HERBAL CANDY COMPOSITION FROM LAGUNDI (*Vitex negundo)*, OREGANO (*Origanum vulgare*), AND GINGER (*Zingiber officinale*)

TECHNICAL FIELD OF THE UTILITY MODEL

The present utility model relates to confectionery foodstuff and more particularly to herbal confectionery made from lagundi (*Vitex negundo*), oregano (*Origanum vulgare*), and ginger (*Zingiber officinale*) extracts.

BACKGROUND OF THE UTILITY MODEL

Most of the commercially available lozenges refresh the mouth and the breath, similar to mints, while offering a pleasant flavor. Additionally, their benefits go beyond which cover different properties, such us, antimicrobial, antiseptic, anti-inflammatory, and antibacterial, all of which can help cure sore throats, colds and coughs. However, most of which are synthetically made with addition of fruit flavours.

In the Philippines, lagundi, oregano and ginger are one of herbal plants used for medication that contains anti-inflammatory, anti-bacterial, anti- oxidant and antimicrobial properties that is generally used for the treatment of coughs, asthma symptoms, and other respiratory problems.

Lagundi (*V. negundo*) is a large native shrub that grows mostly in the Philippine and is traditionally used as herbal medicine with a number of therapeutic values according to Philippine Department of Health and other Philippine based scientist which concentrated on its use to ease respiratory complaints.It is generally used for the treatment of coughs, asthma symptoms, and other respiratory problems as it have pesticidal, antifungal and antibacterial properties (Gracilla, D., et. al., 2017). It is also known for its analgesic effect that helps alleviate pain and discomfort (Gottschling, I., 2016).

Oregano (O. *vulgare*) is an herb well known for its culinary importance as well as for its medicinal functions such as treatments for asthma, cramping, diarrhea, and indigestion (Singletary, 2010). It also contains several compounds responsible for its anti-inflammatory, anti-bacterial, anti-oxidant, anti-fungal and anti-viral properties. (Philippine Herbal Medicine, 2015-2018). The effective concentrations of oregano ranged from 0.4 to 4000 µg/mL (Williams and Wilkins, 2010).

Ginger (*Z. officinale*) is a perennial herb which promotes the release of bile from the gall bladder, decrease joint pain from arthritis, may have blood thinning and cholesterol lowering properties and may be useful for the treatment of heart diseases and lungs diseases (Kuschener and Stark, 2003). Ginger and its constituents show antioxidant activity and prevent the damage of macromolecules, caused by the free radicals/oxidative stress. Also, ginger shows anti-inflammatory properties and also acts as an antitumor via

modulation of genetic pathways such as activation tumour suppressor gene, modulation of apoptosis and inhibition of Vascular Endothelial Growth Factor (VEGF). An earlier study has shown that terpenoids, constituents of ginger, can induce apoptosis in endometrial cancer cells through the activation of the p53 protein. Ginger also shows antimicrobial and other biological activities due to gingerol and paradol, shogaols and zingerone. An important finding showed that 10% ethanolic ginger extract was found to possess antimicrobial potential against pathogens (Rahmani et al., 2014).

Several patent literatures include numerous patents disclosing the composition and preparation of candy from selected herbs and from fruit juices:

WO2006067600A2 discloses a formulation for a cough lozenge from a different set of herbal extracts. Another patent, CZ32243U1, discloses an herbal confectionery composition with fresh herbs or essential herbal oil mixed with sugar and fruit juices. Patent PH20016000996U1 relates to the composition and a process for making candy from lagundi extract. Still another patent, HK1081813A1, discloses the preparation of herbal extracts and their incorporation with Stevia extract as sweetener in the formulation of confectionery. Also, KR20050059892A discloses a preparation of herbal confectionery using herbal medicine powder with fruit juice extracts.

The presented prior arts offer several notable innovations but they still leave some limitations such as: the use of different herbs other than from the present utility model and the use of different ratios in the formulation. The present utility model has been made to utilize lagundi, oregano, and ginger into an herbal confectionery that offers a multitude of health benefits. These three herbs are known for their anti-inflammatory, antioxidant and antimicrobial properties that generally aid in the treatment of coughs, asthma symptoms, and other respiratory problems. With the combined formulation, it is believed to have greater health benefits.

In view of the lack of specificity of the lozenges, cough drops and the like available, it is therefore an objective of the present utility model to introduce a composition for producing a herbal candy using lagundi, oregano, and ginger extracts as base ingredients, intended for the relief of sore throat, coughs, colds and other respiratory infections. Another objective is to provide a herbal confectionery which is effective and affordable. Still an object is to produce herbal confectionery which is organoleptically acceptable in terms of: color, flavor, texture(mouth feel), odor, and overall acceptability.

These and other advantages will be apparent from the following detailed description and appended claims.

SUMMARY OF UTILITY MODEL

The present utility model discloses a composition for a herbal confectionery comprising lagundi extract (18.4-20.2%); 2) oregano extract (13.9-15.2%); 3) ginger extract (3.2-11.6%); 4) sugar (26.2-28.7%); 5) water (13.9-15.2%); 6) corn syrup (13.9-15.2%); 7) flavoring agent (1.8-2.0%); and 8) peppermint (0.2%). The flavoring is selected from a group consisting of vanilla, chocolate, or fruit or citrus flavors and mixture thereof.

The combination of the herbal extracts in the confectionery formulation offers anti-inflammatory, antibacterial, antioxidant, and antimicrobial properties that aid in the relief of cough, sore throat, colds, and other respiratory conditions. It also provides an alternative to synthetically formulated cough lozenges.

DETAILED DESCRIPTION OF THE UTILITY MODEL

The present utility model comprises of the following herbal extracts as the main ingredients: 1) lagundi (*Vitex negundo*) extract; 2) oregano (*Origanum vulgare*) extract; and 3) ginger (*Zingiber officinale*) extract. These herbal extracts are combined to provide enhanced therapeutic effects, particularly in relieving respiratory conditions such as cough, colds, sore throat, and related ailments.

Other ingredients to form the confectionery which are already known in the art are mentioned below.

- Refined white sugar is the main ingredient of any confectionery food stuff. The sugar used is commercially available.
- Water is used in the formulation to obtain desirable texture of the confectionery product.
- Corn syrup is primarily glucose and is derived from the partial hydrolysis of cornstarch. The main function of this ingredient is to keep sucrose from re-crystallization to obtain better texture. Commercially available corn syrup was used in the formulation.
- Vanilla extract are use not only as flavoring but as a flavor enhancer. Commercially available corn syrup was used in the formulation.
- Peppermint extract is commonly used to relieve symptoms of cold, flu and other respiratory infection. It has an anti-inflammatory property that is used to treat arthritis and rheumatism. Commercially available peppermint extract was used in the formulation.

The formulation of the present utility model comprises the following:

lagundi extract	18.4-20.2%
oregano extract	13.9-15.2%
ginger extract	3.2-11.6%
sugar	26.2-28.7%
water	13.9-15.2%
corn syrup	13.9-15.2%
flavoring (such as vanilla extract)	1.8-2.0%
peppermint	0.2%

The utility model may be further understood through the following example, which illustrates a preferred embodiment of the formulation. It is understood that this example is provided for illustrative purposes only and does not limit the scope of the claims.

Embodiment:

lagundi extract	19.0%
oregano extract	14.4%
ginger extract	8.9%
sugar	27.0%
water	14.3%
corn syrup	14.3%
vanilla extract (flavoring agent)	1.9%
peppermint	0.2%
Total	100%

The process of making the herbal candy comprises the following steps:

(a) preparing the herbal extracts:

200 g each of fresh lagundi and oregano leaves and ginger are gathered and washed thoroughly with water to remove surface dust. Excess water is drained. The lagundi and oregano leaves are blanched in 170 g of boiling water separately for one minute and immediately dipped in cold water bath for 15 seconds. The leaves are drained and blended separately, each using half of the water used in the blanching. Meanwhile, the outer skin layer of the ginger is removed and the ginger is cut into pieces and then blended. Each blended ingredient is filtered and the filtrate is used in the formulation of the herbal candy;

(b) Weighing of all ingredients and, except for the herbal extracts and peppermint, boiling the ingredients in a saucepan for 20 minutes at 250˚F - 300˚F;

(c) Adding the herbal extracts and peppermint prior to removal from heat and then thoroughly mixing to ensure uniform distribution with further heating until a viscous mass is formed, having a consistency corresponding to the firm-ball stage, as determined by standard confectionery testing methods; and

(d) Placing the mixture in a candy molder, cooling to ambient temperature, and subsequently wrapping with candy wrapper.

The herbal candy produced by this utility model exhibits defined sensory acceptability, characterized by an organoleptically acceptable product based on consumer preference tests.