



FORMULATION AND EVALUATION OF HERBAL CHURNA FOR CONSTIPATION

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ABSTRACT:

Formulation and evaluation of herbal churna for constipation. Constipation is a common gastrointestinal problem affecting a large proportion of the population. Traditional herbal medicine has been used for centuries to treat constipation, and recent research has begun to provide evidence for their effectiveness. This review aims to provide an overview of the herbal medicines commonly used for constipation, including their mechanism of action, pharmacological properties, and clinical evidence supporting their use. Some of the commonly used herbal medicines for constipation include Senna, Psyllium, Aloe vera, and Triphala. The review highlights that herbal medicines can be a safe and effective option for managing constipation, and further research is needed to better understand their mechanisms of action and optimal dosages. The manufacturer of Churna, Sheth Brothers, formulated a combination of few Ayurvedic herbs that benefit in constipation, blended them into powder form and 1 hize it as churna. As the standardization of herbal formulation is great concern for its safety and efficacy for that reason this work is aimed to formulation comparative evaluation of churna with marketed product. Churna, a traditional Ayurvedic formulation, has been used for centuries to treat constipation. The powder, composed of a blend of natural herbs and ingredients, stimulates bowel movements, softens stools, and relieves straining during defecation. With its natural and safe composition, Churna offers a cost-effective and minimally invasive solution for managing constipation. These abstract reviews the ingredients, preparation, and pharmacological properties of Churna, highlighting its potential as a natural remedy for constipation relief. Constipation is characterized by a variety of bowel symptoms such as difficulty passing stool, hard stool, and a feeling of incomplete evacuation. The multifactorial causes of constipation limit the clinical efficacy of current conventional treatments that use a single drug that acts through only one pathway. To complement the shortcomings of the current Western medical model and provide a complete holistic approach, herbal medicines capable of targeting multiple organs and cellular sites may be used.

Keywords: Churna, Ayurvedic formulation, constipation relief, natural remedy, traditional medicine

Introduction:

Churna is defined as a fine powder of drug or drugs in Ayurvedic system of medicine. Drugs mentioned in patha, are cleaned properly, dried thoroughly, pulverised and then sieved. The churna is free flowing and retains its potency for one year, if preserved in an air tight container. Triphala churna, Trikatu churna, Drakeshadi churna and Sudharsanachurna are some of examples. Churna formulation are similar to powder formulations in Allopathic system of medicine. Constipation is a common digestive issue that can lead to discomfort, bloating, and a general sense of unease. In today's fast-paced lifestyle, irregular eating habits, low fiber intake, and lack of physical activity often contribute to this problem. Herbal remedies have long been trusted in traditional medicine for their gentle yet effective action on the digestive system. Introducing our Herbal Constipation Relief Churna – a carefully formulated blend of time-tested herbs known for their natural laxative properties and digestive support. This churna combines the goodness of Ayurvedic ingredients like Isabgol (Psyllium husk), Senna, Triphala, Ajwain, and Saunf, working together to promote regular bowel movements, relieve bloating, and support gut health without causing In recent days churna is formulated into tablets in order to fix the dose easily. These forms of medicament are prescribed generally because of their particle size. Smaller the particle size greater is the absorption rate from g.i.t and hence the greater is bioavailability. It is prescribed by the Ayurvedic physician for treating conditions such as diabetes, indigestion, constipation etc. Indigestion is a common ailment affecting the general population and in allopathy system antacids are commonly prescribed. Since the usage of such aluminium containing antacids cause deleterious effects like Alzheimer's disease upon long term usage, we explored an alternative and safe remedy for indigestion. Hence, we prepared a churna with natural ingredients commonly used by mankind for culinary purposes. Thus, the present study examined the favourable influence of four spices formulated into churna said to have digestive property. The common ingredients of these churna were Ginger (*Zingiber officinale*), Ajowan (*Trachipterus ammi*), Cinnamon (*Cinnamomum zeylanicum*) and Fennel (*Foeniculum vulgare*). The formulated churna derived from above said drugs is reported to have a wide range of biological activity.

There are mainly two groups of Ayurvedic compound formulations.

1. Kasthausadhi
2. Rasaushadhi

Kasthausadhi The meaning of Kasthausadhi is a drug obtained from medicinal plants. Rasaushadhi It refers to drugs and the use of metals and minerals in medicine. Herbo- mineral formulations, or Rasaushadhi, are formed by combining metals and herbs Ayurvedic Dosage form types Ayurvedic dosage forms are classified into four forms and their respective subtypes. They are as follows

1. Solid dosage forms: i. Pills ii. Gutika iii. Vatika
2. Liquid dosage forms: i. Asava ii. Arishta iii. Taila iv. Arka
3. Semi-solid dosage forms: i. Avaleha ii. Lepa iii. Ghrata
4. Powder dosage forms: i. Churna ii. Bhasma iii. Satva8-9

Some Ayurvedic herbs may produce side effects or interact with conventional medications Churna: Churna is a Sanskrit term that refers to a type of Ayurvedic medicine that is made from a mixture of dried and powdered herbs, spices, and other natural ingredients. The term "Churna" literally means "powder" in Sanskrit. Churna is a traditional Ayurvedic formulation that has been used for centuries to promote health and wellness. It is a versatile form of medicine that can be used to treat a variety of health conditions, including:

Digestive issues

Respiratory problems

Skin conditions

Stress and anxiety

Immune system support

The benefits of Churna include:

Easy to prepare and administer

Can be customized to individual needs and health conditions

Can be used in combination with other Ayurvedic remedies

Natural and holistic approach to health and wellness

Churna can be prepared in various ways, including:

Mixing powdered ingredients with water or other liquids to create a paste or decoction

Taking the powder orally with water or other liquids

Using the powder as a topical application for skin conditions

Some common examples of Churna include:

Triphala Churna

Hingvashtak Churna

Panchsakar Churna

Nityam Churna

Kayam Churna

It is important to note that Churna should only be prepared and administered by a qualified Ayurvedic practitioner, as the preparation process involves specific techniques and methods to ensure the potency and efficacy of the final product.

Bhasma:

Bhasma is a Sanskrit term that refers to a type of Ayurvedic medicine that has been purified and calcined to create a potent and fast-acting remedy. The process of creating Bhasma involves heating the ingredients to extremely high temperatures, usually between 500-1000 degrees Celsius, to create a ash-like powder.

Bhasma is used to treat a variety of health conditions, including:

Chronic diseases

Degenerative diseases

Autoimmune disorders

Inflammatory conditions

The benefits of Bhasma include:

Fast-acting and potent

Easy to absorb and digest

Can be used to treat a variety of health conditions

Can be used in combination with other Ayurvedic remedies

Some common types of Bhasma include:

Swarna Bhasma (Gold Ash)

Rajata Bhasma (Silver Ash)

Tamra Bhasma (Copper Ash)

Loha Bhasma (Iron Ash)

Abhrak Bhasma (Mica Ash)

It is important to note that Bhasma should only be prepared and administered by a qualified Ayurvedic practitioner, as the preparation process involves high temperatures and can be dangerous if not done properly.

Satva:

Satva is a Sanskrit term that refers to a type of Ayurvedic medicine that is made from the essence or extract of a plant or herb. It is a concentrated and potent form of the ingredient, which is extracted using a traditional Ayurvedic process. Satva is used to treat a variety of health conditions, including:

Digestive issues

Respiratory problems

Skin conditions

Stress and anxiety

Immune system support

The benefits of Satva include:

Highly concentrated and potent

Easy to absorb and digest

Can be used to treat a variety of health conditions

Can be used in combination with other Ayurvedic remedies Satva is often used in Ayurvedic medicine to:

Enhance the bioavailability of the ingredient

Increase the efficacy of the treatment

Provide a natural and holistic approach to health and wellness

Some common examples of Satva include:

Ashwagandha Satva

Brahmi Satva

Guduchi Satva

Turmeric Satva

Ginger Satva

Review Literature:**1. Patel et al. (2019):**

Formulation and evaluation of herbal churna for constipation involves a multidimensional approach, encompassing botanical, pharmacological, and formulation aspects.

2. Gupta et al. (2020):

investigated the efficacy of a churna containing Triphala, Senna, and Psyllium husk in promoting bowel movements and relieving constipation symptoms.

3. Sharma et al. (2018) :

Formulation and evaluation of herbal churna for constipation have garnered significant attention in recent years due to the rising interest in natural remedies and the need for effective and safe alternatives to conventional laxatives.

4. Samantha Mk et al(2000):

Natural products have been a source of inspiration for drug discovery and developmentHerbal drugs are becoming increasingly popular due to their perceived safety and efficacyThere is a need for scientific validation of traditional medicinal plants to ensure their safety and efficacyVarious techniques such as chromatography and spectroscopy are used to analyze and standardize herbal drugs The authors discuss various aspects of natural product development, including extraction, isolation, and characterization of bioactive compounds.

5. Sagar Bhanu P.S et al(2005):

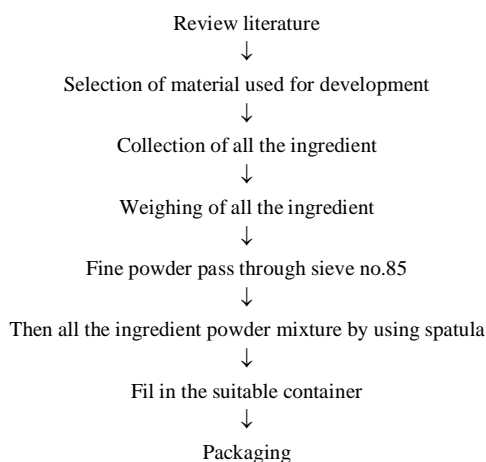
The authors highlight the need for standardization in herbal drug development to ensure quality, safety, and efficacy. The authors discuss various parameters involved in standardization,including botanical identification, phytochemical analysis, and pharmacological evaluation.

6. Ramya kuber et al (2017):

Preparation of the ethanolic extract of each individual ingredients of Shatavaryadi Churna herbal formulation, marketed and house formulation. Shatavaryadi Churna was evaluated by: Organoleptic, Preliminary Phytochemical analysis, Determination of Extractive

values, Ash values, moisture content, Bulk density, Tap density, Carr index, Hausner's ratio, Angle of repose and In vitro anti microbial activity.

Plan Of Work :



Aim And Objective:

Aim Formulation And Evaluation Of Herbal Churna For Constipation

Objective:

1. Promote regular bowel movements: Herbal churna can help stimulate bowel movements and prevent constipation.
2. Soften stool: Certain herbs can help soften stool, making it easier to pass.
3. Reduce symptoms: Herbal churna can help alleviate symptoms associated with constipation, such as bloating, abdominal pain, and discomfort.
4. Relieve constipation naturally – by promoting smooth bowel movements without harsh chemicals.
5. Improve digestion – many ingredients help stimulate digestive enzymes and balance gut flora.
6. Detoxify the colon – by removing waste buildup and reducing bloating or gas.
7. Support regularity – encouraging consistent and healthy bowel habits.
8. Strengthen the digestive system – long-term use may help tone the intestines and reduce recurrence of constipation.
9. To develop a safe, effective, and natural herbal remedy for constipation using traditional medicinal herbs.
10. To select and combine herbs with known laxative, carminative, and digestive properties.
11. To optimize the formulation for appropriate taste, texture, and palatability.
12. To ensure stability and shelf-life of the churna under normal storage conditions.
13. To prepare a cost-effective and easily administrable dosage form.

Material And Methods: Fennel (*Foeniculum vulgare*) :



Fig No. 1 Fennel

Fennel (foeniculum vulgare) Synonyms: sauf

Biological source: fennel, (Foeniculum vulgare), perennial herb of the carrot.

Family: Apiaceae

Chemical constituents: Fennel contains volatile oil (1-4%), fixed oil (9-12%) and proteins (20%).

Uses:

Fennel is used for various digestive problems including heartburn, intestinal gas, bloating, loss of appetite and colic in infants

Health Benefits:

1. Digestive aid: Fennel seeds and tea may help alleviate digestive issues like bloating, gas, and indigestion.
2. Antioxidant properties: Fennel contains antioxidants, which can help protect against oxidative stress and inflammation.
3. Menstrual relief: Fennel tea may help alleviate menstrual cramps, bloating, and other symptoms associated with PMS.

Medicinal Uses:

1. Carminative: Fennel seeds and oil are used to relieve gas and bloating.
2. Expectorant: Fennel is used to help relieve respiratory issues like bronchitis and coughs.
3. Antibacterial and antifungal properties: Fennel oil has been shown to have antimicrobial properties.

Precautions and Contraindications:

1. Allergic reactions: Some individuals may be allergic to fennel, which can cause symptoms like hives, itching, and difficulty breathing.
2. Pregnancy and breastfeeding: Fennel is generally considered safe during pregnancy and breastfeeding, but it's always best to consult with a healthcare professional.

Quality and Safety:

1. Choose high-quality fennel: Select fennel products from reputable sources to ensure purity and potency.
2. Follow proper preparation and dosage: Consult with a healthcare professional or follow established guidelines for preparation and dosage.

Advantages of Fennel:

- Aids Digestion
- Relieves bloating, gas, and indigestion
- Improves gut health
- Rich in Nutrients
- Contains vitamin C, fiber, potassium, and antioxidants

Disadvantages of Fennel:

- Hormonal Effects
- Contains phytoestrogens, which can affect hormone-sensitive conditions (e.g., breast cancer, endometriosis)
- Allergic Reactions
- Rare, but can cause skin rashes or respiratory issues in sensitive people
- Photosensitivity

Side effects of Fennel include:

- difficulty breathing
- tightness of chest/throat
- chest pain

Side effects of Fennel include:

- difficulty breathing
- tightness of chest/throat
- chest pain
- nausea
- vomiting
- hives
- rash
- itchy or swollen skin
- mild increase in menstrual flow
- sun sensitivity

Mulethi (Licorice) :**Fig No. 2 Mulethi****Mulethi :-** (Yashtimadhu)**Family :-** Fabaceae.**Biological source :-** licorice, Glycyrrhiza Globra Synonyms :- Yashtimadhu **Chemical constituents :-** Glycyrrhizin / glycyrrhizic acid Glucuronic acid **Sugars :-** Glucose, mannitol, Resin volatile Starch**Uses :-**

Maintain mucosal health of the digestive tract. Relieves Constipation.

Present gastric and peptic ulcer

Health Benefits of Mulethi (Licorice Root)

1. Digestive issues: Mulethi helps soothe digestive problems like indigestion, bloating, and gas.
2. Respiratory health: Expectorant properties of Mulethi help relieve coughs, colds, and congestion.
3. Skin and hair: Mulethi is believed to promote healthy skin and hair, reducing inflammation and improving texture.
4. Stress and anxiety: Adaptogenic properties of Mulethi may help reduce stress and anxiety levels.
5. Immune system: Mulethi is thought to boost the immune system, preventing illnesses and infections.

Ayurvedic Uses of Mulethi:

1. Rasayana: Mulethi is considered a rasayana herb, which means it's believed to promote overall health and well-being.
2. Panchakarma: Mulethi is used in Panchakarma treatments to detoxify and rejuvenate the body.
3. Herbal remedies: Mulethi is combined with other herbs to create remedies for various health issues.

Precautions and Contraindications:

1. Excessive consumption: High doses of Mulethi can lead to high blood pressure, potassium depletion, and other health issues.
2. Pregnancy and breastfeeding: Consult with an Ayurvedic practitioner or healthcare professional before using Mulethi during pregnancy or breastfeeding.
3. Interactions: Mulethi may interact with certain medications, such as diuretics, blood thinners, and diabetes medications.

Advantages of Mulethi (Licorice):

- Soothes Sore Throat & Cough
- Acts as a natural expectorant and anti-inflammatory
- Very effective for throat irritation, hoarseness, and bronchitis
- Supports Digestive Health
- Helps relieve acidity, ulcers, and inflammation of the stomach lining

Disadvantages of Mulethi (Licorice):

- May Increase Blood Pressure
- Glycyrrhizin can cause sodium retention and potassium loss
- Not recommended for people with high BP or heart issues
- Hormonal Effects
- May interfere with estrogen-sensitive conditions (e.g., breast cancer, fibroids)

Triphala (Three Fruits) :**Fig No. 3 Triphala**

Triphala:- (Three fruits) **Family :-**

Euphorbiaceae. **Synonym :-** vara, phalatrikam

Biological source :- Embilica officinalis (Indian gooseberry), Terminalia belerica (Belletic mytobula), Terminalia chebula (chebulic mycobalam).

Chemical Constituents :- Gallic acid, ellagic acid, ethyl gallate, golloyl glucose and chebulaginic acid.

Uses :-

Analgesic. Antibacterial, anti-arthritis. hypoglycemic, antiaging. Antiviral.

It helps with headache, dyspepsia, Fatigue, Oxidative stress reduction

Properties of Triphala:

1. Digestive Health

Acts as a gentle laxative and improves bowel movements

Strengthens the digestive fire (Agni) without causing dependency Reduces acidity, bloating, and indigestion

2. Detoxification

Cleanses the colon, liver, and blood Supports natural detoxification pathways

3. Antioxidant Power

High in polyphenols, Vitamin C, and flavonoids Neutralizes free radicals, slows aging

Advantages of Triphala:

- Improves Digestion & Relieves Constipation
- Acts as a natural, gentle laxative
- Enhances digestive fire without causing dependence
- Natural Detoxifier
- Cleanses the colon, liver, and blood

Disadvantages of Triphala:

- May Cause Loose Motions (in High Dose)
- Especially in sensitive individuals or with excess intake
- Start with a small dose to see how your body reacts
- Not Always Suitable During Pregnancy
- The laxative effect may not be ideal; use only under medical advice

Side Effects of Triphala:

- While triphala is generally safe,
- some people may experience
- Digestive discomfort (bloating, diarrhoea)
- Dehydration from excessive diarrhoea
- Headaches
- Skin rash (when applied topically)

Ajwain (Carom seed) :**Fig No. 4 Ajwain Ajwain :-**

(Carom seed) Family :- Umbellifers.

Synonym :- Ajwain, Careway, thymol seed

Biological source :- Originated in the eastern regions of Persia and India

Chemical Constituents :- Thymol (35-60%) Carvacrol (11.1.)

Uses :-

- Improve Digestive health.
- Provide Relief from cough and Constipation. Fight bacteria and Infection.
- Have Pinti Inflammatory effect. Soothe ear and tooth & Aches

Health Benefits:

1. Digestive aid: Ajwain seeds help alleviate digestive issues like indigestion, bloating, and gas.
2. Antimicrobial properties: Thymol and carvacrol in Ajwain exhibit antimicrobial activity, effective against bacteria, fungi, and viruses.
3. Anti-inflammatory: Ajwain's anti-inflammatory properties may help reduce pain and inflammation.
4. Respiratory health: Ajwain is used to relieve respiratory issues like bronchitis, asthma, and coughs.
5. Antioxidant properties: Ajwain's antioxidant properties help protect against cell damage and oxidative stress.

Quality and Safety:

1. Choose high-quality seeds: Select seeds from reputable sources to ensure maximum potency and safety.
2. Follow proper preparation and dosage: Consult with a healthcare professional or follow established guidelines for preparation and dosage.

Advantages of Ajwain:

- Boosts Digestion
- Excellent remedy for indigestion, gas, and bloating
- Stimulates the secretion of gastric juices
- Relieves Acidity
- Helps balance stomach acid levels

Disadvantages of Ajwain:

- Can Cause Acidity or Burning (in excess)
- Overuse may irritate the stomach lining, especially in people with ulcers
- Not Ideal During Pregnancy (in high doses)
- Can stimulate the uterus if consumed excessively
- Small culinary use is generally safe, but medicinal doses should be avoided
- May Lead to Heartburn
- Its warming nature may aggravate Pitta in some individuals

Side Effects of Ajwain:

- There are no particular side effects of Ajwain, however, consuming it limitlessly can result in serious problems. Here are some possible Ajwain side effects that can be caused by its overconsumption:
- Peptic Ulcers- Ajwain stimulates the secretion of gastric fluid. Excess of these secretions can have harmful effects on those who have peptic ulcers.
- Acidity or Reflux- Consuming Ajwain excessively can cause gas in the stomach, which in turn, results in acidity or reflux.

- Dizziness- The thymol present in Ajwain can lead to dizziness or vomiting.
- Pregnancy: If consumed in large quantities, Ajwain can stop the foetal development.

Kala Namak (Black Salt) :



Fig No. 5 Kala Namak

Black salt (kala namak)

Biological source :- Salt mines

Synonym :- Himalaya black salt, Indian black salt

Chemical Constituents :- Sodium Chloride, and a trace amount of sodium sulphate, sodium bisulphite. Sodium sulphide iron sulphide and

Uses:

- Constipation cure.
- Good for Arthritis.
- Promotes hair growth

Health Benefits:

1. Rich in minerals: Kala Namak contains various minerals like iron, potassium, and magnesium.
2. Antioxidant properties: The salt has antioxidant properties, which can help protect against cell damage and inflammation.
3. Digestive health: Kala Namak is believed to have digestive properties, which can help alleviate bloating, gas, and indigestion.

Precautions:

1. Excessive consumption: While Kala Namak is generally considered safe, excessive consumption can lead to high blood pressure and other health issues.
2. Interaction with medications: Individuals with certain medical conditions or taking medications should consult with their healthcare provider before using Kala Namak. Common Black Salt Side Effect

Advantages of Kala Namak:

- Improves Digestion
- Stimulates digestive enzymes
- Relieves bloating, acidity, and gas
- Natural Laxative (Mild)
- Helps relieve constipation when taken with warm water or fruits

Disadvantages of Kala Namak:

- Strong Sulfur Smell & Taste
- Not liked by everyone; has an “egg-like” odor that some find unpleasant
- Excess Use May Irritate Stomach
- Large quantities can aggravate Pitta, causing acidity or burning sensation
- Not Suitable for Kidney Issues (in excess)

Side Effect of kala namak:

- Due to its various health benefits, the use of kala namak is widely popular. However, black salt should be consumed in moderation to avoid any side effects. There have been various black salt side effects, which are listed below:
- Black Salt May Cause Stomach Infections

- One of the prevalent black salt side effects is that it may cause stomach infections if consumed in excess quantity. It is packed with fluoride and other chemicals, which can cause nausea, vomiting and other stomach issues if consumed in excess quantities.
- Black Salt May Cause Dental Issues
- Another significant side effect of black salt is that it can cause dental issues because of the presence of fluoride. The high concentration of fluoride may lead to dental fluorosis, which is basically a change in the appearance of tooth enamel.
- Black Salt May Cause Thyroid Dysfunction
- Iodine is an important element for proper thyroid function. However, black salt is not iodized, which is why regular consumption of black salt may lead to iodine deficiency, which can contribute to thyroid dysfunction, including hypothyroidism or goitre.
- Black Salt May Cause Kidney Stones
- High salt intake increases the amount of calcium in the urine, which can promote the development of calcium-based kidney stones. To reduce the risk, it is important to consume black salt in moderation and stay well-hydrated.

Flaxseed (Linseed) :



Fig No. 6 Flaxseed Flaxseed

(Linseed) Family :- Linaceae.

Synonym :- Linseed, Flaxseed.

Biological source :- Linseed is the dried ripe seed of *linum usitatissimum* linn

Chemical constituents :- a-linolenic acid. Dyphylline.

Uses :-

Preventing Constipation. Reducing hot flashes and Fatigue. Easing the symptoms of arthritis. Improves digestive health. Reduces high cholesterol

Health Benefits:

1. Heart health: The omega-3 fatty acids and fiber in flaxseed can help lower cholesterol levels and reduce the risk of heart disease.
2. Digestive health: The fiber in flaxseed can help promote regular bowel movements and prevent constipation.
3. Anti-inflammatory effects: The lignans and omega-3 fatty acids in flaxseed have anti-inflammatory properties, which can help reduce inflammation and improve symptoms of conditions such as arthritis.

Precautions and Contraindications:

1. Allergic reactions: Some individuals may be allergic to flaxseed, which can cause symptoms such as hives and itching.
2. Interactions with medications: Flaxseed may interact with certain medications, such as blood thinners and diabetes medications.

Quality and Safety:

1. Choose high-quality flaxseed: Select flaxseed that is fresh, organic, and free of contaminants.
2. Store flaxseed properly: Store flaxseed in an airtight container in the refrigerator or freezer to preserve its nutritional content.

Digestive Issues:

Bloating and Gas: Flax seeds are high in fiber, which can lead to gas and bloating, especially if consumed in large amounts or if you're not used to a high-fiber diet.

Diarrhea: Too much flaxseed can speed up digestion, potentially causing diarrhea, especially if not taken with enough water.

Constipation: While flaxseed is often used to relieve constipation, consuming too much without sufficient water intake can paradoxically worsen it or even cause an intestinal blockage.

Stomach Ache and Nausea: Some individuals may experience stomach discomfort or nausea when consuming flax seeds.

Advantages of flax seed:

- High in Fiber:
- Flaxseed is an excellent source of dietary fiber, which aids in digestion, promotes regularity, and can help with weight

management by promoting satiety.

- Rich in Omega-3 Fatty Acids:
- Flaxseed contains alpha-linolenic acid (ALA), an omega-3 fatty acid that supports heart health, reduces inflammation, and may lower the risk of heart disease.
- Good Source of Lignans:
- Flaxseed is rich in lignans, plant compounds with antioxidant and anti-inflammatory properties that may help reduce the risk of certain cancers, including breast and prostate cancer.

Disadvantages of flax seed:

- Potential Digestive Issues:
- Excessive fiber intake from flaxseed can lead to bloating, gas, and stomach discomfort, especially if introduced into the diet too quickly.
- May Interact with Medications:
- Flaxseed can interact with certain medications, including blood thinners and diabetes medications, so it's important to consult with a healthcare professional before adding it to your diet if you are taking any medications.

Fenugreek (Trigonella Foenum) :



Fig No. 7 Fenugreek (Trigonella foenum)

Family :- Fabaceae.

Synonym :- Alhalva, Chandrika, Fenugrec

Biological source :- Dried seed of Trigonella Foenum

Chemical constituents :- Alkaloids, Amino acids, Saponins, steroidal flavonoids

Uses :-

Fenugreek is a mild bulk forming laxative that's best suited for longterm use people with constipation, Fenugreek seed have a soothing effect on the digester system

Morphological Characteristics:

1. Stem: Annual, erect, or spreading, up to 30 cm tall
2. Leaves: Compound, trifoliate, with leaflets 1-5 cm long
3. Flowers: Small, white, and clustered in axillary racemes
4. Pods: Long, narrow, and contain 10-20 seeds
5. Seeds: Yellowish-brown, rhombic, and 3-5 mm long

Advantages of fenugreek :

- Blood Sugar Control: Fenugreek may help regulate blood sugar levels, potentially benefiting individuals with diabetes.
- Cholesterol Reduction: It can help lower LDL (bad) cholesterol and triglycerides, while increasing HDL (good) cholesterol.
- Digestive Health: Rich in fiber, fenugreek can aid digestion and relieve constipation.
- May Boost Milk Production: Fenugreek is traditionally used to increase milk production in breastfeeding mothers.
- May Improve Menstrual Cramps: Some studies suggest fenugreek can reduce menstrual cramps.

Disadvantages of fenugreek :

Digestive Issues: Excessive consumption can lead to bloating, flatulence, diarrhea, or nausea.

- Allergic Reactions: Some individuals may experience allergic reactions, including hives, wheezing, or difficulty breathing.
- Interactions with Medications: Fenugreek can interact with certain medications, including those for diabetes and blood thinners.
- Pregnancy and Breastfeeding: Fenugreek is not recommended during pregnancy in amounts greater than those found in food, as it may stimulate uterine contractions.
- Maple Syrup Odor: Fenugreek can cause a "maple syrup" odor in urine and body secretions.

side effects of Fenugreek :

Fenugreek appears relatively safe Trusted Source for most people.

However, as with most supplements, less serious side effects like diarrhea and indigestion have been reported anecdotally. You may also

experience reduced appetite Trusted Source, which could be harmful if you have an eating disorder or are trying to gain weight. Moreover, some people report a strange and slightly sweet body odor when supplementing, but this is unconfirmed. Given its effect on blood sugar, fenugreek should be used with caution if you're taking diabetes medication or other supplements that lower blood sugar levels.

Senna (*Cassia Angustifolia*)



Fig No.8 Senna

Senna:

Senna is a shrub-like plant native to Africa, India, and the Middle East. Its leaves and pods contain anthraquinone glycosides, which are responsible for its laxative properties.

Chemical Constituents:

1. Anthraquinone glycosides: Senna contains a range of anthraquinone glycosides, including sennosides A and B, which are responsible for its laxative effects.
2. Flavonoids: Senna also contains flavonoids, which have antioxidant and anti-inflammatory properties.

Health Benefits:

1. Laxative effects: Senna is primarily used to treat constipation, as it stimulates bowel movements and improves gut motility.
2. Relieves symptoms of IBS: Senna may help alleviate symptoms of irritable bowel syndrome (IBS), such as bloating, abdominal pain, and changes in bowel habits.
3. Antioxidant and anti-inflammatory effects: The flavonoids present in Senna may help protect against oxidative stress and inflammation.

Precautions and Contraindications:

1. Prolonged use: Senna should not be used for extended periods, as it can lead to dependence and decreased bowel function.
2. Interactions with medications: Senna may interact with certain medications, such as blood thinners, diabetes medications, and blood pressure medications.
3. Pregnancy and breastfeeding: Senna is generally considered safe during pregnancy and breastfeeding, but it's always best to consult with a healthcare professional.
4. Gastrointestinal issues: Senna may worsen gastrointestinal conditions like inflammatory bowel disease, gastroesophageal reflux disease (GERD), and stomach ulcers.

Quality and Safety:

1. Choose high-quality Senna: Select Senna products from reputable manufacturers, ensuring they are free of contaminants and adulterants.
2. Follow proper preparation and dosage: Consult with a healthcare professional or follow established guidelines for preparation and dosage.

Advantages of Senna:

- High Range & Poke
- Her passive lets her auto attacks and Q have long range, allowing her to harass safely.
- Scaling Power
- Collecting souls increases her range, crit chance, and damage, making her scale incredibly well into the late game.
- Healing & Utility

Disadvantages of Senna:

- Low Mobility
- No dashes or blinks; she's vulnerable to gap closers and all-ins.
- Squishy
- Easily burst down if caught out of position.
- Slow Passive Scaling

Side Effects of Senna :

- When taken by mouth Senna is likely safe for most adults when used for up to 1 week. Senna is an FDA-approved nonprescription (OTC) medicine. It can cause some side effects including stomach discomfort, cramps, and diarrhea.
- Senna is possibly unsafe when used for longer than 1 week or in doses above 34.4 mg sennosides twice daily. Long-term use can cause the bowels to stop functioning normally and might cause dependence on laxatives. Long-term use can also cause liver damage and other harmful effect

Sugar (Sucrose)**Fig No.9 Sugar**

Sugar is a sweet, soluble carbohydrate that's found in many foods. It's a source of energy that's made up of carbon, hydrogen, and oxygen.

Types of Sugar:

1. Sucrose: Table sugar, extracted from sugarcane or sugar beets.
2. Fructose: Fruit sugar, naturally occurring in fruits and honey.
3. Glucose: Blood sugar, found in fruits, vegetables, and grains.
4. Lactose: Milk sugar, found in milk and dairy products.
5. Maltose: Malt sugar, found in malted grains and cereals.

Chemical Structure:

Sugar is composed of carbon, hydrogen, and oxygen atoms. Sucrose, the most common type of sugar, has the chemical formula $C_{12}H_{22}O_{11}$.

Physical Properties:

1. Appearance: Sugar is a white, crystalline solid.
 2. Solubility: Sugar is highly soluble in water and other polar solvents.
 3. Melting point: Sugar melts at 186°C (367°F).
- Health Effects**
1. Energy source: Sugar is a quick source of energy for the body.
 2. Weight gain: Consuming excessive sugar can lead to weight gain and obesity.
 3. Insulin resistance: Regularly consuming high amounts of sugar can lead to insulin resistance and type 2 diabetes.

Uses

1. Food and beverages: Sugar is widely used as a sweetener in foods, beverages, and desserts.
2. Preservation: Sugar is used as a preservative to prevent spoilage and extend shelf life.
3. Pharmaceuticals: Sugar is used as an excipient in some medications.

Advantages of Sugar:

- Quick Energy Boost
- Sugar (especially glucose) is rapidly absorbed into the bloodstream, providing a fast energy source for the body and brain.
- Enhances Taste
- Sugar improves the flavor of food and beverages, making them more enjoyable.
- Improves Food Preservation

Disadvantages of Sugar:

- Weight Gain & Obesity
- Excess sugar intake adds empty calories, contributing to weight gain and obesity over time.
- Increased Risk of Diabetes
- Overconsumption of sugar can lead to insulin resistance, raising the risk of type 2 diabetes.
- Tooth Decay
- Sugar feeds bacteria in the mouth, leading to cavities and gum disease.

Isabghol (Psyllium Plantago Ovata)**FigNo.10 Isabghol**

Isabgol is a natural fiber supplement that is rich in soluble fiber, particularly mucilage. The mucilage is extracted from the seeds of the *Plantago ovata* plant.

Chemical Constituents:

1. Mucilage: Isabgol contains a high amount of mucilage, a soluble fiber that forms a gel- like substance when mixed with water.
2. Polysaccharides: Isabgol also contains other polysaccharides, including galactomannans and arabinose.

Health Benefits:

1. Digestive health: Isabgol helps regulate bowel movements, relieve constipation, and prevent diarrhea.
2. Cholesterol reduction: The soluble fiber in Isabgol can help lower LDL (bad) cholesterol levels.

Uses:

1. Constipation relief: Isabgol is commonly used to relieve constipation and promote regular bowel movements.
2. Fiber supplement: Isabgol can be used as a natural fiber supplement to support digestive health.
3. Weight loss: Isabgol can be used as a natural aid for weight loss.

Precautions and Contraindications:

1. Allergic reactions: Some individuals may be allergic to Isabgol, which can cause symptoms like hives, itching, and difficulty breathing.
2. Interactions with medications: Isabgol may interact with certain medications, such as blood thinners, diabetes medications, and cholesterol-lowering medications.
3. Pregnancy and breastfeeding: Isabgol is generally considered safe during pregnancy and breastfeeding, but it's always best to consult with a healthcare professional.

Quality and Safety:

1. Choose high-quality Isabgol: Select Isabgol products from reputable manufacturers, ensuring they are free of contaminants and adulterants.
2. Follow proper preparation and dosage: Consult with a healthcare professional or follow established guidelines for preparation and dosage.

Advantages of Isabghol:

- Promotes Digestive Health:
- Acts as a natural laxative, helping relieve constipation.
- Adds bulk to stool and helps in regular bowel movements.
- Helpful in Diarrhea:

Disadvantages of Isabghol:

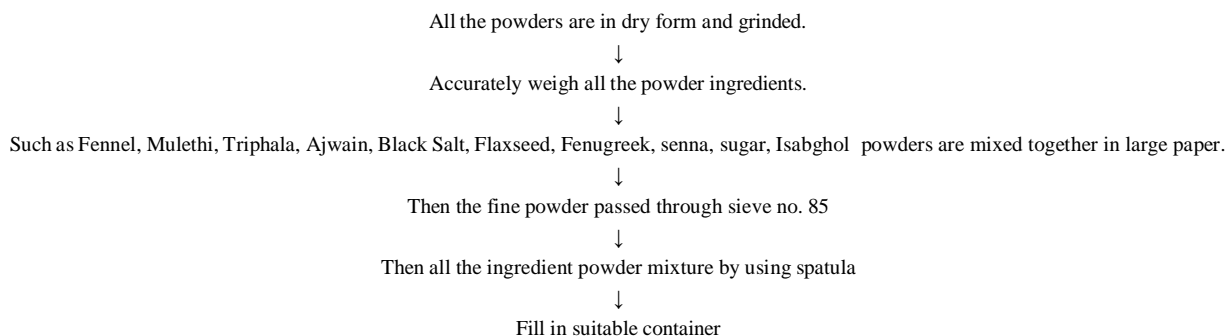
- Gas and Bloating:
- Especially when starting use or when taken in large quantities.
- Choking Hazard:
- Must be taken with plenty of water—if taken dry, it can swell and block the throat or esophagus

Side Effects of Isabgol:

- Due to its laxative effects and ability to create intestinal bulk, psyllium might have adverse side effects. So, before you decide to go ahead with a daily dose of Isabgol, you might want to consider some of its most common side effects, which include diarrhoea, abdominal pain, gas, frequent bowel movements, and nausea.

- Make sure to check with your doctor if you start experiencing symptoms like itchiness, difficulties in breathing, rashes appearing on your skin, swelling of the face and throat, and vomiting.
- . Bloating and Gas: Isabgol can cause bloating and gas in some individuals, especially when first starting to take it.
- . Abdominal Cramping: Some people may experience abdominal cramping or discomfort when taking isabgol.
- . Diarrhea: Isabgol can cause diarrhea in some individuals, especially if taken in high doses.
- . Constipation Worsening: If not taken with enough water, isabgol can worsen constipation.

Procedure :-



Experimental work

Formulation table for herbal churna:-

| Sr. No | Name Of Ingredient's | | |
|--------|----------------------|--------------------------|----------|
| | Ayurvedic | English | Quantity |
| 1 | Fennel | Foeniculum Vulgare | 5gms |
| 2 | Mulethi | Liquorice | 5gms |
| 3 | Triphala | Three Fruits | 2gms |
| 4 | Ajawaine | Carom Seed | 2gms |
| 5 | Kala Namak | Black Salt | 2gms |
| 6 | Flax Seeds | Linseed | 2gms |
| 7 | Fenugreek | Trigonella Foenum | 2gms |
| 8 | Senna | Cassia Angustifolia | 2gms |
| 9 | Sugar | Sucrose | 10gms |
| 10 | Isabgol | Psyllium Planatago Ovata | 5 Gms |

Table No.1 Formulation table for herbal churna Quantity Of Ingredient:

| Sr.no | Ingredient | F1 | F2 | F3 |
|-------|------------|----|----|----|
| 1 | Fennel | 5 | 4 | 4 |
| 2 | Mulethi | 5 | 4 | 4 |
| 3 | Triphala | 2 | 2 | 2 |

| | | | | |
|----|------------|----|----|----|
| 4 | Ajawaine | 2 | 1 | 1 |
| 5 | Kala Namak | 1 | 1 | 1 |
| 6 | Flax Seed | 2 | 2 | 2 |
| 7 | Fenugreek | 2 | 2 | 2 |
| 8 | Senna | 2 | 2 | 2 |
| 9 | Sugar | 10 | 11 | 11 |
| 10 | Isabghol | 5 | 4 | 4 |

Table No.2 Quantity Of Ingredieint

Evaluation :

Colour :- The herbal churna powder is evaluated by its colour and the colour is checked visually.

Odour :- Herbal churna powder is checked by smelling the product.

Taste :- Taste of churna is checked by manually testing of powder

Abrasiveness :- Abrasiveness of herbal churna powder is checked manually by use in constipation

Spread ability :- It was evaluated manually by spreading powder. 7.

Texture:- It is evaluated manually by hands. Appearance:- It is evaluated by visually.

8. Stability The stability study was as per was med product prefer as per ICH guidelines. The maintained in different temperatures Condition to check its Stability.

Collection of herbal drugs:-

The ingredients used in churn are fennel Mulethi, Triphala, Ajwaine, Kala namak flaxseed fenugreek,senna ,Sugar,Isabghol or purchased from the markets or taken from laboratory then all herbal ingredients are dried and grounded using mixer.

Preparation of Herbal Churna:- then collect all ingredient powder weight accurately and mix well try to triturated by motor pestle until homogeneous mixture is occurred then all powder passed into #85 no SIEVE and then stored in air light container Physio chemical evaluation:-

PH:- Formulated herbal churn slash powder evaluated by taking five grams of churn/powder placed in 100 ml beaker allowthe 10 ml of boiled and then cooled water stir fast to make suspension and measure the PH.

Moisture Control:- 4gm of formulated tune are placed in proceeding dish containing

6.8cm in diameter and 2.4 depth in it. Then placed thesample in hot air oven for drying at 100 degrees Celsius for five minutes. Calculation % by mass = $100\text{ml/mM1} = \text{loss of mass M} = \text{mass of the material taken for the task}$. Rheological Evaluation:- 1.Flow property:- The final wars taken and fixed with a clamp to this time then the graph paper was kept below the funnel and at the height between graph paper and bottom of the funnel was measured. Then 50 gm of powder was weighed and placed in funnel after on graph by funnel then measure the flow property.

Bulk density:- 20 gm of powder was accurately weighed and carefully introduced in 100 ml graduated in bracket (1 ml) measuring cylinder the cylinder was dropped at two second interval onto a hard surface three times from a height of 1 inch to equalize upper surface of powder then volume of powder was noted and the bulk density in gm/ml was calculated.

Tapped Density:- 20gm of powder was accurately weighed and carefully introduced into 100 ml graduated in bracket (1 ml) measuring cylinder. Measuring cylinder was fitted on the beast the height of about four inches. Number of strokes given until further bulk water change then volume of powder was noted and the tap density in gm/ml notes calculated as: Tapped Density = wt. of Drug/ Tapped Volume

Evaluation Table:- Organic**Evaluation:-**

| Sr. No | Test | Observation |
|--------|----------------|----------------|
| 1 | Colour | Greenish Brown |
| 2 | Odour | Pungent |
| 3 | Taste | Salty |
| 4 | Abrasiveness | Good |
| 5 | Spread Ability | Good |
| 6 | Texture | Smooth, Fine |
| 7 | Appearance | Powder |
| 8 | Formability | Good |

| | | |
|---|-----------|--------|
| 9 | Stability | Stable |
|---|-----------|--------|

Table No.3 Organic Evaluation Physio-

Chemical Evaluation:-

| Sr. No | Test | Observation |
|--------|------------------|-------------|
| 1 | PH | 5.6 |
| 2 | Moisture Content | 1.9 |

Table No.4 Physio-Chemical Evaluation Rheological

Evaluation:-

| Sr. No | Test | Observation |
|--------|----------------|---------------|
| 1 | Flow Property | Less than 1cm |
| 2 | Bulk Density | 0.58 gm/ml |
| 3 | Tapped Density | 0.48 gm/ ml |

Table No. 5 Rheological Evaluation

Label:

| HERBAL CHURNA FOR CONSTIPATION | | |
|---|--|-------------------------|
| <div>Ingredients:</div> <div><div>Fennel:5gm</div><div>Mulethi:5gm</div><div>Triphala:2gm</div><div>Ajwain:2gm</div><div>Black Salt: 2gm</div><div>Flax Seed: 2gm</div><div>Fenugreek: 2gm</div><div>Senna:2gm</div><div>Sugar :10gm</div><div>Isabghol:5gm</div></div> | | Mfg.Lic.No.:2025 |
| | | Batch No.: A |
| | | Roll No.1 |
| | | Mfg.By.: hariom |
| | | Mfg.Date: 20-03-2025 |
| | | Exp.Date:20-03-2026 |
| | | STORAGE: Stored in Cool |
| | | And Dry Place |
| Price: 100rs/- | | |
| Satyajeet college of pharmacy mehar | | |

Herbal churna formulation photos :



FigNo.11 Herbal churna formulation photos

Sieving method Mortar pestle Herbal churna



Fig No. 12 Herbal churna

Result And Discussion:

In the present study formulation and evaluation of herbal churna powder the organoleptic properties showed as greenishbrown colour characteristics Odor with sweet taste. The powder has 0.58gm/ml bulk density the angle of repos was determined to find out the flow property and it shows good flow property. The ph. of the powder is 5.6 patch test also determines and no found irritation, redness and swelling. The poor flow ability and compressibility of the powder maybe due to the presence of fennel and other herbs. The study concludes that the churna has potential has a traditional ayurvedic medicine for constipation.

Conclusion:

Churna is a traditional ayurvedic formulation effective in treating constipation. The churnas herbal ingredients such as fennel were synergistically stimulated bowel movement and relive constipation. The formulations physio chemical properties though showing poor flow ability and demonstrate good mechanical strength and potential for effective treatment. Chruna offer a natural, safe and cost effective solution for managing constipation for minimal side effects. Further research and development can enhance the formulation properties and efficacy. Churna has a potential as a natural remedy for constipation, aligning with the principal of ayurvedic medicine. Herbal churna for constipation offers a natural, holistic approach to digestive health, drawing upon centuries of Ayurvedic wisdom. Formulated with time-tested ingredients such as Isabgol (Psyllium husk), Triphala (a combination of Haritaki, Bibhitaki, and Amalaki), Senna leaves, and Ajwain, these churnas work synergistically to promote regular bowel movements, cleanse the digestive tract, and restore gut balance. Unlike conventional laxatives, herbal churnas are typically gentle, non-habit forming, and supportive of overall digestive wellness. Their fiber-rich content helps soften stools and promote peristalsis, while the herbs often possess additional benefits like anti-inflammatory, detoxifying, and carminative properties. Clinical and anecdotal evidence suggests that regular use of herbal churna can lead to significant relief from chronic and occasional constipation, bloating, and discomfort— without causing dependency. However, individual results may vary, and it's essential to use the churna under the guidance of a qualified health practitioner, especially for people with pre-existing conditions or those taking medication. In conclusion, herbal churna presents a safe, effective, and sustainable solution for managing constipation, particularly when combined with healthy dietary habits, adequate hydration, and regular physical activity. Herbal churna for constipation offers a natural and effective solution for

promoting digestive health and relieving constipation. By combining various herbs like Triphala, Senna, and Psyllium Husk, herbal churna can help regulate bowel movements, soften stool, and support overall well-being.

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