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Review Article On "Formulation and Evaluation of Herbal Powder in Diabetes Patient"

Shelar Jyotsana. P[1], Dalvi Apeksha M[2], Pingat Pooja S[3]
Student of Samarth Institute of Pharmacy Belhe Maharashtra, India[1,2,3]

Abstract: *Many drugs are commercially available for use in the management of diabetes fenugreek seed is one of the medicinal plants which are important in the diabetes mellitus herbal powder used in diabetic patient is do not have any side effect in herbal powder main ingredients are jamun seed ,fenugreek seed , leman peel, curry leaves , Indian bael leaf the type .I diabetes is quite common in the children and young population type 2 diabetes is 90 % of world wide populationand pancreas does not secret the proper insulin in the body. Ayurveda also used Jamun seed, lemon peel, Indian bael leaf, curry leaves, Fenugreek seed is a common treatment of reducing a blood glucose level and maintain a sugar..*

Keywords: Syzygium, cumini, curry, leaves, citrus lemon, serum lipids argle marmelos, blood, glucose, parameters

I. INTRODUCTION

Diabetes is a chronic disease that occurs the pancreas does not make enough insulin or when the body does not properly utilize the insulin that is produce insulin maintain blood glucose level in the body Ayurveda is also used in jamun seed, curry leaves, lemon peel ,beal leaf ,fenugreeek seed is used in common treatment in type 2 diabetic patient jamun seed is also used to treat diabetic allergies etc. these powder shows decrease blood glucose level in diabetic patient. Effectiveness of curry leaves jamun seed, lemon peel, beal leaf, fenugreek seed powder among type 2 diabetic patient.

Importance:
An herbal powder used in diabetic patient to used to reducing blood glucoselevel.
Helps to regulate blood sugar level.
Digestive system
A powerful antioxidant
Maintains lowers blood pressure
Control diabeties
Help regulate blood sugar levels, lower insulin resistance and improveoverall glucose metabolies

Ingredients**:**
Jamun seed:

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Synonym: Jambul" and "Kaala Jamun
Family: Myrtaceae
Uses:
May Help Manage Diabetes. Jamuns are best known for their ability toregulate blood sugar level
Helps Regulate Blood Pressure
May Boost Immunity.
Aids Weight Loss.
Fenugreek seed:

Synonym: Greek clover
Family: Fabaceae
Uses :
Lowering blood sugar levels.
Boosting testosterone.
Increasing milk production in people who are breast feeding

Lemon peel

Synonym: Citrus fruit, Citrus lemon ·
Family: Rutaceae
Uses:
Improves Bone Health.
Reduces Cholesterol.
Prevents Heart-Conditions.
Promotes Weight Loss.

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Indian bael leaf

Synonym: Bel.
Family: Rutaceae
Uses:
Constipation.
Diabetes
Reduces cholesterol.

Curry leaves:

Synonym: Murraya koenigii.
Family: Rutaceae.
Uses:
Powerful antioxidant.
Reduces risk of heart diseases.
Helps in the management of diabetes

Method of preparation:
Step 1: All the required herbal powders for the diabetic patients preparationwere accurately weighed individually by using digital balance.
Step 2: The herbal drugs such as Fenugreek seed, curry leaves, jamun seed, lemon peel, bael leaf were transferred to mortar and pestle and triturated.

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Step 3: Previously prepared mixture of herbal powders was transferred to the mixture of fine powders and triturated to obtain uniform drug powder of diabetic patients.

Step 5: The powders were passed through sieve no #44.

Step 6: The prepared diabetic patients powder was packed into a selfsealable polyethylene bag labelled and used for further studies.

Table 1: Ingredients for Herbal powder in diabetic patients:

Sr. No	Ingredient	Quantity
1	Jamun seed	100gm
2	Fenugreek seed	50gm
3	curry leaves	20gm
4	lemon peel	25gm
5	bael leaf	5gm

Procedure:

1) Collect the ingredient jamun seed ,fenugreek seed ,curry leaves, bael leaves, lemon peel powder.
2) Clean and wash the collected ingredient.
3) Make a powder out of those dried seed .
4) Griend it well and preserve in container.
5) Take a spoonful of powder twice a warm water

II. METHOD OF EVALUATION

MORPHOLOGICAL EVALUATION:

It refers to the evaluation of powder by its color, odor, appearance,touch, etc.

Table 2: Morphological evaluation.

Sr. No	Parameter	Observation
1	Color	Yellowish Brown
2	Odor	Bitter
3	Appearance	Free Flowing Powder
4	Texture	Fine
5	Smoothness	Smooth

III. PHYSICOCHEMICAL EVALUATION:

Physicochemical parameters were determined, to the determination of moisturecontent, pH and Ash values.

Determination of LOD(loss of drying):

Moisture content was determined by loss on drying (LOD). Weigh accurately 3gms of the powder drug and take in a weighed petri dish and placed in hot airoven at 100-108ºC. It was weighed until constant weight was obtained.

Determination of pH:

It is the measurement of acidity or alkalinity of the product measured on a scaleof 0-14. pH.

Determination of Ash value :

Weigh accurately about 3 gm of the powdered drug in silica crucible. Incinerate the powdered drug by increasing the heat gradually until the sample was free from carbon and cool it keep it in a desiccators. Weigh
the ash and calculate the percentage of total ash in contrast to the air driedsample

Table 3. Physicochemical evaluation.

Sr. No	Parameter	Observation
1	LOD	3.35%
2	PH	3.38
3	Ash Value	2.45%

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IV. RHEOLOGICAL EVALUATION

In that determine the Bulk Density, Tap Density, Angle of Repose ,Hausner'sRatio, Carr's Index.

Bulk Density:

Bulk Density is the ratio between the given mass of a powder and its bulk volume. Required amount of the powder is dried and filled in a 50 ml measuringcylinder up to 50 ml mark. Then the cylinder is dropped onto a hard wood surface from a height of 1 inch at 2 second intervals.

The volume of the powder is measured. Then the powder is weighed.This is repeated to get average values.

Bulk Density = Mass / Bulk Volume

Tapped Density:

Tapped density is an increased bulk density attained after mechanically tappinga container containing the powder sample. After observing the initial powder volume or mass, the measuring cylinder or vessel is mechanically tapped for 1 min and volume or mass readings are taken until little further volume or mass change was observed. It was expressed in grams per milliliter.

Tapped Density = Mass / Tapped Volume

Angle of Repose:

It is defined as the maximum angle possible in between the surface of pile ofpowder to the horizontal flow. Required quality of dried powder is taken in afunnel placed at a height of 2 cm from a horizontal base. The powder was allowed to flow to form a heap over the paper on the horizontal plane.

Height(h) and radius(r) of the heap is noted and recorded .For the above method, the angle of repose (θ) can be calculated by using the formula. θ = tan-1(h/r)

Hausner's Ratio:

Hausner's Ratio = Tapped Density / Bulk Density

HiCarr's Index:

Carr's Index = Tapped Density – Bulk Density X 100Tapped Density

Table 4: Rheological Evaluation

Sr. No	Parameter	Observation
1	Bulk Density	0.4712
2	Tapped Density	0.625
3	Angle of Repose	30.837
4	Hausner's Ratio	1.326
5	Carr's Index	24.608

Phytochemical Evaluations :

The aqueous extract of the herbal powder was evaluated for the presence ofdifferent phytoconstituents as per the standard procedures.

Table 5: Phytochemical Evaluation:

Sr. No	Phytoconstituents	Observation
1	Carbohydrate	Present(+)
2	Alkaloid	Present(+)
3	Glycoside	Absence(-)
4	Tannins	Present(+)
5	Amino Acid	Absence(-)

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Stability Studies:

Stability testing of prepared formulation was conducted by storing at differenttemperature conditions for the period of one month. The powder offormulation stored at different temperature conditions like, room temperature and 40°c and were evaluated for physical parameters like color, odor, pH, consistency and feel.

Table 7: Stability Evaluation:

Sr. No	Parameter	At Room Temp	At 40 °c
1	Color	Yellowish	Yellowish Brown
2	Odor	Bitter	Bitter
3	Texture	Fine	Fine
4	Smoothness	Smooth	Smooth
5	pH	3.38	3.38

IV. RESULT

No effecct of hematology or heart and lung related organs acuret dose reduce the glucose and urea bodyweight and blood glucose level were significantly reduced diabeties indused tissue injury in the pancreatic islets and kidney wasreduced. Blood glucose level and body mass were reduced.

V. CONCLUSION

Results of the present study signify the hypoglycaemic effects of seed powder. Thus, it may emerge as potential drug for effective control of blood sugar levels in patients of type 2 DM and play a role in reducing morbidity and mortality associated with diabetes. Being cost-effective, it may help in improving biochemical parameters of diabetic patients in rural population

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