



Formulation and evaluation of herbal energy bar

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Abstract

Herbal energy bars were samples prepared with dry fruits like almond, cashew nuts, peanuts and drumstick to deliver nutritious food to the consumer. Various dry fruits and drumstick are being used to attract the people to different age groups to compensate their calorie, protein, vitamin, mineral i.e. nutritional requirements. The developed energy bars were evaluated for textural, colour, nutritional quality and total microbial load. Energy bars are supplemental bars containing dry fruits and other high energy food targeted to people that require quick energy but do not have time to eat. Nowadays, almost all people eat junk food or packaged chips. Healthiest food is so expensive and not easily accessible. This issue observed we have developed energy bars which are not only healthy and nutritious but also delicious. The product is made carefully by using all natural ingredients. Drumstick is the major source of vitamin. Herbal energy bars are totally made from all natural ingredients like drumstick, stevia, honey etc. They fulfill all the requirements which are needed for energy production. Some people do not have enough time to make a mini meal due to work. So, herbal energy bars are useful to those people. Also, almost all children prefer chocolate, Cadbury. But chocolate, Cadbury show various types of diseases like diabetes mellitus, blood pressure, obesity etc. So that to overcome those problems, herbal energy bars are proffered.

Keywords: herbal, chocolate

Introduction

Herbal energy bars contain a balanced amount of essential nutrients required for the human body such as carbohydrate, protein, mineral, vitamin and fibre. This is why energy bars are useful to fill the nutritional gaps which people miss out on their daily diet. The concept of energy bars was created by the Pilsbury Company in 1960 in America as space food sticks. These energy bars are good for occasional use and provide more energy than normal food. They provide instant energy when it is required.

In order to provide energy quickly, we should intake that type of food where the nutritional part of food is directly absorbed by reducing the metabolism step in our body function. In our body, the food which we intake has several functions of digestion and absorption of nutritional components.

Herbal energy bars are a type of food which are more easily digestible and so fast process to absorb nutrition and provide instant energy.

Advantage of Herbal Energy Bar

1. Herbal energy bars provide a balanced amount of essential nutrients which is required for humans such as carbohydrate, protein, vitamin, mineral etc.
2. No cholesterol and fat are present.
3. Herbal energy bars are useful to fill the nutritional gaps which people miss out on their daily diet.

Disadvantage of Herbal Energy Bar

1. Excessive consumption of this energy bar is not good for our health.

Classification of Energy Bar

There are four different classes of energy bars

1. Carbohydrate bar
2. Protein bar

3. Diet / Weight loss bar
4. Meal replacement bar

Benefits of Energy Bar

1. Instant energy
2. Easy to carry
3. Long shelf life

Instant Energy

One of the main reasons why one chooses to have energy bars is that they help to boost your energy level and help to perform much better. There are different types of energy bars available today and it is crucial to select the right one to avoid calorie intake.

Easy to Carry

The most beneficial point in consuming energy bars is that you can carry them wherever you go simply by keeping them in your pocket, purse and also bags. As most energy bars are made with wholesome nutrients, they are better than unhealthy junk.

Long Shelf Life

All energy bars have a longer shelf life which, when compared to ordinary food, can be packed while one is on the move.

Literature Survey

Author Name

1. Susan Ahrens
2. Karen Lapsley
3. Shridhar Sathe

Summary

Three marketing varieties of almond; Carmel, Mission and Nonpareils; were analyzed for proximate composition and

protein nutritive quality. Moisture, lipid, protein, ash, sugar and tannin range were 3.05 – 4.33%, 43.37 – 47.50%, 20.68- 23.30%, 3.74-4.56%, 5.35-7.45% and 0.12-0.18 % respectively. No detectable hemagglutinating and trypsin inhibitory activities were present in Carmel, mission and non pareil almond.

2. Author Name

1. J. Aregic
2. Muhmmad Nadeem
3. Sarfraz Hussair

Summary

This study was carried out at Institute of Food Science and Nutrition, University of Sargodha, Pakistan during 2012. The objective of this study was to develop an easy to digest, instantly low cost and stable nutribar for IDPs of humatarian emergencies. Nutri bar were developed from different ratios

Need & Objective

1. Need

Modern life is stressful and also people are in busy in their work. So some people do not having enough time for make mini meal due to work, hence herbal energy bar is very useful to those people.

Also most of children preffer chocolate, cadburry than meal. But due to this chocolate, cadburry show different disease like diabetes mellitus, blood pressure, obesity etc. So to overcome this issue, herbal energy bar is very useful.

2. Objective

- To fulfil all the requirements which are used in human body.
- To provide nutrition.
- To prevent the disease like obesity, blood pressure and diabetes mellitus etc.

Ingradients Profile

1. Drum Stick

Biological name – *Moringa oleifera*

Family – Moringaceae

Chemical Constituents

1. Vitamin A
2. Protein
3. Fibre
4. Amino acid
5. Nicotinic acid



Fig 1: Drum stick powder

Different Species of drum stick

1. *Moringa oleifera*
2. *Moringa pterigosperma*
3. *Moringa Arborea*
4. *Moringa Borziana*
5. *Moringa concanensis*

2. Almond

Biological source – Almond *Prunus*

Family – Rosaceae

Chemical constituents –

1. Fixed oil (40- 55%)
2. Protein (20%)
3. Mucilage
4. Emulsin
5. Cyanogenelic glycoside amygdalin (2.5-4%)



Fig 2: Almond

One ounce provides about 165 calorie, 6 grams protein, 14 grams fat (80% monosaturated, 15% polyunsaturated and 5% saturated) 6 grams carbohydrate and 3 grams fibre.

3. Cashew Nuts

Biological source – *Anacardium Occidentale*

Family – Anacardium

Chemical constituents

1. Anacardic acid
2. Cardanol
3. Cardol
4. 2 methyl cardol

Apart from these nutrients, it is rich in several mineral and healthy compounds. Cashew is a rich source of vitamin B and C. They are also great source of protein and unsaturated fats. Cashew nuts is mainly used for energy production, brain health and immunity.

4. Stevia

Biological source – Stevia Rebaudiana

Family – Asteraceae

Chemical constituents –

1. Steviol
2. Stevioside
3. Rebaudioside
4. Phenylpropanoid

5. Chocolate

Chocolate contain 70% cocoa. Chocolate is a favourite compound for all ages, especially children and also it has beneficial factor in terms of health concern. It is highly rich in antioxidants and has cardiovascular benefits. Cocoa derived product and chocolate has suggested to play an important role I. Various of severe disease due to its high flavonol containing compound. It contain high calories approximately in range of 225-328 kcal.

6. Honey

Biological source – APIs mellifera

Family – Apidea

Honey can be used as natural sweetener. Valuable traces of enzymes, vitamin and mineral are also found in honey in small amounts.

The nutritional value of 50 gm of honey are as follows –

- 152 calories
- 42=2 gm of carbohydrate
- 0.15 gm of protein

Honey is a high quality carbohydrate that is easily absorbed by the body. That's because dextrose and fructose, two sugar that are contained in honey in high amounts, go straight into the blood stream without putting a strain on the digestive system.

7. Milk Powder

Powdered milk is milk that's been pasteurized and then dried via evaporation. Various types of milk including skim milk, whole milk and even non dairy milks, are available in powdered form. Powdered milk is primarily used as an ingredient in infant formula and also candies.

Milk provide bone building nutrient such as protein, calcium, vitamin D and vitamin A. Powdered milk is a source of protein may be added to recipes to increase the amount of protein and energy (especially for people with health condition that need extra protein).

Type of Milk Powder:

- Skimmed milk powder
- Whole milk powder

8. Sorbitol

Sorbitol is a type of carbohydrate called a sugar alcohol or polysorbitol contain about one third fewer calories than sugar and is 60% as sweet. Sorbitol occurs naturally in a variety of berries and fruits. E.g. apples and blackberries.

Sorbitol is most commonly found in fruits like apple, apricots, avocado, blackberries, cherries, pears, plums and prunes.

9. Glycerin

Glycerin is a simple triol compound. It is colourless, odorless, viscous liquid that is sweet tasting and non-toxic. The glycerin is backbone is found in lipid known as glycerides.

We usually glycerin from plant and animal source where it is found in the form of triglycerides, ester of glycerin with long chain of carboxylic acids.

Glycerin has approximately 27 kilocalories per teaspoon as a sugar substitutes. Sugar has 20 kilocalories and 60 % as sweet as sucrose. Therefore glycerin is a great sugar substitutes.

10. Cocoa Powder

Cocoa powder is an unsweetened chocolate product, add deep chocolate flavour to dessert and beverage. Cocoa powder occurs when the fat, called cocoa butter, gets removed from the cocoa beans during processing.

Cocoa powder is rich in theobromine, which can protect from different diseases such as heart disease, diabetes etc.

Since, cocoa is rich in phytonutrient but low on fat and sugar, the calories you get from cocoa powder will be

Plan of Work

1. Literature Survey

Literature Survey was carried out by Google search, books etc.

2. Collection of Raw Materials

All the natural materials are used in present study i.e. Drum stick, honey, almond, cashew Nuts, stevia were purchased from the market.

3. Method of Data Collection

Data on the formulation and evaluation of herbal energy bar will be collected from various standard journals and other sources Like research literature database such as Research Gates, Google Scholar etc.

Plan of Work

Table 1

Sr. No.	Activity	Tentative Time
1.	Literature survey	1 month
2.	Selection of ingredients	1 week
3.	Procurement of ingredients	1 week
4.	Experimental work	2 month
5.	Data completion, thesis writing, printing, binding	2 week

Material and Method

Table 2

Sr. No.	Ingredients
1.	Drum stick
2.	Almond powder
3.	Cashew nuts powder
4.	Peanut piece
5.	Stevia
6.	Honey
7.	Cocoa powder
8.	Milk powder
9.	Sorbitol
10.	Glycerin
11.	Distilled water

1. Method of Preparation

Weight the all required ingredients.



Take one bowl. Add the required quantity of drum stick and stevia.



Make uniform mass of these by using sorbitol as sweetening agent. Add some dried fruits like peanut, almond, and also cashew nuts etc. Also add honey, milk powder. And make shape.



Dry this preparation with the help of hot air oven or micro oven until proper drying.



Take another plate and add cocoa powder and stevia. Make paste with help of water



Make layer of cocoa paste in above dried preparation and add some dried fruits like almond, cashew nuts, peanuts etc.



Finally there is formation of Herbal Energy Bar.

Formula

Table 3

Sr. No	Ingradients	Quantity	Use	Calorie
1.	Drum stick	25 gm	Nutrition	16 kcal
2.	Almond powder	58.33 gm	Nutrition	350 kcal
3.	Cashew nut powder	47.33 gm	Nutrition	284 kcal
4.	Peanut piece	61.72 gm	Nutrition	350 kcal
5.	Stevia	25 gm	Sweetning agent	
6.	Honey	5 ml	Sweetning agent	
7.	Cocoa powder	-	Flavouring agent	
8.	Cadbury	-	Coating agent	
9.	Milk powder	10 gm	Provide calcium	
10.	Sorbitol	-	Sweetning agent	
11.	Glycerin	-	Anti adherent	

4. Formulation

Raw material gathered from home and market. The natural in gradients were shade dried, sieved, weighed accurately and mixed for evaluation of various parameter. The formulated herbal energy bar should be stored in refrigerator.

1 Herbal Energy Bar contain approximately 1000 calorie. This energy bar taken 2 times in one day.

Evaluation

Following evaluation Parameters were proffered to ensure superiority of prepared nutritious energy bar –

- Colour
- Odour
- Taste
- Appearance / Texture

1. Colour

Colour were examined by visual inspection. Colour: Brown (chocolate colour)

2. Odour / Taste

Odour and taste was found to be sweet.

3. Appearance/ Texture

Appearance was found to be smooth.

Result

In presence of study, herbal energy bar was formulated by using various nutritional supplier like dry fruits, drum stick etc. The energy bar was evaluated for the following physical parameters and was found to be satisfactory in term of colour, odour, taste and also appearance. The smell and taste of energy bar was found to be sweet. Herbal energy bar is used to those people who have not enough time to make mini meal.

These bar contain balanced amount of essential nutrients which is required for human body such as carbohydrate, protein, vitamin, mineral etc. This is why energy bar is useful to fill the nutritional gaps which people miss out their daily diet.

Conclusion

Herbal energy bar was totally made from natural ingredients like drum stick and other dry fruits like almond, cashew nuts, peanuts etc. Drum stick have nutritious activity. Drum stick contain vitamin A, amino acid and also it fill the calories requirement. This herbal energy bar fill the all calories requirement. i.e. Daily requirement of calorie in range 2000 – 2500 kcal. Herbal energy bar is very useful to those people do not have enough time to make mini meal. Also most of children preffer chocolate, Cadbury, than meal. So that this herbal energy bar provide nutrition to the children.

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