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Research Article

Formulation And Evaluation Of Haemoglobin Booster Herbal Chocolate

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ABSTRACT

The objective of this research study is to design and fabricate herbal chocolate. The chocolate is most loving food of children where as the medicine is hating substance. It is also called as chocolate drug delivery. The essential target of this study was to formulate and evaluate natural nutritious chocolate as a immunity as well as hemoglobin boost in pediatric patient. In this Present study was to make to get ready chocolate plan of polyhedral ingredients such as Beet root, Pomegranates, Tomato, Moringa and Tulsi and which enhance the hemoglobin and immune power also used in stress and insulin management. Chocolate is a range of products derived from cocoa (cacao), mixed with fat and honey to produce a solid confectionery. The medicated chocolate formulation is widely used for hemoglobin boost and increases patient compliance. The prepared chocolate formulations were evaluated for general appearance, Ph and stability and blooming tests and also shows good drug release properties. The chocolate is most loving food of children where as the medicine is hating substance. So, objective of present study was to formulate the chocolate that contain drug i.e., medicated chocolate to prevent the disease.

INTRODUCTION

Hemoglobin causes diseases such as Asthma, Anemia, Diabetes, type 1, Immunodeficiency with hyper-IgM, the body can't make enough hemoglobin for red blood cells. Pregnant people can get this type of anemia if they don't take iron supplements. Blood loss also can cause it. Blood loss might be from heavy menstrual bleeding, an ulcer, cancer or regular use of some pain relievers,

especially aspirin. Herbal formulations of hemoglobin booster chocolate contain an active substance or herbal substance or herbal preparation or herbal substance in combination with one or more herbal preparations. This Cocoa and chocolate products have been used as medicine in many cultures for centuries for their health benefits. Chocolate is a preparation of

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roasted and ground cacao seeds that is made in the form of a liquid, paste, or in a block, which may also be used as a flavoring ingredient in other foods. There are three main types of chocolate: white chocolate, milk chocolate, and dark chocolate. Style made of cocoa butter, it is useful in cardiovascular disease, cognition, stress, mood, Chocolate's energy boosting power and also the hemoglobin level increase. Chocolate is adaptable food that can be combined to create completely different taste and texture sensations. Also, chocolate is an anhydrous medium that resist microbial growth and to hydrolysis of water-sensitive active agents. Chocolate abundantly contains compounds such as saturated fat, polyphenols, sterols, di and triterpenes, aliphatic alcohols, and methylxanthines.[1] Phenyl ethylamine that naturally occurs in the brain and it is termed as 'the love drug' which produces the feeling of well-being and contentment. Phenyl

ethylamine also present in chocolate that raises blood pressure, also blood sugar level that gives the feeling of wellness.[2] There are five basic human taste i.e., sweet, sour, bitter, salty, savory. Sweet taste is one of the most pleasurable senses. The goal of the sweet taste is to detect the highly calorific saccharides for ingestion.[3] Medicated chocolate is prepared by using chocolate base and the drug is incorporated into prepared chocolate base. As the drug is incorporated within the chocolate and the drug is released from the chocolate, it is called as Chocolate drug delivery system.[4] It is a best drug delivery system specifically for children. The aim of the present study was to prepare Pediatric Herbal Chocolate. Furthermore, to evaluate the physiochemical parameters of the prepared formulations so that they can be further standardized and used commercially.

MATERIALS AND METHOD: -

Ocimum sanctum (Tulsi), Beet root, pomegranates, Tomato, Moringa, Chocolate Base (Amul), Honey, vanillin.

Formulation table: -

Sr.no	Ingredients	F1 (ml)	F2 (ml)	F3 (ml)	F4 (ml)	F5 (ml)
01	Beet root	3	2	1.5	1	0.5
02	pomegranates	2	3	1.5	1.5	1
03	Honey	1	1.5	1.5	3	2.5
04	Tomato	1	1.5	1.5	2	3
05	Moringa	2	1.5	1	0.5	1
06	Tulsi	1	0.5	3	2	2
07	vanillin	Q.S	Q.S	Q.S	Q.S	Q.S
08	Cocoa butter	Q.S	Q.S	Q.S	Q.S	Q.S
09	Chocolate base	Q.S	Q.S	Q.S	Q.S	Q.S

Herbal chocolate formulation (F4) image:-



Final formulation (F4) without moulds image:-



METHOD: -

Weigh accurately all the ingredients.

In one beaker, take cocoa powder and honey and mix properly.

In another beaker, melt dark chocolate cocoa butter and this melted buyer are added in a powder mixture and mix it properly to get fine consistency. Finally measure accurately the herbal drug extract and added in above prepared chocolate.

Then add vanillin as a flavoring agent before going to set in moulds.

Then the prepared chocolate containing herbal drug extract was poured in moulds and kept in freeze to set overnight.

Total 5 formulations were prepared by varying the concentration of herbal drug extract used, while the concentration of excipients was kept constant.

Evaluation of herbal chocolate:

Organoleptic characters: -

These are sensory properties. Those that can be detected by sense organs, for foods it is used particularly of the combination of taste, texture, astringency and aroma (Perceived in the nose).

PH Test: -

2gm of prepared chocolate was dissolved in 100ml of phosphate buffer solution and pH of the resulted solution was studied by digital pH meter with glass electrode.

Hardness test: -

Hardness of chocolate was measured by Monsanto Hardness Tester. Monsanto Hardness Tester or Pfizer Hardness Tester are used to determine how much Force is required to break the tablet. Kg/cm² is the unit of Measurement. To accomplish so, we must randomly select a number of medicated chocolates from each batch, determine their hardness, and calculate the mean.

Blooming test: -

Fat Bloom -

Bloom is a test to measure the strength of a chocolate. The test determines the weight in grams needed by a specified plunger to depress the surface of chocolate without breaking it at a specified temperature. Chocolate is stable when exposed to various temperatures. When the thin layer of fat crystals form on the surface of chocolate formulation. This will cause the chocolate to lose its gloss and a soft white layer will appear, giving the finished article an unappetizing look. Fat bloom is caused by the recrystallization of fat and/or a migration of a filling fat to the chocolate layer. Storage at a constant temperature will delay the appearance of fat bloom.

Sugar bloom –

This is rough and irregular layer on top of chocolate formulation. This is caused by condensation (when chocolate is taken out of the

refrigerator). This moisture will dissolve the sugar in the chocolate. When the water evaporates, sugar recrystallizes into rough, irregular crystals on surface. This results into unpleasant look.

RESULT & DISCUSSION: -

Parameter	F1	F2	F3	F4	F5
Color	Light brown	Light brown	Brown	Brown	Dark brown
Oduor	Sweet woody	Sweet chocolate	Sweet honey	Chocolaty	Pleasant
Taste	Slight sweet	Slightly sweet, acrid	Slightly sweet, bitter	Sweet	Slight sweet
Mouth feel	Smooth and pleasant	Smooth and pleasant	Smooth and pleasant	Smooth and Pleasant	Smooth and pleasant
Appearance	Glossy	Dull	Dull	Glossy	Dull

PH of chocolate formulation: -

Formulation code	F1	F2	F3	F4	F5
pH	6.9	6.7	6.4	6.5	6.5

Hardness Test: - F4 - 0.3 Kg/cm²

Blooming Test: No blooming was observed in formulation.

CONCLUSION: -

In the present study, we formulated herbal chocolate having hemoglobin booster activity with natural ingredients. This chocolate was formulated with herbal ingredients like beet root, pomegranates, tomato, honey, Tulsi, moringa leaves and contain the active Constituents of betaxanthin, calcium and iron along with protein, carbohydrates and fiber, vitamin-C, Lycopene vitamin A, vitamin C, iron (Fe), and vitamin B12, vitamins A, C and K and minerals like calcium, magnesium, phosphorus, iron and potassium, myricetin, quercetin, kaempferol, isorhamnetin, or rutin, as well as phenolic acids. They are used to treat anaemia disease, Diabetes, etc. These chocolates are easily chewable and palatable. The evaluation studies were satisfactory, out of five formulations; F4 formulation has shown better results when compared with other 3 formulations.

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