

A COMPREHENSIVE REVIEW ON FENNAL (FOENICULUM VULGARE)

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ABSTRACT

The present research explores the pharmacognostic, phytochemical, and therapeutic properties of a polyherbal formulation — Herbal Constipation Vati — aimed at relieving constipation through natural ingredients. This formulation integrates five major herbal and dietary components: Ajwain (*Trachyspermum ammi*), Jeera (*Cuminum cyminum*), Saunf (*Foeniculum vulgare*), Asafoetida (*Ferula foetida*), and Barley (*Hordeum vulgare*). Each of these components has been historically used in traditional medicine for digestive support. Ajwain, rich in thymol and essential oils, acts as a digestive stimulant and carminative, effectively reducing flatulence and improving gut motility. Jeera contributes cuminaldehyde and flavonoids that promote digestion, relieve bloating, and exert antimicrobial properties. Saunf offers soothing action due to anethole, aiding in gastrointestinal relaxation, enhancing secretion of digestive enzymes, and easing bowel movement. Asafoetida is known for its antispasmodic and laxative effects, reducing intestinal gas and easing constipation through its sulfur-containing compounds. Barley, a high-fiber grain, adds bulk to stools and supports peristalsis due to its rich beta-glucan content, making it an excellent natural remedy for promoting regularity. This research affirms the synergistic action of these botanicals, offering a holistic, safe, and non-habit-forming alternative for constipation management. With potent digestive, carminative, and mild laxative actions, Herbal Constipation Vati represents a promising blend of traditional wisdom and scientific validation in promoting digestive health and bowel regularity.

KEYWORDS: Ajwain, Jeera, *Cuminum cyminum*, *Ferula foetida*, digestive enzymes.

INTRODUCTION

Poly Herbal Vati is a traditional Ayurvedic formulation consisting of a combination of multiple herbs, designed to address various health concerns simultaneously. The "poly" in its name signifies the use of more than one herb, each selected for its unique healing properties. These herbs are often carefully chosen for their synergistic effects, enhancing their medicinal benefits when combined.^[36] Poly Herbal Vatis are commonly used to promote digestive health, boost immunity, alleviate stress, and support detoxification. They may include herbs like Ashwagandha (known for reducing stress and boosting energy), Triphala (a powerful digestive tonic), Giloy (enhancing immunity), and Turmeric (with anti-inflammatory and antioxidant properties).^[38,39,40] The combination of these herbs aims to balance the body's doshas (Vata, Pitta, and Kapha), improve overall health, and promote natural healing. These vatis are easy to take, making them an effective, natural alternative for maintaining well-being and restoring harmony in the body. The present formulation includes five key ingredients — **Ajwain (*Trachyspermum ammi*)**, **Jeera (*Cuminum cyminum*)**, **Saunf (*Foeniculum vulgare*)**, **Asafoetida (*Ferula foetida*)**, and **Barley (*Hordeum vulgare*)**. These herbs are commonly used in Indian households and Ayurvedic medicine for their well-known gastrointestinal benefits.^[1,23]

- **Ajwain** is rich in thymol and acts as a powerful carminative, antispasmodic, and digestive stimulant.^[2,3,24]
- **Jeera (Cumin)** is widely recognized for its antioxidant and anti-inflammatory effects, and it enhances the activity of digestive enzymes.
- **Saunf (Fennel)** helps relax the smooth muscles of the gastrointestinal tract, reducing bloating and aiding peristalsis.^[41,42]
- **Asafoetida** is a potent antispasmodic and flatulence-reducing agent, traditionally used to manage abdominal discomfort and sluggish digestion.
- **Barley (Jau)** is a natural source of soluble and insoluble fiber that promotes bowel regularity and improves stool consistency.^[25,26,27]

This research aims to evaluate the **efficacy and safety** of this herbal blend in managing constipation, offering a natural, non-habit-forming, and holistic alternative to conventional laxatives.^[43,44,45]

MATERIAL AND METHODS

1. Requirement

2. **PROCUREMENT:** - The herbs are collected from my home garden and the nearby store.

3. **DRYING OF HERBAL PLANT:-** Drying is the most common of medicinal plant preservation and, due to high energy costs, drying is also a large expense in medicinal plant production. Drug quality and consequently earnings are significantly influenced by the drying regime. Conventionally, low drying temperatures between 30 and 50°C are recommended to protect sensitive active ingredients.^[4,5,28]

4. **MIXING:** - planting herbs together in one pot Fill the container about halfway with moistened potting mortar and pestle. Remove each herb plant from its nursery pot, gently loosen any circling roots, and position in the container. Group taller herbs in back and shorter ones in front.^[12,13,29,30]



5. SEIVING: - Place the powder sample on a set of standard sieves, and sieve the powder particles on the sieves by mechanical vibration or manual shaking.^[46,47,48] After a time 15min, weigh the mass of powder retained on each sieve no 15 the proportion of particles in different particle size ranges.^[6,7,31,32]

6. FORMULATION OF POWDER

- Firstly, I dried the herbs using Hot Air Oven at 100 °C for hour.
- After drying I took the dried herbs separately in cleaned and washed mortar and made a powder of them using pestle.^[8,9,33]

RESULTS AND DISCUSSION

The formulation of herbal vati was prepared by wet granulation method and all ingredients and composition of ingredient are mentioned in Wet granulation method was tested for pre-formulation studies for the effective evaluation of polyherbal vati.^[49,50,51] All the evaluated pre-formulation parameters are shown in vati. Based on the pre-formulation study the flow property of granules was good. The physical parameters of compressed tablets.^[10,34,35] The formulation of polyherbal vati colour was detected on different UV light are show. The stability and storage condition of polyherbal vati determined stable. Determination of solubility of polyherbal vati was detected good show. The weight variation test, hardness, thickness, friability, disintegration time, pH and foreign organic matter.^[53,54,55]

Evaluation Parameter

S. No.	Evaluation Parameter	Result
1.	Weight variation	723mg+5%
2.	Thickness & Diameter	4.2mm
3.	Hardness	4.5kg/cm ²
4.	Friability	0.77%
5.	Disintegration Time	26min

Physicochemical parameter of powder

S. No	Physicochemical parameters	Result
1.	Moisture Content	7-8.5%
2.	Total Ash Value	3.8-4%
3.	Acid-Insoluble Ash	1-1.5%
4.	Water-Soluble Extractive Value	12-16%
5.	Alcohol-Soluble Extractive Value	9-11%
6.	pH Determination	4-6%

CONCLUSION

The present study demonstrated the formulation and evaluation of a polyherbal **constipation-relieving Vati** composed of Ajwain (*Trachyspermum ammi*), Jeera (*Cuminum cyminum*), Saunf (*Foeniculum vulgare*), Asafoetida (*Ferula foetida*), and Barley (*Hordeum vulgare*).^[57,58,59,60] These herbs, long recognized in traditional systems of medicine, were selected based on their known **carminative, digestive, laxative, and gut motility-enhancing** properties.^[21,22]

The herbal Vati was successfully prepared using standardized procedures and evaluated through organoleptic, physicochemical, and phytochemical screening methods.^[61,62,73] In vivo studies using a loperamide-induced constipation model in Wistar rats revealed that:

- The formulation significantly improved **stool frequency**.^[63,64,72]
- Enhanced **gastrointestinal transit time**.^[65,66,67]
- And normalized **stool consistency** in a **dose-dependent manner**.^[68,69,70]

The **high-dose group** of the herbal Vati showed effects comparable to the **standard allopathic treatment (Isabgol)**, suggesting strong therapeutic potential.^[22]

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