reduced by 20% and erythema is reduced by 20%
				1 month	Reduced acne, reduced erythema, and increased skin tolerance
	5	Mature skin	Senile acne	15 Days	Acne was improved by 30%
				1 month	Significant improvement in acne, and increased skin elasticity
20-25	1	Oily skin	Acne prone	15 Days	Fewer acne outbreaks
				1 month	Acne has no visible signs, and the skin is smooth
	2	Mixed skin	Both pimples and acne	15 Days	Acne resolution decreased by 30% and acne decreased by 35%
				1 month	Acne, acne resolution, smooth skin
	3	Dry skin	Sporadic acne	15 Days	Reduced incidence of acne
				1 month	The acne did not reappear

	4	Sensitive skin	Acne is more severe	15 Days	Acne is reduced by 20%
				1 month	There are no obvious signs of acne, and skin tolerance is increased
	5	Mature skin	Acne, mild acne	15 Days	Acne 50% better, acne 50% better
				1 month	Acne and pimples are significantly improved, and skin elasticity and smoothness are improved

2.3 Hair care

Shea butter oil is rich in abundant vitamin E and high content of fatty acids, which can provide excellent nourishing and repairing effects for dry, brittle, and split hair. Shea butter oil can effectively smooth rough parts of hair, provide much-needed moisture and nutrients to damaged hair, thanks to its fatty acid components that can deeply nourish hair, making it resilient and shiny; the antioxidant action of vitamin E also helps protect hair from free radical damage, slowing down the aging process of hair. Shea butter oil can also help alleviate itching caused by dandruff, which often accompanies dryness and itching of scalp. Shea butter oil can moisturize the scalp and improve the scalp environment, thereby reducing or avoiding the occurrence of scalp itching.

Baobab seed oil is very easy to use as a hair care oil. Just apply it directly to the scalp and hair, then wear a shower cap and leave it for 1-3 hours, and finally wash it with shampoo. This method can make the hair fully absorb the nutrients of the baobab seed oil, making the hair softer and smoother, as silky. Five participants were organized and their hair care process using baobab seed oil was recorded, and the data in Table 2 were obtained.

Table 2 Data sheet of baobab seed oil as hair care oil

Age range	Experiment number	Hair type	Before use	After use	Service time
20-25	1	straight hair	Split ends, rough, dry	smooth	15 Days
	2	straight hair	Split ends, rough, dry	soft, glossy	30 Days
	3	Curly hair	Roughened, difficult to manage	smooth	15 Days
	4	Curly hair	Roughened, difficult to manage	easily combable, elastic	30 Days
	5	Frizzy hair	Dull, dry and brittle	glossy	15 Days
	6	Frizzy hair	Dull, dry and brittle	More dense , glossy	30 Days
25-30	1	straight hair	Greasy, shiny	refreshing	15 Days
	2	straight hair	Greasy, shiny	Refreshing , glossy	30 Days

	3	Curly hair	Soft and vulnerable	Hair is strong and strong	15 Days
	4	Curly hair	Soft and vulnerable	Hair is strong and strong, not easily damaged	30 Days
	5	wavy hair	Rough, inelastic	smooth	15 Days
	6	wavy hair	Rough, inelastic	Smooth, elastic	30 Days

2.4 Food aspects

The extract of baobab tree can be used as a component of refreshing drinks and seasonings, adding a unique flavor while also bringing positive promotional effects to human health, such as adding the extract of baobab tree to a drink, with 5 grams of baobab tree extract per 100 milliliters of drink, its nutrient content such as vitamin C, 20 milligrams per 100 milliliters; potassium, 50 milligrams per 100 milliliters; improving the nutritional content of the drink. According to market surveys, 90% of consumers believe that the drink has a unique taste and is refreshing and thirst-quenching.

The young leaves of baobab, rich in nutrients, can be used as vegetables, such as salads, soups and sauces, etc., not only delicious dishes, but also rich in a variety of vitamins, good for human health. The young leaves are used in salads, each salad uses 50 grams of baobab leaves, each 100 grams of young leaves contains 2.5 grams of protein, 100 milligrams of calcium, this salad is loved by healthy eaters, sales continue to rise.

The leaves of the baobab tree can also be ground into powder after drying, which can be used as raw materials for making pickles. The powder can not only increase the flavor of dishes, improve the taste, but also add characteristics to food and enhance the nutritional value of food. 50 grams of baobab leaf powder is added to each kilogram of pickled vegetables, which improves the taste of pickles at the same time, so that pickles are rich in vitamins, and are well received in the market.

The pulp of the baobab tree can be tasted fresh or dried. The fruit not only tastes good, but also is a good source of vitamins and minerals. Long-term moderate consumption has a positive impact on health. Fresh baobab pulp is rich in vitamin C and iron, with 30 mg of vitamin C and 2 mg of iron per 100g of pulp. Vitamin C helps boost immunity, promotes collagen synthesis and plays an important role in skin health and wound healing, while iron is an important component in the blood, which is essential for preventing anemia and maintaining normal metabolism in the body. In addition to being eaten directly as a fruit, the pulp of the baobab can also be added to porridge, and can also be used to brew fruit wine and drinks, integrating the sweet flavor of the baobab into a variety of drinks, so that people can enjoy the delicious while also ingesting rich nutrition. In terms of consumption, it is recommended to eat 100g of fruit directly every day, and about 30g each time as a snack, so as to ensure adequate nutrition without bringing burden to the body due to excessive consumption^[4].

Baobab seeds are a multifunctional ingredient that can not only be eaten raw as a healthy and delicious snack, but also can be eaten after baking, providing people with rich taste and nutrition. Baobab seeds also have several applications in cooking. The seeds are rich in protein and fiber, and can be used as a thickening agent in cooking, 20 grams of roasted seeds can increase the richness of the soup and make the taste mellow. It can also be

used as seasoning agent to add unique taste to various foods, whether in cooking, barbecue or salad, with roasted seeds to enrich the taste of food.

The seeds of the baobab tree can also be used to make cooking oil, which has a very high protein content, more than common vegetable fats such as peanuts, and is a very healthy edible oil. Baobab seed oil is also rich in beta-carotene, and its content is 43.36 μ g/100g, which is twice that of palm kernel oil. β -carotene is an important nutrient for maintaining human health, which can prevent cardiovascular diseases, cataracts and antioxidant functions, and help prevent aging and a variety of degenerative diseases caused by aging. Baobab seed oil is also rich in polyphenols, which has good antioxidant properties, and also contains calcium, magnesium, potassium and other minerals, with the highest content of potassium. Followed by calcium, sodium, magnesium and trace elements such as iron. Baobab seed oil is not only a high-quality edible oil, but also can be used as a substitute for other plant edible oils, providing more options for people's healthy diet, using the cold pressing method to extract, can better retain the nutritional content of the oil, 15 grams of protein per 100 grams of oil, much higher than the 5 grams of peanut oil.

2.5 Medical aspects

Each part of the baobab tree has a unique medicinal value, the leaves can be used to treat a variety of diseases, such as kidney and bladder diseases, asthma, fatigue, abdominal pain, tumors, diarrhea, trauma, insect bites and inflammation, can also be used to produce fever, cancer and heart disease treatment is also helpful; The bark of the baobab tree is used in a wider range of applications to prevent colds, treat toothaches, fevers and dysentery. The bark of the baobab tree is also used as a painkiller and to treat diseases such as diabetes and polyuria. Seeds, roots and other parts also have certain medicinal value, as shown in Table 3.

Table 3 Relevant cases

Application field	efficacy	Data case
Nourishing stomach and gallbladder	Promote digestion and improve gastrointestinal function	According to the survey data, in clinical trials for patients with stomach discomfort, patients treated with baobab extract reported significant improvement in stomach discomfort after taking it for one month.
clearing heat for detumescence	Reduce inflammation, detumescence and relieve pain	According to the survey data, in a trial for arthritis patients, patients took a daily drug containing baobab extract, and the results showed that 70% of patients had a significant reduction in joint swelling and pain within two weeks.
Hemostasis and diarrhea	Shorten hemostasis time and relieve diarrhea	According to survey data, treatment for mild diarrhea caused by indigestion cut the average time to antidiarrhea down to two days.
tranquilizing and allaying excitement	Relieve anxiety and promote sleep	In a study involving insomnia patients, 60% of those who used baobab extract as an adjunct treatment reported an improvement in sleep quality and a significant reduction in anxiety.
anti-aging	Improve immunity, delay	A long-term study showed that people who had long consumed foods or extract supplements containing baobab extracts had more immunity and

	aging	showed slower signs of skin aging than those who did not.
Cancer treatment	Inhibition of gastric cancer cell formation and expansion	The substance extracted from the baobab tree has shown an inhibitory effect on gastric cancer cells in vitro experiments, effectively inhibiting their proliferation and spread, providing a new potential drug source for cancer treatment.
Anti-inflammatory drug	Treatment of skin inflammation, trauma	In some areas of Africa, local residents use the serous fluid of baobab leaves and fruits as anti-inflammatory drugs to treat skin inflammation and mild trauma, which has a long history.
Paper making, mat weaving, rope making	Using the cellulose in the bark	The bark of baobab is rich in cellulose, which can be used in papermaking, mat weaving, rope making and other processes, and has the advantages of environmental protection and sustainable utilization.

The pulp can prevent dysentery and promote perspiration, thereby indirectly suggesting that the utilization of the pulp and extract of the baobab tree contributes to accelerating the body's metabolism and detoxification process. When the body sweats, the metabolism escalates, thus exerting a certain auxiliary role in fat-burning [5]. Merely consuming the flesh of the baobab tree does not directly result in fat-burning. It is essential to combine living habits, exercise volume, and so on. L-carnitine can be combined with the pulp extract of the baobab tree to achieve the effect of fat-burning while fulfilling the substances requisite for the human body. The combination of baobab pulp extract and L-carnitine has a positive impact on weight loss.

When utilized as a dietary supplement, it demonstrates a positive effect on weight loss. It is capable of facilitating the oxidation and decomposition of fat, assisting in the transfer of long-chain fatty acids to mitochondria for oxidative metabolism, and subsequently converting fat into energy. This procedure has a favorable influence on weight reduction and the reduction of body fat, with a more notable effect when combined with a rational diet and moderate exercise. During the course of exercise and weight loss, the accumulation of lactic acid restricts the endurance of exercise. It can optimize energy metabolism and effectively diminish the accumulation of lactic acid, thereby alleviating fatigue symptoms during exercise, assisting people in better addressing the fatigue brought about by exercise during weight loss and exercise, prolonging the exercise duration and enhancing the overall quality of the exercise. GBB also contributes to controlling appetite and reducing people's desires for high-calorie foods, which is the key to achieving successful weight loss and attaining weight loss goals more effectively.

Because L-carnitine, as a naturally occurring derivative of an amino acid, plays a role in promoting the oxidation and breakdown of fatty acids in the body, increasing L-carnitine intake can effectively accelerate the fat metabolism process and reduce fat accumulation in the body. The pulp extract of the baobab fruit, on the other hand, is rich in various nutrients and can work synergistically with L-carnitine to achieve better results. In this study, we collected data from five individuals who used L-carnitine and baobab fruit pulp extract for weight loss. The extraction process of the baobab fruit pulp extract was developed by SYNMR BIOTECHNOLOGY (SHANGHAI) LIMITED, which ensures its scientific validity, as shown in

Figure 2.

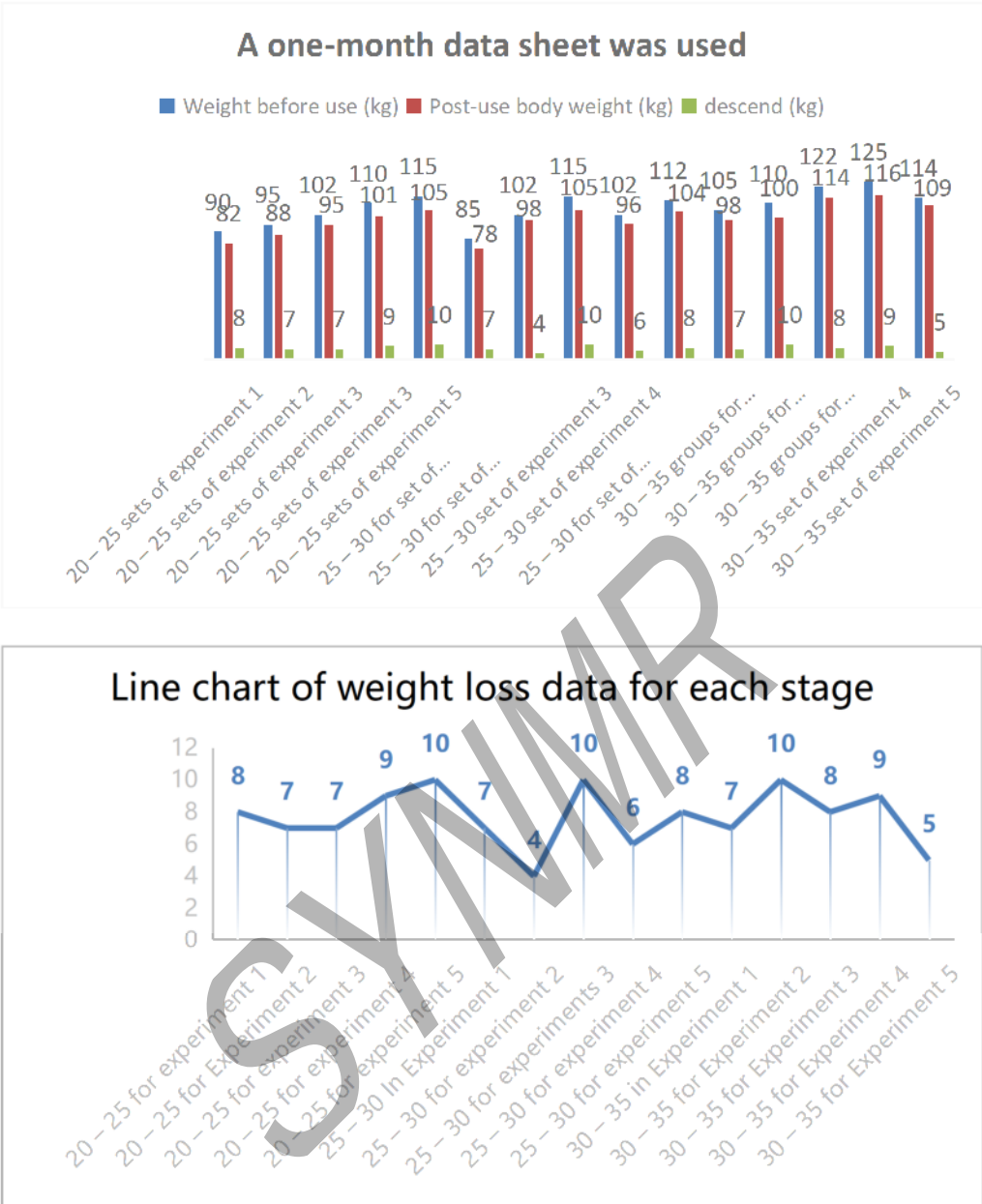


Figure 2 weight reduction data Fig

The alkaloids extracted from the baobab tree can help improve the body's metabolic rate by accelerating the fat metabolism process, increasing the body's heat expenditure, and effectively burning calories, helping people achieve their weight loss goals. An experiment was conducted on two 25-year-old individuals, one of whom used GBB and the other did not, to record and compare their sweating levels and calorie consumption during their exercise, to see the effect of GBB, as shown in Table 4.

Table 4 compares the used and unused data

experimenter	GBB	Exercise time (minutes)	Sweating capacity (g)	Calories consumed (kcal)	Body temperature after exercise (°C)
--------------	-----	-------------------------	-----------------------	--------------------------	--------------------------------------

Experimenter A	Use	45	1200	500	37.1
Experimenter B	unused	45	850	400	36.5

It can be discerned from the data that the amount of sweating when using baobab extract is 1200 grams, and the amount of sweating without baobab extract is 850 grams, suggesting that the utilization of baobab extract leads to more sweat production during exercise, demonstrating that the baobab extract enhances the sweating effect. The high calorie consumption will also boost the metabolic rate and expedite the burning of fat. To verify the accuracy of the data, an experiment was conducted on two 25-year-old men and two 30-year-old men for one month. Various data were meticulously recorded and weight loss was compared, aiming to verify the efficacy of baobab extract in the process of weight loss. Specific data are presented in Table 5.

Table 5 Comparison of weight loss data in one month

age	Use of GBB	Initial weight (kg)	Weight loss (kg)	Weight loss (kg)	Exercise time (minutes)	Sweating capacity (g)	Calories consumed (kcal)	Body temperature after exercise(°C)
25	Use	80	74	12	45	1300	550	37.5
25	unused	82	79	6	45	950	480	36.7
30	Use	85	80	10	45	520	530	37.3
30	unused	84	82	4	45	490	490	36.9

In terms of weight loss, the men who used the extract from the baobab tree showed more significant weight loss results. For sweating and calorie consumption, the men who used the extract from the baobab tree sweated more and consumed more calories in the same exercise time; in terms of body temperature after exercise, the men who used the extract from the baobab tree had slightly higher body temperature, which accelerates the process of fat metabolism. This verifies that the extract from the baobab tree has the function of increasing body heat and accelerating fat metabolism in weight loss, and the experimental personnel who used the extract from the baobab tree said that their desire for food was reduced and they did not feel too tired after exercise. Therefore, from the analysis of the data, the extract from the baobab tree has a positive promoting effect on weight loss and has no adverse effects.

3 Conclusion

The baobab tree, as a natural plant resource, has broad application prospects in many fields with its effective components extracted. With people's increasing pursuit of a healthy lifestyle, the value of baobab tree extracts is being widely utilized. To fully utilize the value of baobab tree extracts, it is necessary to strengthen the development and utilization of its effective components, and explore more potential application areas to improve the purity of the extracts.

Reference

- [1] Xie Guimei, Li Xiaojie, He Yifei, Meng Xing. Analysis on the efficacy and value of African baobab seed oil [J]. Chinese Cosmetics, 2023, (04): 80-83.
- [2] LIU Yuan-shuang, Wan Jun-nan, ZHOU Yadong, XIN Hai-ping, WANG Qingfeng. Research progress of baobab [J]. Chinese Journal of Plant Science, 2019, 38(04): 558-564. (in Chinese)
- [3] Sun Lianli, Liu Lu, PEI Yunlin, Nie Yanfeng, Wan Shuiting, Wu Yangqing. Ultrasonic assisted extraction of polysaccharide from baobab fruit and its antioxidant activity [J]. Food Research and Development, 2018, 39(08): 40-47. (in Chinese)
- [4] LIU Yang, LI Hongyang, Chen Guanming, ZHONG Xiangtao, LIU Guomin. Research progress of baobab [J]. Tropical Agricultural Sciences, 2018, 38(08): 50-55. (in Chinese)
- [5] Sun Lianli, Liu Lu, PEI Yunlin, Nie Yanfeng, Wan Shuiting, Wu Yangqing. Ultrasonic assisted extraction of polysaccharide from baobab fruit and its antioxidant activity [J]. Food Research and Development, 2018, 39(08): 40-47. (in Chinese)

SYNMR