



# THE NOVEL INNOVATION OF HERBALE FOMULATION ON DIABETES MELLITUS USING DRAGON AND MULBERRY FRUITS EXTRACT WITH COMBINATION OF FENUGEEK AND JAMUN SEEDS

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**Abstract:-** The idea of the program is to create a one-step strategy that is less time consuming and devastating in extracting the Bioactive compounds from pecan trees. In our study, we used fenugreek seed powder (*Trigonella foenum-graecum* L.) and jamun seed powder *Syzygium cumini* or *Syzygium jambolana* or *Eugenia jambolana* or *Eugenia cumini*. Fenugreek is used worldwide to treat diabetes because it is easily available. Most of the fenugreek seeds (50%) constitute dietary fiber consisting of both insoluble (30%) and soluble (20%) fractions, corresponding mainly to galactomannan. Phytochemical components contained in fenugreek seeds include steroids, alkaloids, saponins, polyphenols, flavonoids, lipids, carbohydrates, amino acids and hydrocarbons. Fenugreek (*Trigonella foenum-graecum* L.) is an ancient medicinal plant and has been commonly used as a food and conventional medicine. Fenugreek is known to have hypoglycemic and hypocholesterolemic effects the humans lose weight with nutritional needs including vitamins and minerals necessary for health and normal functioning of the body. Jamun (*Syzygium cumini*) is one of the individuals of the Myrtaceae family and may be a characteristic perennial plant of the Indian individuals of the Myrtaceae family and may be a characteristic perennial plant of the Indian subcontinent, Compounds present such as caffeine acid, isoquercetin, kaempferol and other flavonoids. These compounds have hypoglycemic activity. They are responsible for increasing glucose absorption of adipose and muscle tissue due to the activation of specific receptors, namely PPAR $\alpha$  "Peroxisome Proliferator-Activated Receptor  $\alpha$ " and PPAR $\gamma$  (Peroxisome Proliferator-Activated Receptor  $\gamma$  proliferative agent. The peel of the red dragon fruit is generally little used, has higher antioxidant properties than the flesh and contains many secondary metabolites used as medicine. That dragon fruit flesh (powder) is rich in phenolic compounds with high antioxidant capacity. It is also a rich source of bioactive phytochemicals that may provide beneficial health effects. They have many biotherapeutic effects against pathogenic microbes such as bacteria, fungi and viruses, as well as disorders. Such as diabetes, obesity, high blood fat and cancer. Dragon fruit extract also contains cardioprotective and hepatoprotective qualities, as well as prebiotic potential. Dragon fruit is one of the medicinal plants considered to have potential in the treatment of diabetes. In particular, Mulberry fruit (MB) have recently been found to have significant hypoglycemic activity of which more than 90% exists in reduced form. These problems are treated with a variety of ancient and modern treatments. The fruit, leaves, roots, bark and latex of the mulberry tree, *Morus alba* (L.), are used in several Ayurvedic therapies to treat various human diseases. This herb has

amazing results in reducing blood sugar and cholesterol levels, making it suitable for use in traditional Chinese herbal and folk medicine.

**Keyword:-** Dragon fruit, mulberry fruit, jamun seeds powder, fenugreek seeds powder.

## INTRODUCTION

Diabetes mellitus, a persistent metabolic disorder, may be a rapidly growing global problem with enormous social, health and financial consequences. It is estimated that in 2010, 285 million people worldwide (about 6.4% of the adult population) suffered from the disease. It is estimated that this number will increase to 430 million if there is no control or treatment. Aging population and obesity are two basic reasons for this increase. This chapter presents the types of diabetes and Ayurvedic treatments for both types of diabetes. There are two types of diabetes (TYPE 1 and TYPE 2): type 1 diabetes (insulin-dependent diabetes) and type 2 diabetes (non-insulin-dependent diabetes) Gestational diabetes first recognized During pregnancy. Diabetes due to other causes (genetic defects or medications). The idea of the program is to create a one-step strategy that is less time consuming and devastating in extracting the Bioactive compounds from pecan trees. In our study, we used fenugreek seed powder (*Trigonella foenum-graecum* L.) and jamun seed powder (*Syzygium cumini* or *Syzygium jambolana* or *Euge-Nia jambolana* or *Eugenia cumini*). Fenugreek is used worldwide to treat diabetes because it is easily available.

Fenugreek seeds powder (*Trigonella foenum-graecum* L.)

Most of the fenugreek seeds (50%) constitute dietary fiber consisting of both insoluble (30%) and soluble (20%) fractions, corresponding mainly to galactomannan. Phytochemical components contained in fenugreek seeds include steroids, alkaloids, saponins, polyphenols, flavonoids, lipids, carbohydrates, amino acids and hydrocarbons. Fenugreek (*Trigonella foenum-graecum* L.) is an ancient medicinal plant and has been commonly used as a food and conventional medicine. Fenugreek is known to have hypoglycemic and hypocholesterolemic effects. Introduction distinguishes fenugreek as an important restorative herb with versatile employment potential, which together become a source of raw materials for the pharmaceutical industry, especially steroid hormone biology (biological perspective) and clinical applications of fenugreek and its bioactive constituents, as well as articles highlighting its phytochemicals, biological activities (biological perspective) animals and clinical applications of fenugreek from literary works and articles, later market and database licenses. To date, more than 100 phytochemicals have been found in fenugreek seeds ri, mainly polysaccharides, saponins, alkaloids, phenolic acids and flavonoids. Fenugreek extract and its bioactive compounds seem to have excellent anti-diabetic and anti-flatulence effects. Subsequently, fenugreek has attracted a lot of interest and much thought investigated its potential health benefits.

- Blood sugar control: Fenugreek seeds have been shown to help reduce blood sugar levels.
- Blood sugar control: A survey shows that fenugreek seeds can help improve controlling blood sugar levels in people with diabetes.
- Confrontation Issues and Activities: Fenugreek seeds can have a positive impact on discharge and operations.
- Advances in lipid profiling: Diabetes is often associated with dyslipidemia, which is characterized by irregular lipid levels.
- Anti-inflammatory and antioxidant effects: Persistent irritation and oxidative stress play a role in the development and progression of diabetes and its complications.

## Classification:

Kingdom	Plantae
Division	Magnoliophyta
Courses	Magnoliopsida
Species	Foenum-graecum
Binomial title	Trigonella foenum graecum



Fig 1:-fenugreek seeds powder

Other common names: -Greek food, bird's foot, Boyotu Chinagriye, Fenegriek, Fenugreek, Foemen Graecum, Greek hayseed, Halva, Helba, Hu Lu Dad, KU Tou, Kelabat, Korotus.

Methi Shim, sickle fenugreek and sickle fenugreek. Fenugreek seeds have antioxidant potential in fenugreek seeds and juice. Fenugreek is native to the Mediterranean region. Today, India is the world's leading producer of fenugreek with a generation of 45,000 to 55,000 tons per year. Fenugreek has long been used as a kitchen cloth and as a traditional medicine because of its medicinal properties. Its useful properties also treat some side effects such as dermatitis, burns, gout, stroke, bloating, stomach pain. In China, Fenu-Greek seeds recorded in "Jia You Restorative Herbs" have been used to warm and regulate the yang of the kidneys, dispel colds, and soothe pain.

Significant pharmacological and clinical evidence has highlighted the restorative applications of fenugreek seeds such as anti-diabetic effects, hypoglycemic effects, anti-obesity effects, anti-cancer effects, anti-inflammation, antifungal effect, antibacterial effect.

Mechanism of action: - .

Ingredients include  $\beta$ -cell recharging and stimulation of forward discharge. Furthermore, diosgenin increased the translation levels of CCAAT/enhancer binding protein (C/EBP $\delta$ ) and peroxisome proliferator-activated protein- $\gamma$  (PPAR- $\gamma$ ) mRNA. Other components of fenugreek incorporated: 4-hydroxyisoleucine, an amino corrosive that increases acid output, reduces plasma triglycerides, and increases cholesterol levels. Galactomannan is a carbohydrate that makes up 45 to 60% of fenugreek seeds. It has been shown to block chemicals that hydrolyze carbohydrates and lipids in the digestive system, leading to reduced post-meal glucose levels. Although the main mechanism of action of the anti-diabetic effect of fenugreek is still not recognized, many reports suggest that the antioxidant effect plays an important role in protecting the liver. Another possible reason is that fenugreek reverses protein glycation caused by high blood sugar. Support for testing the atomic components of the plant's operations and dynamic components is needed. In many parts of the world, fenugreek is often used as a beverage. As part of current thinking, we endeavored to compare different fenugreek administration methods to clinically feasible measures (100 mg/kg) in diabetic rodents, initiated by streptozocin (STZ) .

**Jamun (Syzygies cumini or Syzygium jambolana or Euge-Nia jambolana or Eugenia cumini):-**

The humans lose weight with nutritional needs including vitamins and minerals necessary for health and normal functioning of the body. Jamun (Syzygiucumini) is one of the individuals of the Myrtaceae family and may be a characteristic perennial plant of the Indian subcontinent, but now every day these plants are especially popular throughout the Asian subcontinent, East Africa, South America and Madagascar characterized by sweet and pungent berries .

Arrange	Fabales
Family	Fabaceae
Class	Trigonella

The natural products, diluents, seeds and bark are all used in Ayurvedic pharmaceutical products. jamun seeds extract powder physicochemical properties and reviews introduction to the naturally occurring product

83.59, 17.56° Brix, 3.63 pH, 328, 50 mg, cyd-3-Glu/100 g anthocyanin, 219.21 mg, GAE/100 g added to mixture Phenolic substances, 91.33 mg QE/100 g added to favonoids and 91,33D44 have antioxidant effects. The most anthocyanin colors are delphinidin 3, 5-diglucoside, petunidin 3, 5-diglucoside and malvidin 3, 5-diglucoside measured 175.80, 156.50 and 83.12 mg/100 g, respectively. While most phenolic compounds are chlorogenic, gallic, caffeic, vanillic and catechin, various fruit jam products meet the standards of excellence and are organoleptically acceptable. fber added sugars, reducing sugars and non-reducing sugars of natural product Jamun were 83.59, 1.85, 0.48, 1.03, 2.58, 13.41, 9.56 respectively and 3.85. Jamun seed, known as Indian mulberry seed or *Syzygium cumini* seed, is traditionally used in Ayurvedic medicine for its medicinal effects, including its role in disease control diabetes. Jamun seeds Jamun seeds are rich in various bioactive compounds, such as polyphenols, flavonoids and tannins. Blood sugar regulation: Jamun seeds have been studied for their hypoglycemic effects, having may help reduce blood sugar levels. It contains compounds that may improve insulin action, promote cellular glucose absorption, and inhibit glucose absorption from the body. This may contribute better control blood sugar levels

- Insulin secretion: Jamun seeds may have the ability to stimulate insulin secretion from pancreatic beta cells. This can help improve and release, helping to regulate blood sugar levels.
- Antioxidant properties: Diabetes is associated with increased oxidative stress, which can lead to cell damage. Jamun seed contains antioxidants that help neutralize harmful free radicals, reduce oxidative stress and protect cells from damage.
- Improved lipid profile: People with diabetes often have abnormal lipid profiles, including high levels of total cholesterol, LDL cholesterol, and triglycerides. Jamun seeds have been reported to have lipid-lowering effects, promoting healthier lipid levels.
- Kidney protection: Diabetes can lead to kidney damage, known as diabetic nephropathy. Studies show that Jamun seeds may help protect the kidneys from oxidative stress and reduce markers of kidney damage, potentially contributing to kidney protection.2)(7 People eat less of the nutrients they need essential, including vitamins and minerals essential for health and well-being. Jamun (*Syzygium cumini*) is one of the individuals of the family Myrtaceae and may be a widespread and durable tree of the Indian subcontinent. India, but nowadays, these plants are especially popular throughout the Asian subcontinent, East Africa, South America. and Madagascar. Jamun natural products are produced once a year and can be accessed in June -July and Jamun natural products are characterized by sweet and pungent berries. Usually Jamun natural products are purified, seeds and bark are all used in Ayurvedic medicine.

#### Classification

Kingdom:	Plantae
Clade :	Trichophyte's
Clade:	Angiosperms
Clade :	Eudicots
Clade :	Rosids
Order:	Myrtales
Family:	Myrtaceae
Genus :	<i>Syzygium</i>
Species :	<i>S. cumini</i>
Binomial name :	<i>Syzygium cumini</i> 2)



fig 2:-Jamun seed powder

Metabolic disorders are serious health problems in today's world and the increasing incidence of metabolic disorders due to adaptation to unbalanced lifestyles has ultimately increased the societal health burden of Metabolic syndrome (MS). Diabetes is the most important biomarker of MS. It has been called "the third killer of humanity", affecting about 10% of indigenous people worldwide today and is one of the top 10 causes of death worldwide, killing approximately 1.6 million people each year due to oxidative stress and inflammation caused by high blood pressure. Oxidative stress and inflammation due to hyperglycemia are mainly involved in the onset and progression of type 2 diabetes. Extracts from the leaves, seeds and bark are very effective in the treatment of diabetes. Moderate hyperglycemia (prediabetes) is a metabolic disease in which blood sugar

levels slightly exceed normal levels but have not yet reached the threshold for diabetes and treatment of cardiovascular and digestive problems.

**MECHANISM OF ACTION:** Compounds present such as caffeine acid, isoquercetin, kaempferol and other flavonoids. These compounds have hypoglycemic activity. They are responsible for increasing glucose absorption of adipose and muscle tissue due to the activation of specific receptors, namely PPAR $\alpha$  "Peroxisome Proliferator-Activated Receptor  $\alpha$ " and PPAR $\gamma$  (Peroxisome Proliferator-Activated Receptor  $\gamma$ ) proliferative agent. They activate enzymes such as glutathione, glutathione-S-transferase and catalase. Glutathione peroxidase inhibits  $\alpha$ -amylase and subsequently  $\alpha$ -glucosidase, thereby reducing glucose levels.

#### DRAGON FRUIT:-

The peel of the red dragon fruit is generally little used, has higher antioxidant properties than the flesh and contains many secondary metabolites used as medicine. Dragon fruit, also known as pitaya, is a bright tropical fruit with green scales that can come in many different shapes and colors. Although the outside is usually pink, the inside can range from white to red, pink or purple. That dragon fruit flesh (powder) is rich in phenolic compounds with high antioxidant capacity. It is also a rich source of bioactive phytochemicals that may provide beneficial health effects.

Dragon fruit contains nutrients:

Calories	57calories
Protein	0.36g
Carbohydrates	15.2g and 4g
Fiber	3.1g
Total sugar	9.75g
Calcium	9g
Potassium	116mg
Choline	4.4g,5g and 1g

Chemical results demonstrate that red dragon fruit peel contains several secondary metabolites, such as terpenoids<sup>26</sup> and alkaloids<sup>26,27</sup>. In addition, it also contains tannins, steroids and saponins <sup>27,28</sup>, phenolhydroquinone, flavonoids and triterpenoids <sup>28</sup>. The fruit peel will have higher antioxidant activity than the fruit flesh.

Extracts from dragon fruit stems, flowers, peels and pulp have many biotherapeutic effects against pathogenic microbes such as bacteria, fungi and viruses, as well as disorders. such as diabetes, obesity, high blood fat and cancer. Dragon fruit extract also contains cardioprotective and hepatoprotective qualities, as well as prebiotic potential.

Drug name	Dragon fruit grows on the hylocereus cactus also termed as Honolulu queen with flowers
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Synonyms	Pitaya Pitahaya
Biological sources	
Family	Cataceae
Nutritional content	Dragon fruit contains small amount of some nutrients iyt is also a good source of iron,magnesium and fiber
Serving(1 trusted sources)	Calories 60%
Protein	1.2gm
Fat	0gm
Carbs	13gm
Fiber	3gm
Vitamin c	3%



Fig:-3 dragon fruit

- RDA Magnesium: 10% RDA Considering the high fiber and magnesium content and extremely low calorie content, dragon fruit can be considered a very nutritious fruit.

Chemical composition: - Is a source of many nutrients and minerals such as vitamin B1, vitamin B2, vitamin B3 and vitamin C, protein, fat, carbohydrates, crude fiber, flavonoids, thiamine, niacin, pyridoxine, cobalamin, glucose. , phenolics, betacyanins, polyphenol , carotene, phosphorus, iron and phytoalbumin. It is rich in phytoalbumin, prized for its antioxidant properties.

Blood sugar levels can be controlled with chemical drugs and herbal medicines that have effective effects on blood sugar levels. Dragon fruit is one of the medicinal plants considered to have potential in the treatment of diabetes. Sugar is a climbing cactus grown and traded commercially under the names *Hylocereus polyrhizus* (red skin, red flesh, red dragon fruit, red dragon fruit), *Hylocereus costaricensis* (red skin, purple red flesh, red fruit), dragon fruit), *Hylocereus undatus* (red skin, white flesh) , white-fleshed dragon fruit and *Selenicereus megalanthus* (white-fleshed yellow peel, yellow dragon fruit, yellow dragon fruit) Animal studies show that dragon fruit has been used to treat diabetes by regenerating pancreatic  $\beta$ .cells and attenuated fibroblast growth factor-21. Several randomized and non-randomized controlled trials have been conducted to evaluate the effectiveness of dragon fruit in patients with diabetes and type 2 diabetes. Red dragon fruit is one of the fruits that can used to lower blood sugar levels in 4,444 people with diabetes.

Red dragon fruit is rich in antioxidants that are useful in preventing the risk of diabetes in addition to the antioxidant flavonoid content found in dragon fruit. Plays an important role in reducing blood sugar levels in patients diabetes. Pharmacological treatment is treatment that is given orally or by injection. Although non-pharmacological therapy is a less effective herbal treatment than synthetic drugs, some plants have been studied research has antidiabetic properties, especially red dragon fruit, because this fruit is one of the fruits that can be consumed to reduce the risk of diabetes. Blood sugar levels in children and adults. people with diabetes - we found out. showed a decrease in blood sugar levels before and after consuming 200 grams of red dragon fruit in type II diabetic patients for 10 days. The use of red dragon fruit has the effect of reducing blood sugar levels. Dragon fruit is rich in flavonoid antioxidants up to  $0.02 \pm 7.21$  mg EC/100 grams.

The ability of flavonoids to inhibit the intestinal mucosa, especially quercetin, may reduce glucose absorption. This reduces the absorption of glucose and fructose from the intestines, leading to lower blood sugar levels. Red dragon fruit also contains a lot of fiber, at 0.7 - 0.9 grams/100 grams of fruit. The fiber in this red dragon fruit is water-soluble fiber, which can be used as a blood sugar-lowering therapy. The role of soluble fiber is to improve insulin sensitivity and reduce insulin requirements by increasing intestinal transit time, delaying gastric emptying, and slowing glucose absorption.

This fruit has a slightly sweet, delicious taste, rich shapes and colors, not to mention its characteristic flowers. It has antioxidant properties and dragon fruit has a vibrant color but is also packed with nutrients. If we consume it daily along with other nutritious fruits and vegetables, it can improve health. It contains chemical components such as antioxidants such as betalains, polymorphic compounds and carotenoids. It contains black seeds which contain important fiber for health and are also rich in omega3 and omega 9, which have health

benefits and nutritional value to improve health. The fruit contains metformin which plays an important role in blood sugar reduction and homeostasis.

#### MULBERRY FRUIT :-

The fruit, leaves, branches, and root bark of the mulberry tree (*Morus alba* L.) have long been used to treat diabetes in traditional Korean and Chinese medicine. Recent studies have identified the anti-hyperglycemic mechanism and its main active ingredients in silkworm culture products. In particular, Mulberry fruit (MB) have recently been found to have significant hypoglycemic activity.<sup>16</sup> (of which more than 90% exists in reduced form. These problems are treated with a variety of ancient and modern treatments. The fruit, leaves, roots, bark and latex of the mulberry tree, *Morus alba*(L.), are used in several Ayurvedic therapies to treat various human diseases. Mulberry (*Morus alba*) is an extremely beneficial plant because it contains many biologically active substances, including highly biologically active substances such as flavonoids, phenolic compounds and fiber. Raspberries are rich in iron, riboflavin, vitamin C, vitamin K, potassium, phosphorus and calcium, all of which are essential elements for our body. They are also rich in fiber and organic substances, such as the phytonutrients zeaxanthin, anthocyanin, lutein and resveratrol, as well as other polyphenolic compounds such as resveratrol. This herb has amazing results in reducing blood sugar and cholesterol levels, making it suitable for use in traditional Chinese herbal and folk medicine.

Mulberry Ingredients: Vitamin: Mulberry, rich in vitamins B and C, can be used by systems to promote healthy fat and starch oxidation as well as metabolic transformation to function normal or accelerated. Likewise, mulberry leaves contain rutin, which helps create dynamic hair-like structures., GABA, responsible for reducing heart rate, and DNJ, responsible for reducing glucose.



Fig 4:- Mulberry fruit

#### MECHANISM OF MULBERRY FRUIT:-

Pharmacological investigation shows that morusin, kuwanon C and morusyunnansin L are the most active compounds of MLF which regulate resistance and blood sugar levels by PI3K-Akt signaling pathway, lipid pathway and atherosclerosis and the AGE-RAGE signaling pathway.

Furthermore, 1- deoxynojirimycin (DNJ), fagomin (FA) and N-methyl-1-deoxynojirimycin are essential dynamic links of RMA and target the system carbohydrate digestion and direct movement of alpha-glucosidase to produce powerful anti-diabetic effects. Atom docking revealed that morusin, kuwanon C and morusyunnansin L are the core bioactive compounds of MLF. They have high affinity for the main targets adenosine receptor A1 (ADORA1), AKT serine/threonine kinase 1 (AKT1), peroxisome proliferator-activated receptor gamma (PPAR $\gamma$ ) and glycogen synthase kinase 3 beta (GSK3 $\beta$ ), plays an important role in MLF-mediated hypoglycemic effects.

The ideal growing temperature range is 24° to 29°C and stickiness is 65% to 80%, but mulberries can grow in tropical as well as undisturbed regions. White mulberry (*Morus alba*) and black mulberry (*Morus indica*) are two of the most common *Morus* species in the world. White mulberry is known to be the main food source of silkworms, its color can vary from white to a distinctive pale pink. It is mainly grown in China, where it is used as an ingredient in Chinese pharmaceutical products. Dark mulberry and red mulberry (*Morus rubra*) are molecularly distinct from white mulberry, they are individual black-purple and red-purple natural products, and are actually found in this region. northern India, Pakistan and Iran. Raspberries are basically made from water. , followed by proteins, sugars, lipids, minerals and vitamins at the chemical level.

#### MATERIALS AND METHODS:-

The preparation of antidiabetic herbal syrup is used using fenugreek seed powder extract and jamun seed powder extract. Fenugreek is widely used as a more effective herbal medicine in the treatment of diabetes. The combination of jamun seed powder extract and fenugreek seed powder extract provides excellent effects for diabetes, and dragon fruit extract is also used as a coloring agent and sweetener. Dragon fruit has more antidiabetic activity than its current antioxidant content and they also contain the insulin-resistant presence of many nutrients and minerals such as vitamin B1, vitamin B2, vitamin B3 and vitamin C, proteins, fats, carbohydrates, crude fiber, flavonoids, thiamine, niacin, pyridoxine, cobalamin, glucose, phenolic compound, betacyanin, polyphenols, carotene, phosphorus, iron and phytoalbumin. It is rich in phytoalbumin, prized for its antioxidant properties and also use mulberry fruit as a coloring and sweetener.

Method of preparation: -

The bought fenugreek seeds powder and jamun seed powder from at Herbal Medical, measured the 15g, of fenugreek seeds powder and jamun seed powder



and then added 75ml of water and 75ml of ethanol then mix it gently for 10 to 15 minutes and then it's filtered by using filter paper.



This filtered solution keeps stored in cool and dry place. And avoid the other microbial contamination.



Fig 5:-Fenugreek seeds powder and jamun seed powder extract

- Preparation of dragon fruit extract:-

took dragon fruit from the college botanical garden, washed it, peeled it, dried it thoroughly in the sun, cut it into thin pieces,



then pureed it to make 1 gm took the measurements and added 10 ml of distillate water and boil thoroughly for 5 minutes,





then cool completely.



Filter carefully with a sieve and store the extract in a clean, uncontaminated small beaker and put in freezer.



Fig 6:- Dragon fruit extract

- Preparation of mulberry fruit extract:-

give fresh mulberry fruit, from college botanical garden



and then wash it thoroughly with distilled water and



grind it directly and filter it and take it well and keep it in a cool and dry place.



Fig 7:- Mulberry fruit extract

Formulation of polyherbal syrup:-

Measure the 30ml of fenugreek seeds powder and jamun seed powder extract with the help of measuring cylinder



Add a 2ml dragon fruit extract and 2ml mulberry fruit extract

Then it add a 5ml of permit oil as a flavoring agent



And lastly add pharmaceutical preservatives Methley paraben .it is commonly used preservatives in preparation of herbal syrup.



Store it cool and dry place

Formulation formula for polyherbal syrup :- table 1

SR.NO	Ingredients	Quantity
1	Fenugreek seeds powder	15gm
2	Jamun seed powder	15gm
3	Dragon fruit extract	2ml
4	Mulberry fruit extract	2ml
5	Peppermint oil	5ml
6	Preservatives:- Methel paraben	0.01gm

Evaluation parameters test:-

Color	Brawn colour
Odor	Minty fresh
Test	Astringent and slightly better
pH	4.0 to 5.0
Viscosity	2000 to 3000cP
Density	1.2g/ml

Conclusion:-The distill water extraction of the red dragon fruit peel may decline blood Glucose levels in rats with diabetes mellitus, and the anti-diabetic Activity. The purpose of this review is to highlight the importance and applicability of Morus species in various fields, and it is clear from the discussion that mulberry is a diverse medicinal plant with vitality. Morus species and their bioactive phytochemicals have been shown to possess a variety of biological activities, including antioxidant, antidiabetic, hypoglycemic, antiobesity, hypoglycemic properties. Pressure and anti-atherosclerosis, among many other activities. Morus extract and ingredients especially flavonoids such as chlorogenic acid, quercetin, rutin and isoquercitrin, eliminate free radicals and has antioxidant properties. DNJ and fagomine, two alkaloids found in M. alba, have been shown

to have anti-inflammatory properties . Indian black curry jamun seed and fenugreek seed extract, mulberry fruit dragon fruit extract . These four plants have strong antidiabetic effects. Prepared Syrup was subjected to various evaluation parameters and had values within the standard limits. 4,444 herbs are used to manage type 1 and type II diabetes and their complications. For this reason, therapies developed according to the principles of Western (allopathic) medicine often have limited effectiveness, carry the risk of side effects, and are often too expensive, especially for developing countries. Furthermore, the physicochemical properties of prepared herbal syrup such as color, odor, taste, pH, viscosity and density are all in accordance with the standards used in traditional medicine to diabetes treatment. The hypoglycemic and hypoglycemic actions of Jamun may be due to scavenging of free radicals, as diabetes is caused by excessive oxidative stress, increased glutathione peroxidase catalase activity, glutathione- s-transferase and increased glutathione synthesis along with decreased lipid peroxidation. Jamun may have activated the PPAR $\gamma$  and PPAR $\alpha$  genes suppressing the transcription of NF- $\kappa$ B, COX, iNOS, TNF- $\alpha$  and other inflammatory cytokines, followed by upregulation of Nrf2.

Summary:- In our study, we used fenugreek seed powder (*Trigonella foenum-graecum* L.) and jamun seed powder *Syzygium cumini* or *Syzygium jambolana* or *Euge-Nia jambolana* or *Eugenia cumini*). Fenugreek is used worldwide to treat diabetes because it is easily available. 1)Most of the fenugreek seeds (50%) constitute dietary fiber consisting of both insoluble (30%) and soluble (20%) fractions, corresponding mainly to galactomannan. Phytochemical components contained in fenugreek seeds include steroids, alkaloids, saponins, polyphenols, flavonoids, lipids, carbohydrates, amino acids and hydrocarbons. Fenugreek (*Trigonella foenum-graecum* L. is an ancient medicinal plant and has been commonly used as a food and conventional medicine. Fenugreek is known to have hypoglycemic and hypocholesterolemic effects .the humans lose weight with nutritional needs including vitamins and minerals necessary for health and normal functioning of the body. Jamun (*Syzygium cumini*) is one of the individuals of the Myrtaceae family and may be a characteristic perennial plant of the Indian individuals of the Myrtaceae family and may be a characteristic perennial plant of the Indian subcontinent, Compounds present such as caffeine acid, isoquercetin, kaempferol and other flavonoids. These compounds have hypoglycemic activity. They are responsible for increasing glucose absorption of adipose and muscle tissue due to the activation of specific receptors, namely PPAR $\alpha$  “Peroxisome Proliferator-Activated Receptor  $\alpha$ ” and PPAR $\gamma$  (Peroxisome Proliferator-Activated Receptor  $\gamma$ ) proliferative agent. The peel of the red dragon fruit is generally little used, has higher antioxidant properties than the flesh and contains many secondary metabolites used as medicine. That dragon fruit flesh (powder) is rich in phenolic compounds with high antioxidant capacity. It is also a rich source of bioactive phytochemicals that may provide beneficial health effects. They have many biotherapeutic effects against pathogenic microbes such as bacteria, fungi and viruses, as well as disorders. Such as diabetes , obesity, high blood fat and cancer. Dragon fruit extract also contains cardioprotective and hepatoprotective qualities, as well as prebiotic potential. Dragon fruit is one of the medicinal plants considered to have potential in the treatment of diabetes. In particular, Mulberry fruit (MB) have recently been found to have significant hypoglycemic activity of which more than 90% exists in reduced form. These problems are treated with a variety of ancient and modern treatments. The fruit, leaves, roots, bark and latex of the mulberry tree, *Morus alba*(L.), are used in several Ayurvedic therapies to treat various human diseases. This herb has amazing results in reducing blood sugar and cholesterol levels, making it suitable for use in traditional Chinese herbal and folk medicine.

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