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Formulation and Evaluation of Herbal Tablet Prepared from Pumpkin Seeds for Anthelmintic Activity

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Abstract: *Helminthic infections remain a major public health problem, particularly in developing countries, leading to malnutrition, anemia, and reduced immunity. Synthetic anthelmintic drugs are commonly used for treatment; however, prolonged use may cause adverse effects and development of drug resistance. Therefore, there is increasing interest in herbal medicines as safer and cost-effective alternatives. Pumpkin seeds (Cucurbita pepo) have been traditionally used for their medicinal and nutritional properties and are reported to possess significant anthelmintic activity due to the presence of active constituents such as cucurbitin, alkaloids, flavonoids, tannins, and fatty acids.The present review focuses on the formulation and evaluation of herbal tablets prepared from pumpkin seeds for anthelmintic activity. Various extraction methods, phytochemical constituents, formulation techniques, and evaluation parameters of herbal tablets are discussed. The review also highlights preclinical studies demonstrating paralysis and death of worms using pumpkin seed extracts against different helminth species. Evaluation parameters including hardness, friability, weight variation, disintegration time, and in vitro anthelmintic activity are summarized. Herbal tablets prepared from pumpkin seeds may offer improved patient compliance, better stability, accurate dosing, and reduced side effects compared to conventional dosage forms. This review concludes that pumpkin seed-based herbal tablets possess promising potential as natural anthelmintic agents and may serve as an effective alternative to synthetic drugs. Further clinical and pharmacological studies are required to establish their safety, efficacy, and therapeutic applications in the treatment of helminthic infections.*

Keywords: Anti-Helminthic, herbal tablet, Pumpkin Seeds, Herbal Formulation, Cucurbitin Phytochemical Evaluation.

I. INTRODUCTION

Anthelmintic is the term used to describe a drug used to treat infections of animals with parasitic worms. This includes flat worms, e.g., flukes and tapeworms as well as round worms (nematodes). The parasites are of huge importance for human tropical medicine and for veterinary medicine. Soil-transmitted helminthes, such as hookworms and roundworms, have been recognized as significant public health challenges in many underdeveloped and developing nations.

Helminthic infections are among the most common parasitic infections affecting millions of people worldwide, especially in developing and tropical countries. These infections are mainly caused by parasitic worms such as roundworms, tapeworms, and hookworms, which inhabit the human gastrointestinal tract and lead to various health

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problems including malnutrition, anemia, abdominal pain, weakness, and impaired growth. Although several synthetic anthelmintic drugs are available for the treatment of helminthiasis, their prolonged use may produce adverse effects and drug resistance. Therefore, there is an increasing demand for safe, effective, and natural herbal remedies.

Medicinal plants have been widely used in traditional systems of medicine for the treatment of parasitic infections since ancient times. Herbal formulations are considered safer, economical, and associated with fewer side effects compared to synthetic drugs. Among various medicinal plants, pumpkin seeds obtained from Cucurbita pepo have attracted considerable attention because of their nutritional and therapeutic properties. Pumpkin seeds are rich in proteins, fatty acids, minerals, flavonoids, phenolic compounds, and an important amino acid known as cucurbitin, which is mainly responsible for their anthelmintic activity.

Pumpkin seeds have traditionally been used as a natural remedy against intestinal worms in many countries. Studies have reported that pumpkin seed extracts can cause paralysis and death of helminths by affecting their neuromuscular activity. In addition to anthelmintic properties, pumpkin seeds also exhibit antioxidant, anti-inflammatory, antimicrobial, and hepatoprotective activities, making them valuable for pharmaceutical applications.

The formulation of herbal tablets from pumpkin seeds offers several advantages such as accurate dosing, ease of administration, improved patient compliance, better stability, and convenient transportation. Herbal tablets can also mask unpleasant taste and provide prolonged shelf life compared to other dosage forms. Proper formulation and evaluation of herbal tablets are essential to ensure quality, safety, and therapeutic effectiveness.

The present study focuses on the formulation and evaluation of herbal tablets prepared from pumpkin seeds for anthelmintic activity. The study includes preparation of pumpkin seed powder or extract, formulation of tablets using suitable excipients, and evaluation of pre-compression and post-compression parameters such as hardness, friability, weight variation, disintegration time, and thickness. The anthelmintic activity of the prepared formulation is evaluated using suitable experimental models to determine its effectiveness against helminths.

Thus, pumpkin seed-based herbal tablets may serve as a promising natural alternative to conventional anthelmintic drugs and contribute to the development of safer herbal therapeutic agents.

ADVANTAGES OF POLYHERBAL TABLETS:

1. Natural Anthelmintic Activity : Pumpkin seed extract helps in removing intestinal worms naturally.
2. Reduced Side Effects: Herbal tablets are safer and cause fewer side effects.
3. Enhanced Therapeutic Effect: Natural compounds improve treatment effectiveness.
4. Good Bioavailability: Proper formulation improves absorption of herbal constituents.
5. Nutritional benefits along with medicinal action
6. Low toxicity and suitable for long-term use
7. Easy to administer and improves patient compliance
8. Accurate dosing in tablet form

DISADVANTAGE:

1. Slow onset of action compared to synthetic drugs
2. Variable activity due to natural source (batch variation)
3. Limited clinical studies on humans
4. Requires proper standardization and quality control
5. May need higher dose for effective action
6. Taste/odor issues before formulation into tablet

APPLICATION:

1. Treatment of Intestinal Worms: Herbal anthelmintic tablets containing pumpkin seed extract help in paralysing and removing intestinal worms effectively.
2. Improves Digestive Health: These tablets help in reducing stomach discomfort, bloating, and digestive problems caused by worm infections.

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3. Natural and Safe Therapy: Herbal tablets provide a safer treatment option with fewer side effects compared to synthetic anthelmintic drugs.
4. Immune System Support: Herbal constituents help in improving immunity and maintaining overall health.
5. Nutritional Benefits: Pumpkin seeds contain proteins, minerals, and vitamins that support body strength during infection recovery.

MATERIAL AND METHOD:

 PLANT PROFILE :
 General information :PUMPKIN SEEDS
 synonyms : Pepita , Kaddu Beej
 Botanical name : Cucurbita Pepo
 Cucurbita Pepo :

Pumpkin seed is a medicinal plant widely used for its nutritional and therapeutic properties. It contains bioactive compounds such as cucurbitin, flavonoids, alkaloids, and fatty acids which show effective anthelmintic activity against intestinal worms. Pumpkin seeds are also rich in proteins, vitamins, and minerals

 Geographical Distribution:

Native to: North America and Central America
Found in: Tropical and subtropical regions
Cultivated in: India, China, USA, and many Asian countries
Chemical constituents:
Alkaloids – Cucurbitin
Flavonoids – Quercetin, Kaempferol Fatty Acids – Oleic acid, Linoleic acid Terpenoids – Sterols and carotenoids
 Proteins and Minerals – Zinc, Magnesium, Iron

FIG NO.1. PUMPKIN SEEDS

 TAXONOMICAL PROFILE

Kingdom – Plantae
Division – Magnoliophyta Class – Magnoliopsida Order – Cucurbitales
Family – Cucurbitaceae Genus – Cucurbita Species-– Cucurbita pepo
 PLANT DESCRIPTION
Herbaceous Creeping Plant:
1. Stem: Soft, hairy, trailing, and cylindrical.
2. Leaves: Large, broad, heart-shaped, and green in color.
3. Flowers: Yellow or orange, unisexual, and large.

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4. Fruits: Round or oval pumpkin with hard outer rind
5. Seeds: Flat, oval, greenish-white seeds rich in oil and proteins

 Pharmacological properties :

1. Anthelmintic Activity: Helps in paralysing and removing intestinal worms.
2. Antioxidant Activity: Reduces oxidative stress due to presence of flavonoids and phenolic compounds.
3. Anti-inflammatory Activity: Helps in reducing inflammation and irritation.
4. Antimicrobial Activity: Shows activity against certain bacteria and fungi.
5. Immunomodulatory Activity: Supports and improves immune function.
6. Nutritional Property: Rich in proteins, vitamins, minerals, and healthy fatty acids.
7. Gastroprotective Activity: Helps in maintaining digestive health

Materials:

Materials to be used in herbal tablets formulations are:

 Pumpkin seeds (Cucurbita Pepo) Powder Extract

Solvents used for extraction :

 Ethanol,ditilled water

Excipients used in formulation:

 Lactose,starch,talc,Magnesium stearate PVP 9POLYVINYL PYRROLIDINE K-30)

Collection and Procurement of plant material:

1. Theseeds of Cucurbitapepo(Pumpkin seeds)werecollected from thelocalmarket in kopargoan ,Maharashtra, India.
2. The plant material was cleaned, dried, and storedproperly for further extraction and formulation studies.
3. Identification and Authentication: The collected plant material was identified and authenticated by a qualified taxonomist from the Department of Pharmacognosy.
4. A specimen sample was deposited in the institutional herbarium for future reference.

FIG NO.2 HERBARIUM SPECIMEN

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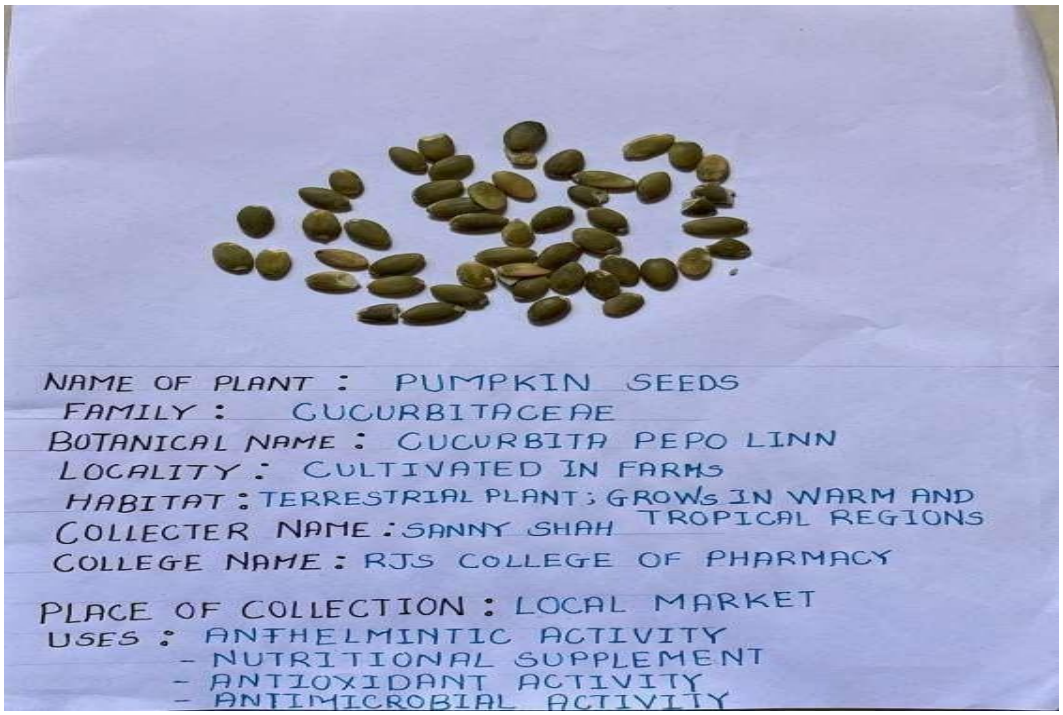

Fig NO.3.AUTHENTICATION

METHODOLOGY :

Extraction process:

1. Maceration: Maceration is a solid - liquid extraction technique where plant materials are soaked in a solvent to release their bioactive compounds.Maceration of Pumpkin Seeds (Cucurbita Pepo)

Material Required Pumpkin Seeds Powder Solvent: Ethanol

Container: Conical flask, filter paper

MACERATION PROCEDURE:

1. Preparation:

1) Clean and dry pumpkin seeds.

2) Grind to coarse powder (40–60 mesh).

3) Weigh 50 g powdered seeds.

2. Maceration:

1) Transfer defatted powder into a clean flask.

2) Add 500 mL of 70% ethanol (solvent ratio 1:10).

3) Keep for 24–48 hours with intermittent shaking.

4) Filter and collect the extract.

5) Repeat maceration one more time using fresh solvent for better yield.

6) Combine both filtrates.

3. Concentration:

1) Take filtered extract in a evaporating dish and place it on water bath.

2) keep gentle heating (50–60°C)

3) continue evaporation until : ethanol evaporates thick mass (concentration extract) remains

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FIG.4- MACERATION OF PUMPKIN SEEDS PHYTOCHEMICAL TEST FOR PUMPKIN SEEDS :

1. ALKALOID TEST : (Dragendorff's Reagent)

Take the 2 ml of sample in a clean test tube, after then add few drop of Dragendorff's reagent . Then observe the result, if then Orange or Reddish-brown precipitate indicates presence of alkaloid

FIG NO.5TEST FOR ALKALOID

2. TANNINS TEST :

Ferric Chloride Test:

Take 2 mL of sample in a clean test tube , after then add 2-3 drop of ferric chloride solution (5%). Then observe the result, if then Dark blue or Green colour

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FIG NO.6 TEST FOR TANNIN

3. SAPONINS TEST :

Form Test

Take 1mL of sample in a clean test tube , after then add 5mL distilled water and shake vigorously for 1-2 minutes then allow to stand for few minutes. If then observed persistent foam layer

FIG NO.7.TEST FOR SAPONINS

4. TRITERPENOIDS :

Liebermann test

Take 2 mL ofsample in aclean test tube. After thenadd 2 mL chloroformandadd1-2 mL acetic anhydride . Ifthen carefully addfew dropofconcentrated sulfuric acid along theside ofthetest tube. Observed blue-green colour.

FIG.8 -TEST FOR TRITERPENOIDS EVALUATION PARAMETERS OF PUMPKIN SEEDS :

Preformation study:

1. Bulk Density :-

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Bulk drug powder is sieved through 40 mesh screen. 20 gm of powder is taken and poured into graduated cylinder via large funnel without compacting and measured the volume of powder. The volume is known as bulk volume. Bulk density calculate using the formula:

Bulk density - Mass of Powder(M)/Untapped Volume(V) Bulk density = 20gm /23 mL

= 0.86 g/mL

Therefore,the bulk density of Pumpkin seeds powder is approximately 0.86 g/mL.

2. Tapped Density:

Bulk drug powder is sieved through 40 mesh screen. 20 gm of powder is taken and poured into graduated cylinder via large funnel. The cylinder is tapped 50 times & meusured the volurne. The volume reached a minimum is called Tapped Volume.

Tapped density was calculate using the formula-

Tapped density = Mass of Powder(M)/ Tapped Volume(V) Tapped Density= 20 gm/21 mL

=0.95g/mL.

Therefore, the tapped density of Pumpkin seeds powder is approximately 0.95 g/ml.

3. Carr's Index:

The Compressibility index (Carr's index) is a measure of the propensity of a powder to be compressed. It is determined from the bulk and tapped densities.

Carr's index=Tapped density -Bulk density/Tapped density *100. Carr's Index = 0.95 -

0.86 / 0.95*100

= 9.47 %

4. Hausner's Ratio:

The Hausner ratio is a number that is correlated to the flowability of a powder or granular material. Hausner ratio gives an indication of the resistance of the powder sample to settling because of powder particle interactions

Hausner ratio=tapped density /bulk density

=0.96/0.86

= 1.10

5. Angle of repose:

There will be different methods is used for calculate the angle of repose, Revolving cylinder method, fixed funnel method, Tilting box method. Here fixed fummel method is used. A funnel was positioned above graph paper that was laid out horizontally and secured with its tip at a specific height. The mixture was gently poured down the funnel until the conical pile's peak touched the funnel's tip. The conical pile's hase's radius calculated. The following formala was used

Determine the angle of repose

Angle of Repose= Height of the cone/Radius of cone Angle of repose= 4.5/8.7

tanQ=(h/r)×(180/π)

tanQ= (4.5/8.7)×(180/π)

=27.3

TABLE NO.1: SCALE OF FLOW ABILITY

Flow character	Hausner's ratio	Carr's index	Angle of repose
Excellent	1.00-1.11	< 10	25-30
Good	1.12-1.18	10-15	31-35
Fair	1.19-1.25	16-20	36-40
Passable	1.26-1.34	21-25	41-45
Poor	1.35-1.45	26-31	46-55
Very poor	1.46-1.59	32-37	56-65

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Very, very poor	>1.60	> 38	> 66

TABLE NO.2 :FORMULATION OF HERBAL TABLET FOR PUMPKIN SEED (250MG)

Sr no.	Ingredients	Qty in mg 1 tablet	Category/Role
1	Pumpkin seeds extract	100mg	API
2	Lactose	70mg	Diluent
3	Microcrystalline Cellulose	40mg	Provide Tablet Strength
4	Starch	20mg	Disintegrant
5	PVP (Polyvinyl pyrrolidone K-30)	10mg	Binder
6	Magnesium stearate	5mg	Lubricant
7	Talc	5mg	Glidant

GRANULATION PROCESS:

WET GRANULATION:

Step 1: Weighing and Mixing of Ingredients.

• Weigh accurately the (Pumpkin seed extracts) and excipients (lactose, microcrystalline cellulose, and starch).

• Mix the ingredients in a suitable mixing vessel to ensure uniform distribution.

Step 2: Preparation of Granulating Liquid

• Prepare the granulating liquid (e.g., water or a solvent) according to the formulation requirements.

• Add the granulating liquid to the mixer containing the powder blend.

Step 3: Wet Granulation

• Mix the powder blend and granulating liquid until a uniform wet mass is formed.

• Continue mixing until damp mass was formed and consistency are achieved.

Step 4: Sieving

• The wet mass was passed through sieve no. 10 or 12 to prepare granules. Step 5: Drying

• Transfer the wet granules to a drying tray or a fluidized bed dryer.

• Dry the granules at a controlled temperature (e.g., 4 0-50°C) and humidity until the desired moisture level is achieved.

FIG.9 – HERBAL GRANULE

TABLET COMPRESSION:

1. Then granules are compressed in tablet punching machine (according to size and shape).

Formation of 250 mg herbal tablets

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FIG.10– HERBAL TABLE

EVALUATION PARAMETER

Post compression studies:

1. General appearance: Colour : Light green
Shape : Round

2. Hardness test:

The Monsanto hardness tester determined the hardness of randomly selected 20.0 tablets. The average hardness for 20 tablets is between 4.5 kg/cm²-4.9 kg/cm²

3. Weight variation Test:

The weight variation test was performed by following procedure .weigh 20 tablets individually and consider as X1,X2,X3,. X20.Determine the average weight of 20 tablets X= (X1+X2+X3+. +X20)/20. The individual weight was compared
with the upper limit and lower limit. Not more than two of tablets differ from the average weight by more than the % error listed , and no tablets differ by more than double that percentage.
Total weight of 20 tablet = 4.846 g
Average weight = 4.846/20 = 0.2423 g (242.3 mg 7.5% of 242.3 mg = 18.17
Lower limit = Average weight - (Average weight % error)
= 242.3 – 18.17
Lower limit = 224.1 mg
Upper limit = Average weight + (Average weight % error)
= 242.3 + 18.17
Upper limit = 260.5 mg
According to IP standards, tablet having an average weight of 248.1 mg allow +/- 7.5% weight variation. All the individual weight of tablet is within the upper and lower limit.

4. Thickness Test

Thickness and diameter test permits accurate measurement and provides information on the variation between tablets. 10 tablets were taken and the thickness and diameter were measured using a digital vernier caliper. The tablet thickness and diameter should be controlled within a ±5% variation of standard value.The thickness of the tablets was measured and was found in the range between 0.2 mm and 3 mm.

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FIG NO.11. VERNIER CALIPER

5. Friability Test

Friability of tablets can determine in a laboratory by RocheFriabilator.The friabilator consists of plastic chamber that rotates at 25 rpm, dropping the tablets through a distance of six inches in the friabilator, which is then operated for 100 revolutions. Then tablets are Reweighed. Compress tablets loss less than 0.5% to 1.0% of the tablet weight are considered acceptable

6. Disintegration Test:

Disintegration time was measured by putting 6 tablets of each of the studied formulation separately in basket rack assembly using disks to avoid floating of tablets in 900 ml distill water maintained at 37±2°C. Disintegration time = 12.1 Minute

FIG.13– DISINTEGRATION TEST APPARATUS

7. Dissolution Test:

To determine the dissolution rate of Pumpkin seeds extracts from herbal tablets. Materials

1. Herbal tablets (6 tablets)
2. Dissolution apparatus.
3. Dissolution medium (900 mL of Phosphate buffer solution (pH 6.8)
4. UV-Visible spectrophotometer

Method

1. Place one tablet in each of the six dissolution vessels.
2. Add 900 mL of dissolution medium to each vessel.
3. Set the dissolution apparatus to 37°C ± 0.5°C and 50 rpm.
4. Withdraw 10 mL of sample at 5,10,15 and 30 minutes.
5. Measure the absorbance of each sample at 254 nm and 346 nm using a UV-Visible spectrophotometer.

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6. Calculate the percentage of Pumpkin seeds extracts dissolved at each time interval

FIG.14 – DISSOLUTION TEST APPARATUS

ASSAY:

To determine the content of pumpkin seeds extracts in herbal tablets using UV-Visible spectroscopy.

Materials

1. Herbal tablets (20 tablets)
2. Pumpkin seeds extract standard (100 µg/mL)
3. Ethanol
4. UV-Visible spectrophotometer

Methods

1. Prepare a standard solution of pumpkin seeds extract (100 µg/mL) in ethanol.
2. Prepare a sample solution by dissolving 20 tablets in ethanol.
3. Measure the absorbance of the standard and sample solutions at 254 nm using a UV-Visible spectrophotometer.
4. Calculate the content of pumpkin seeds extracts in the tablet using the following formula: Content (%) = (Absorbance of sample / Absorbance of standard) x (Concentration of standard / Concentration of sample) × 100

ANTHELMINTIC ACTIVITY TEST

To determine the Anthelmintic activity of herbal tablet prepared from pumpkin seeds extract using earthworms (pheretima posthuma).

MATERIAL:

1. Herbal tablets (Pumpkin seed formulation)
2. Albendazole standard solution
3. Normal saline / Phosphate buffer
4. Earthworms (Pheretima posthuma)
5. Petri plates
6. Stopwatch:

METHOD:

1. Prepare different concentrations of herbal tablet solution (50 and 100 mg/mL) using phosphate buffer.
2. Prepare standard Albendazole solution of the concentration.

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3. Divide earthworms into groups containing 4 worms each.
4. Place worms in Petri plates containing control, standard and test solutions.
5. Observe and record:
* Paralysis time (P)
* Death time (D)
6. Paralysis time was noted when worms stopped movement except upon vigorous shaking.
Death time was recorded when worms showed no movement even after dipping in warm water

RESULT:

Collection and Authentication :

The plant was authenticated by Department of Botany and Research centre, Shri Sadguru Gangageer Maharaj Science arts and Sanjivani college on 18 March 2026.

Rayat Shikshan Sanstha's
Estd : June 1965

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Prof.(Dr.) Madhav Sarode
M.Sc., Ph.D

Ref. No. : 7816\2025-26 Date : 18/03/2026

To,
The Principal,
R. J. S. College of Pharmacy,
Kokamthan,
Tal: Kopargaon,
Dist: Ahmednagar

Sub: About identification of plant specimen
Ref.: Your letter RJS/PH/2025-26 /7816dated 18/03/2026

Respected Sir,

This is to certify that the plant species brought by Mr. SANNY SANTOSH SHAH of R.J.S College of Pharmacy, Kokamthan, is identified and authenticated as mentioned below:

Sr. No.	Scientific Name	Family	Synonym	Local Name
1	cucurbita pepo	Cucurbitaceae	Pumpkin seed	Bhopla beej

The authentication is carried out by using following flora:

References:

Singh N. P., P. Lakshminarasimhan, S. Karthikeyan & P. V. Prasanna. 2001. Flora of Maharashtra State. Vol. II. Botanical Survey of India, Kolkatta.

Thanking You,

In-charge Professor
Dr. N. V. Malpure

Yours faithfully,
Principal
S.S.G.M. College
Kopargaon

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HSC Code No. Jr. 12.04.001
Web : www.ssgmcollege.org
AISHE Code : C-42027

FIG.15- AUTHENTICATION LETTER

PHYTOCHEMICAL SCREENING

1) Pumpkin seeds extract :

TABLE NO.3 : EVALUATION PARAMETER OF PUMPKIN SEEDS EXTRACT

Sr. No	Phytochemicals	Chemical Test	Result
1	Alkaloids	Dragendorff test	++
2	Tannins	Ferric chloride test	++
3	Saponins	Form test	++
4	Triterpenoids	Liebermann test	++

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FIG.16 – TEST FOR PUMPKIN SEEDS EXTRACT

TABLE NO.4: PRE FORMULATION PARAMETER

Sr.no	Pre formulation parameters	Result
1	Bulk density	0.86 gm/mL
2	Tapped density	0.95 gm/mL
3	Hausner's ratio	1.10
4	Carr's index	9.47 %
5	Angle of repose	27.3 Degree

POST FORMULATION PARAMETER:

1] HARDNESS TEST:

TABLE NO.5: TABLET HARDNESS

Sr. No.	Herbal Tablet	Hardness
1	TABLET 1	4.5 kg/cm2
2	TABLET 2	4.6 kg/cm2
3	TABLET 3	4.5 kg/cm2

2] THICKNESS TEST:

TABLE NO.6: THICKNESS TEST

Sr. No.	Herbal Tablet	Thickness
1	TABLET 1	3 mm
2	TABLET 2	2.9 mm
3	TABLET 3	2.9 mm

3] WEIGHT VARIATION:

TABLE NO.7: WEIGHT VARIATION

Sr No.	Weight of tablet (mg)	Percent deviation (%)	Sr. No.	Weight of tablet (mg)	Weight variation (%)
1	251	2.57%	11	250	3.17%
2	242	-0.12%	12	244	0.70%

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3	243	0.69%	13	239	-1.36%
4	242	-0.12%	14	241	-0.53%
5	249	1.76%	15	243	0.28%
6	247	1.93%	16	243	0.28%
7	245	0.12%	17	259	6.89%
8	238	-1.77%	18	239	-1.36%
9	248	1.35%	19	238	-1.77%
10	242	-0.12%	20	246	1.52%

The weight variation test was successfully performed average weight by more than +/-7.5 %.

4))FRIABILITY TEST:

The friability test was performed successfully. The result was found to be 0.37 % friability of herbal tablet.

5) DISINTEGRATION TEST:

TABLE NO.8: DISINTEGRATION TIME

Sr.No	Herbal Tablet	Disintegration Time
1	TABLET 1	12.2 min
2	TABLET 2	12.5 min
3	TABLET 3	10.8 min
4	TABLET 4	12.8 min
5	TABLET 5	10.2 min
6	TABLET 6	12.2 min

Disintegration time is 12.2 min.

6] DISSOLUTION TEST:

TABLE NO.9: DISSOLUTION TEST

Sr. No.	Herbal Tablet	Dissolution Time
1	TABLET 1	40 min
2	TABLET 2	39 min
3	TABLET 3	43 min
4	TABLET 4	40 min
5	TABLET 5	40 min
6	TABLET 6	38 min

6] ANTHELMINTIC ACTIVITY TEST :

TABLE NO.12 : ANTHELMINTIC ACTIVITY TEST

GROU P	TREATMENT	CONC	PARALYSIS TIME (MIN)	DEATH TIME (MIN)
1	Control (Phosphate buffer)	--	--	--
2	Standard (Albendazole)	10	12.35	28.76
3	Pumpkin seed Extract (Low dose)	50	19.42	42.18
4	Pumpkin seed Extract (High dose)	100	10.24	21.35

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FIG.17– ACTIVITY TEST FOR ANTHELMINTIC

II. CONCLUSION

The herbal tablet containing pumpkin seed extract was successfully formulated and evaluated. The results indicated that the prepared tablets complied with official standards for physical evaluation parameters and exhibited good tablet properties. The formulation showed effective anthelmintic activity against earthworms, confirming the therapeutic potential of pumpkin seeds as a natural anthelmintic agent.The study concludes that pumpkin seed extract can be used as a safe and effective herbal alternative for the treatment of helminthic infections. Further studies on stability, toxicity, and clinical evaluation are required to establish its efficacy and safety for large-scale pharmaceutical use.

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