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Research Article

Development of a Polyherbal Candy for Managing Nausea, Vomiting and Digestive Problems During Pregnancy

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ABSTRACT

Nausea, vomiting and digestive are common symptoms associated with various medical condition, treatment and physiological changes such as pregnancy and motion sickness. The use of herbal remedies for these conditions is gaining popularity due to their safety, efficacy. This study focus on the development and formulation of a herbal anti-emetic candy designed to alleviate nausea, vomiting and digestive using natural ingredients. Key words known for their anti-emetics and anti-digestive properties, such as Ginger (*Zingiber Officinale*), Amla (*Phyllanthus emblica*), Ajwain (*Trachyspermum ammi*) are selected based on their therapeutic potential. These ingredients are formulated into a palatable and convenient candy dosage form. The formulation process involves optimizing parameters such as flavor, texture, stability and bioavailability of active components. This research aims to provide an innovative, patient-friendly solution to manage nausea, vomiting and digestion, particularly in population such as children, pregnant women and individual undergoing chemotherapy, who obtain seek safer therapeutic option interventions in the field of natural medicine.

INTRODUCTION

Herbal pregnancy candy a natural and gentle solution for morning sickness relief, pregnancy is a time when extra care is needed for both the mother and child.

It is a state which involve maximum phase of morning sickness along with nausea, vomiting, spew up, weight loss show elevated level of

symptoms. In the pregnancy, the women have many hormonal imbalances. The main hormone is estrogen and progesterone, the increment of hormone (estrogen, and progesterone) that the sources of nausea and spew up in pregnancy women. Herbal candy has the property to improve the circulation of blood and it has anti-nausea and anti-vomiting and has rich quantity in antioxidant property. One of the main pharmacological

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function of herbal candy is the anti-emetics(Anti-Vomiting),support digestive property the herbal candies have two main roles in pregnancy stimulate brain and suppress vomiting. Herbal candy has not acute toxicity and it is taken as a food or medicine, the herbal candy is more suitable in all condition of pregnancy phase. In pregnancy phase the pregnant women have also a risk of diabetic patient in pregnancy phase the pregnant women have also a risk of diabetic so the jaggery is a good consideration risk of iron deficiency and blood pressure so the jaggery are useful in such condition.



Figure-1: Pregnancy Symptoms

Role of selected drug in herbal pregnancy candy:

The drug used in the herbal candy is based on their medicinal application.

1) **Ginger:**

Ginger is a flowering plant that belongs to the Zingiberaceae family.it is widely used for its rhizome, which is the underground stem that is commonly used as a spice and for its medicinal properties. Ginger has a long history of culinary and medicinal use in various culture around the world. Ginger is a natural anti-emetic, often used to alleviated nausea and vomiting. In herbal pregnancy candy, ginger can; Soothe the stomach, reduce inflammation, Alleviate morning sickness symptoms, Provide quick relief from vomiting.



Figure-2: Ginger

2) **Jaggery:**

It is a non-centrifugal sugar loaded with many essential vitamins and minerals that can be moderate amounts in a pregnancy diet. It also has an antioxidants property to use in the treatment of iron deficiency and regulating blood pressure and it also has an excellent source of iron that to treatment of anemia and blood loss in pregnancy phase.



Figure-3: Jaggery

3) **Fennel:**

The fennel seed which are commonly known as Saunf in Hindi is a sweet and aromatic herb for medicinal purposes. Fennel seed is commonly used for the treatment of nausea and morning sickness that is common in the first trimester of pregnancy. It has anti-flatulent property which help in the relaxation of intestinal muscles.



Figure-4: Fennel

4) Amla:

According to Ayurveda amla or the Indian gooseberry, has an inevitable role throughout the pregnant period of a woman. Its benefits are also passed to from our older generations. It is the main ingredients of many of the Ayurveda medicines like chyavanprasharishta, choornas, etc.



Figure-5: Amla

5) Liquorice (Mulethi):

The active constituent of liquorice, also known as liquorice, is a compound called glycyrrhizin (or glycyrrhizic acid). Glycyrrhizin is a natural sweetener and is responsible for the characteristic flavor of liquorice root. The structure of glycyrrhizin is quite complex and consists of a triterpene backbone with a glucuronic acid unit attached.



Figure-6: Liquorice

6) Ajwain:

Ajwain also known as carom seeds, is a medicinal herb that has been used for centuries in traditional Indian medicines. It is also known for its unique taste and strong aroma, which adds depth and flavor to various dishes. Ajwain seeds are small, oval-shaped have a brownish color. They are often used in small quantities because of their intense flavor and aromatic quantities.



Figure-7: Ajwain

7) Cardamom:

Green cardamom, scientifically known as Elettaria Cardamom, is a spice native to the Indian subcontinent and is widely used in cuisines around the world. Known for its aromatic flavor and pleasant scent, it is a staple in both savory and sweet dishes.



Figure-8: Cardamom

MATERIAL AND METHOD:

The selection of material in the preparation of candy is almost used herbal constituents. The material used in the aromatic herbal agent for their flavor and their extraction.

Table 1: Ingredients List.

Sr. no.	Ingredient	Biological name	Family	Quantity	Properties
1	Ginger	Zingiber Officinale	Zingiberaceae	2.5gm	Anti-emetic
2	Fennel	Foeniculum vulgare	Apiaceae	2gm	Fight nausea
3	Jaggery	Saccharum officinarum	Poaceae	30gm	Boost Immunity
4	Amla	Phyllanthus emblica	Phyllanthaceae	3gm	Antioxidant
5	Mulethi	Glycyrrhiza glabra	Fabaceae	1.5ml	Anti-inflammatory
6	Ajwain	Trachyspermum ammi	Apiaceae	3gm	Digestive aid
7	Cardamom	Elettaria cardamomum	Zingiberaceae	1.2ml	Flavouring agent

Procedure for making candy-(Methodology)

- Select all herbal(aromatic) agent like- ginger, fennel, cardamom, ajwain, other ingredients.



- Then extraction of cardamom, mulethi extracted their volatile oil.
- Weight the all ingredients.
- Heat the jaggery until it comes to a boil.
- If a drop of jaggery solution crystalizes in water, stop boiling otherwise, it continues the process.
- After heating process the all- external volatile oil mix according their requirement and taste.



Figure-9: Heating the Jaggery and Addition of Extracted Oil

- Mix all other ingredients according their required quantity.
- Then spread the prepared mixture on tray and cooled it.
- After the cooling process, transfer into moulding process the shape of candy is given.



Figure-9: Moulding process

Extraction of Mulethi:

Bioactive compound can be extracted from the mulethi using soxhlet and maceration.



Figure-10: Extraction of mulethi

Extraction of cardamom:

Cardamom essential oil is extracted from the seed of cardamom plant; the oil is topically obtained through hydro distillation.



Figure-1: Extraction of Cardamom

Evaluation:

- **Appearance:** The general appearance of candy is visual identity and its essential for consumer, acceptance for the control of uniformity, the aspect of visual experience by which object are recognized.
- **Hardness:** The resistance of a material to localized plastic deformation caused by mechanical indentation or abrasion. Hardness is a measure of how much a material resists changes in shape.

- **Thickness:** The amount of ingredient used in the preparation of individual material, and it become thick due to material used and it also known as the diameter and the length of any material.
- **Weight variation:** It is nothing but a defect in which weight differs for the define range given by the standard pharmacopoeias. It is important to confirm uniformity of dosage unit and product safety.
- **Friability:** The tendency of a solid substance to break into smaller piece under stresses or contract, specially by rubbing. It is important for determination of shock absorber for any substance and material.
- **Dissolution:** The process in which a substance forms a solution, the dissolution of drug is important for bioavailability and therapeutic effectiveness.
- **Moisture content:** It is quantity of water or moisture contained in a material, the weight of water contained in a certain object or material.
- **Drug content uniformity:** The content uniformity is an important quantity measure of the final solid dosage form product. It is tested to measure the individual drug content require amount of API.

RESULT AND DISCUSSION

Appearance

The appearance of candy is simple and it is easier for consumer acceptance. The quality or state being thick.

Table-2 : Physical appearance test

Sr.no.	Parameter	Result
1	Colour	Brown
2	Flavour	Sweet

3	Shape	Spherical(round)
4	Consistency	Solid

Hardness

The hardness of candy also depends on the temperature.

Table-3 :Comparison of hardness with different sample

Sr. No.	Sample	Hardness (N)	Temperature
1	1	650	61
2	2	615	58
3	3	750	53
4	4	805	50
5	Average	765	55



Figure-12: Hardness of candy

Thickness

Thickness may be vary according to their shape and size. Thickness is the one of the important parameter of any type of candy.

Table-4: The amount of candy have decide the thickness

Sr. no.	Sample	Thickness
1	1	4.8 mm
2	2	4.5mm
3	3	5.2mm
4	4	5.6mm
5	Average	5mm



Figure-13: Thickness of candy

Weight Variation

The candy preparation there will be slight variation in weight and size. Not more than 1 to 2% variation in the weight.

Table-5: Some variation in the sample

Sample	Weight Variation
1	5.2gm
2	5.3gm
3	5.4gm

Friability

Candies that do not lose more than 0.5 to 1% of their weight are acceptable.

Table-6: The friability test of the sample

Sample	Initial weight	Final weight	Friability (%)
1	4.9gm	4.7gm	0.70%
2	5.2gm	5gm	0.76%
3	5.4gm	5.3gm	0.28%



Figure-14: Friability test of candy



Figure-15: Final product

CONCLUSION

The use of herbal candy in the pregnancy phase helping to reduce nausea, vomiting and morning sickness. Herbal candy is very beneficial for both mother and fetus because there is no use of excessive chemical constituent. Herb material are jaggery, ginger, fennel, amla, ajwain, and cardamom for flavour. Using volatile oil of all extracted herbal drug by the help of Soxhlet apparatus. The candy have anti-emetic, anti-nauseas, and support digestive management property which help into reduce the morning sickness.

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