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FORMULATION AND EVALUATION OF HERBAL NUTRITIONAL TABLET FROM MORINGA OLEIFERA AND GINSENG

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Abstract: A complete nutritional formulation, full dose of natural nutritional supplements containing Moringa oleifera leaves and ginseng, both nutritionally complementary to natural foods. Methods: Basedon the study of M. oleifera leaves, the nutritional value of ginseng and the ratio of ginseng raw materialsand the selection of microcrystalline cellulose, sodium salt of carboxymethyl cellulose (CMC),magnesium stearate for M. oleifera leaves were determined. Using excipient, same factors and orthogonalresearch, selected the best formula pills prepared by powder crushing technology to prepare M. oleiferaand ginseng tablets. Results: optimal ratio of raw materials of M. oleifera powder: ginseng powder 7:3,optimal raw material for tablet making 88.5%, microcrystalline cellulose 8.0%, CMC 2.0%, magnesium stearin 1, 5%, optimal material core breaker Parameters for mesh size 200-300, size 7%, tablet pressure 40 kN. Conclusion: Through practice and process improvement, we can prepare a complete and complete diet from M. oleifera and ginseng tablets whose papery appearance, weight of various parts, hardness,friability, disintegration and other parameters meet the best requirements.

Keywords: Moringa oleifera, Ginseng, formulas.

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Introduction:

Nourishing Moringa and Ginseng Powder: Moringa oleifera is a popular blend of vitamins, minerals, and other nutrients that support your health.

Nutrients: Moringa leaves used to make Moringa powder are full of essential nutrients.

Vitamins and Minerals: Leaves provide vitamins A, B complex and C, as well as calcium, iron, magnesium and potassium.

Amino acids: They also provide all nine essential amino acids for the body. Amino acids play an important role in the growth and maintenance of your body.

Antioxidants: Moringa shines due to its high antioxidant content. It is recommended to prevent these substances, such as quercetin, chlorogenic acid, and beta-carotene, from damaging the tissues in your body.

Moringa Oleifera:

Medicinal plants have been shown to be a natural source of nutrients and medicinal substances that can assist humans in the prevention and treatment of certain diseases. Of the many plants evaluated in bioplanned research, M. oleifera, often called "quiabo-de-quina", "lírio branco" or "moringa" in some parts of the world, has been used as a table tree. or drum tree, have been effective as alternative treatments and have been effective in suppressing many diseases. Their therapeutic potential also comes from secondary metabolites, including resins, coumarins, flavonoids, alkaloids, steroids, tannins, saponins and quinones. The seeds, flowers, leaves and stems of the tree in question have been identified as one of the most valuable food sources in Africa and other countries, especially in Pakistan, the Philippines and India. The leaves of the plant can be eaten fresh or cooked, and can be stored in dry, unrefrigerated powder form for months without losing its nutritional value. In fact, M. oleifera has brought many health benefits to countries where hunger is a problem. Additionally, M. oleifera is a good plant with many medicinal properties. M. oleifera has been called the 'Miracle Tree' or 'Tree of Life' due to its abundance and economic value, including proven therapeutic potential derived from secondary of metabolites as well as essential amino acids. lysine, tryptophan, methionine, vitamins. . It also affects thyroid regulation and provides protection against oxidants. Many epidemiological studies and research data show that the plant has an antioxidant effect on many damages caused by oxidative stress. Antioxidants found in the leaves of the plant work together with the body's antioxidant system. Many studies have focused on evaluating toxicity and antioxidant enzymes resulting from treatment with M. oleifera or phytochemicals isolated from M. oleifera.

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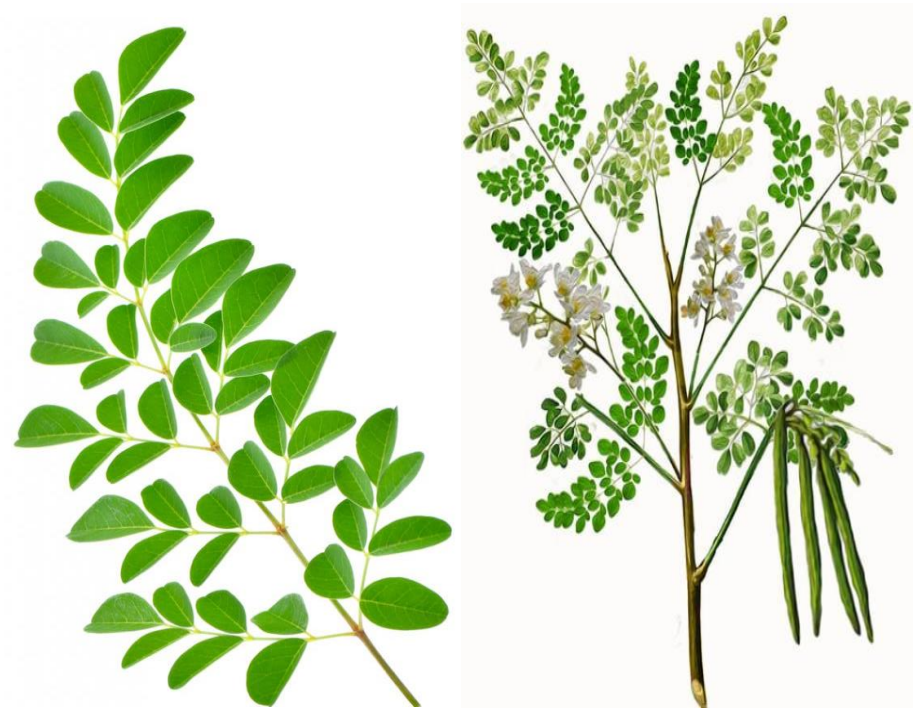


Ginseng:

The use of herbal medicines is a tradition that predates modern knowledge of medicine, pharmacy and chemistry. The World Health Organization estimates that more than 75% of the world's population still relies on herbal medicines, available from traditional healers, for primary healthcare. Herbal medicines are in high demand for primary treatment in both developed and developing countries due to their high biological and medicinal activity, safety and low cost. Panax ginseng belongs to the Araliaceae family. Panax is derived from the Latin word panacea, which refers to its history in many contexts, and tonic restorative medicine, which is widely used in Traditional Chinese Medicine (TCM) and Western herbal preparations.

Moringa and ginseng are rich in nutrients and have the health values ??of natural resources; Our research has shown that nutrients complement each other; If a complex pill is prepared by mixing moringa and ginseng in a certain amount, the type of nutrition is very wide and the exact

balance of nutrients is achieved. At the same time, due to environmental constraints and climatic conditions, the production of good ginseng is limited to and its prices are high, while moringa is adaptable to tropical and subtropical regions and products derived from biomass and its price is low. Preparing nutritional tablets from M. oleifera and ginseng is low in cost and easy to stimulate because these two biological systems are very valuable and beneficial to human health. Moringa oleifera is a very nutritious plant full of vitamins, minerals, antioxidants and amino acids. The herb has health benefits: reduces inflammation, improves digestion, and supports heart health. Moringa powder can help control diabetes, protect the liver and maintain immunity. Some research suggests that moringa may have anticancer properties and protect against arsenic toxicity. It is important to consult a healthcare professional before taking Moringa supplements because side effects and side effects may occur in some people.

Moringa oleifera, commonly known as drum tree or castor tree, grows quickly and can tolerate dry conditions well. This plant is native to India and has received much attention due to its health benefits and high nutritional value. In fact, it has been used in traditional medicine for many years. In this article, we will explore the nutritional benefits of moringa powder. We will also explore what the science says about the health benefits and possible side effects of this supplement. Finally you will have a complete idea of how to use moringa. Let's start now.

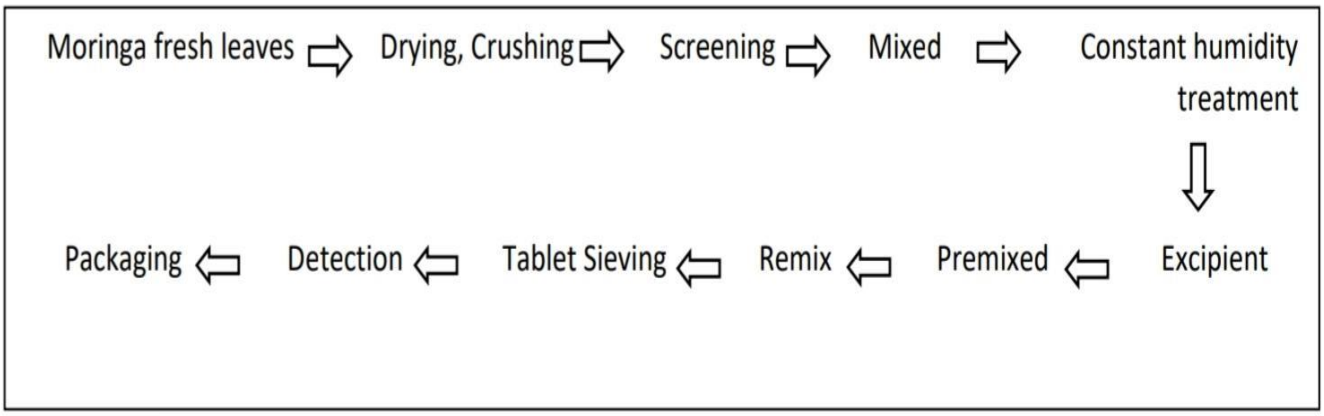
Materials and methods:

Materials:

Biological material M. oleifera Lam.PKM-1: Fresh leaves were collected according to the biological characteristics of cultivation technology in the dry-hot valley of Panzhihua city. Ginseng Platensis: It is grown in Chenghai Lake of Lijiang in Yunnan. Main equipment and reagents Main equipment: electric drying oven, ultra-fine grinding equipment, vibration testing machine, mixing machine, constant temperature and room tempegrindin electronic equipment weighing equipment, friviness test, intellectual destruction test and tablet machine. Reagents: microcrystalline cellulose (food grade), magnesium stearate (food grade), sodium carboxymethylcellulose (food grade). **Method:**

Production process Production process of nutritional tablet from M. oleifera and ginseng. **Processing Activities:**

1. After collecting the new Moringa leaves, remove the yellow leaves and rotten leaves, cut off the long petioles and leave the leaf to dry in an oven at 60°C for 8-12 hours.
2. Dried leaves of moringa and ginseng should be crushed by themselves, using a vibrating screen to control raw materials of different sizes, and then mixed according to the ratio.
3. To ensure a homogeneous mixture, first pre-mix 15-20% of the raw materials and release within 5 minutes; After the first mixing, place the remaining materials mixed within 5 minutes, after the second time -45 mixing, the homogeneity of the sample can be confirmed.



Tablet is punched by using following formulas: Each tablet of 250 mg

Ingredient	F1	F2	F3	F4
Moringa Oleifera	176 mg	176 mg	176 mg	176 mg
Ginseng	5mg	5mg	5mg	5mg
Gelatin	1.50 mg	8.74 mg	-	-
PVP (Polyvinyl Phosphate)	-	-	1.76 mg	5.50 mg
Starch	18.26 mg	18.26 mg	22.65 mg	18.26 mg
Lactose	45.28 mg	38.05 mg	40.60 mg	41.10 mg
Sodium lauryl sulfate	1.25 mg	1.25 mg	1.25 mg	1.25 mg
Talc	0.25 mg	0.25 mg	0.25 mg	0.25 mg
Magnesium stearate	2.5 mg	2.5 mg	2.5 mg	2.5 mg
Total	250 mg	250 mg	250 mg	250 mg

PRECOMPRESSION STUDY:

A. Flow

B. Bulk Density

C. Tap Density-

D. D. Hausners Ratio-

A. Flow Property of Powder-

1. For F1

Tan Θ = Height / Radius

$\Theta = \tan^{-1} 1.45/2.5$

$\Theta = 30^0 16'$

2. For F2

Tan Θ = Height / Radius

$\Theta = \tan^{-1} 1.40/2.30$

$\Theta = 30^0 96'$

3. For F3

Tan Θ = Height / Radius

Θ = tan -1 1.30/2.50

$\Theta = 27^0 47'$

4. For F4

Tan Θ = Height / Radius

$\Theta = \tan^{-1} 1.30/2.55$

$\Theta = 26^0 56'$

Higher the angle of repose lower the flow rate hence here F3 & F4 have low angle of repose and greater flow rate.

B. Bulk Density

For F1,

Bulk Density = Mass/volume

= 10 gm/15ml

= 0.66 gm/ml

For F2,

Bulk Density = Mass/volume

= 10 gm / 14.90 ml

= 0.67 gm/ml

For F3,

Bulk Density = Mass/volume

= 10 gm / 15.20 ml

= 0.65 gm/ml

For F4,

Bulk Density = Mass/volume

= 10 gm /15 ml

= 0.66 gm/ml

C. Tap Density

For F1,

Tap Density = Mass/Tapped volume

= 10 gm/ 9ml

= 1.11 gm/ml.

For F2,

Tap Density = Mass/Tapped volume

= 10 gm/ 9.4 ml

= 1.06 gm/ml

For F3,

Tap Density = Mass/Tapped volume

= 10 gm / 9.2 ml

= 1.08 gm/ml

For F4,

Tap Density = Mass/Tapped volume

= 10 gm / 8.9 ml

= 1.12 gm / ml

D. Hausners Ratio

For F1,

Hausners Ratio = Tap Density/ Bulk Density

= 1.11/0.66

= 1.68

For F2,

Hausners Ratio = Tap Density/ Bulk Density

= 1.06/0.67

= 1.58

For F3,

Hausners Ratio = Tap Density/ Bulk Density

= 1.08 / 0.65

= 1.66

For F4,

Hausners Ratio = Tap Density/ Bulk Density

= 1.12 /0.66

= 1.69

Evaluation parameters:

I. Organoleptic evaluation –

a. Colour – Greenish in colour

b. Odour – woody-floral

c. Taste - Bitter

II. Physiochemical Evaluation –

a. Uniformity of weight -

b. Hardness -

c. Dissolution test -

B. Hardness –

For F1

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Hardness (Kg)	4.9	4.9	5.0	4.8	4.6	4.8	5.0	5.2	5.2	5.1	4.95

For F2

For F3

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Weight (Mg)	250	248	253	249	247	248	250	252	250	250	249.7

For F4

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Weight (Mg)	249	249	250	248	246	248	250	252	252	251	249.5

For F1

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Weight (Mg)	248	250	252	250	250	248	247	253	248	248	249.4

For F2

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Weight (Mg)	248	247	253	248	248	248	250	252	250	250	249.5

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Hardness (Kg)	5.0	4.8	5.3	4.9	4.8	5.2	5.0	5.2	5.0	5.0	5.02

For F3

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Hardness (Kg)	4.8	5.0	5.2	5.0	5.0	4.8	4.9	5.3	4.8	4.8	4.96

For F4

Tablet	1	2	3	4	5	6	7	8	9	10	Average
Hardness (Kg)	4.8	4.9	5.3	4.8	4.8	4.8	5.0	5.2	5.0	5.0	4.90

Dissolution test – (By using *vebbo* tablet dissolution apparatus)

For F1,
The dissolution testing employed standardized procedures to evaluate the release of bioactive compounds from Moringa oleifera and ginseng herbal tablets (designated as F1). A phosphate buffer with a pH of 6.8 mimicked the small intestine environment. Tablets were placed in a basket apparatus, maintained at 37°C, and rotated at 50 rpm for optimal mixing. The tablets took 6 hours for complete dissolution.

For F2,
The dissolution testing employed standardized procedures to evaluate the release of bioactive compounds from Moringa oleifera and ginseng herbal tablets (designated as F2). A phosphate buffer with a pH of 6.8 mimicked the small intestine environment. Tablets were placed in a basket apparatus, maintained at 37°C, and rotated at 50 rpm for optimal mixing. The tablets took 6.5 hours for complete dissolution.

For F3,
The dissolution testing employed standardized procedures to evaluate the release of bioactive compounds from Moringa oleifera and ginseng herbal tablets (designated as F3). A phosphate buffer with a pH of 6.8 mimicked the small intestine environment. The tablets were placed in a basket apparatus, maintained at 37°C, and rotated at 50 rpm for optimal mixing. The tablets took 8 hours for complete dissolution.

For F4,
The dissolution testing employed standardized procedures to evaluate the release of bioactive compounds from Moringa oleifera and ginseng herbal tablets (designated as F4). A phosphate buffer with a pH of 6.8 mimicked the small intestine environment. The tablets were placed in a basket apparatus, maintained at 37°C, and rotated at 50 rpm for optimal mixing. The tablets took 7 hours for complete dissolution.

Pharmacopoeia (2010 edition)(Government, 2010) and other relevant information by creating guidelines for the article, figure, weight sheet, various ingredients, density, frying time were measured. destruction etc.

Evaluation method:

Appears on page . Take twenty samples on a clean white plate in diffuse daylight or artificial light such as daylight and examine the photographs for color and condition. Differences in tablet weight. Take 20 samples. Weigh the entire weight accurately, find an equal weight, and weigh each piece accurately; Compare the weight of the units to the weight of the tablet units per unit and calculate the average ratio of 56.7

Hardness:
Take 20 samples, measure the hardness with a hardness meter and arrive at an average value.

Friability:
Take 20 samples, use the cutting machine to remove dust, weigh well, put the frivit test into the cylinder and rotate 100 times. Remove dust, remove it, using the same method, accurate measurements, statistics and analysis.

Disintegration Time:
Take 20 samples and put them into a smart device that decays to see the decay and calculate the average decay time.

Formulation of M. oleifera and ginseng nutritional tablets:
Comparison of ingredients between moringa leaf powder and ginseng powder There are many reports on the nutritional value of moringa leaf and ginseng (Guoliang and Yin, 2012), the most important nutrients according to the nutritional needs of each of the International Dietitians According to the recommendations of the Association in 2011, through in-depth analysis and calculations, these values ?? \u200b\u200bshow the number of people needed per day, the best basic ratio of Moringa leaf powder and ginseng flour.

In addition to the main drugs, a selection of imported products are prepared as auxiliary raw materials in Tablets. The product comes in many different types with binders, oils, lubricants, cleaning agents and water applications. Different specifications of raw materials oil processing dimensions can be combined to select different materials. The main option in this study is compounding, crushing and lubrication to increase the speed and flow of the material and break of the tablets. According to many data (Shenghui et al., 2014), use sodium carboxymethyl cellulose (0.5%, 1%, 1.5%, 2%, 2.5%) as evaluation parameters first, microcrystalline cellulose (2%, 4%) , 6) select. %, 8%, 10% and magnesium stearate (0.5%, 1%, 1.5%, 2%, 2.5%) to perform the same test. To determine the best formulations using Inter Analysis powder, the powder size of the material affects the quality of the tablets, by distributing the formulas based on the evaluation of some product properties, designing the orthogonal optimization test and scoring according to Table 1.To determine the best production method using interanalysis, Processing methods for nutritional value

Production of M. oleifera and ginseng Complex Nutritional Tablet:
When using the direct powder storage method, thepowder size of the material affects the shape of the tablet. If the powder is large, the tablets tend to appear lobed and mottled with excessive density. The size of large powder decreases, the speed of adding tablets increases, but if the size is too small, it is easy to combine when mixed with high hardness effect during table. The size range selected for an experiment is 40-80, 80-120, 120-200, 200-300, 300-500. Water containing powdery substances is also directly affected. When there is a lot of water, the flow conditions are poor and it is easy for microbes to breed, which shortens lifespan; If the moisture is too low, the tablets are soft.

It is released and cannot be completed, the density cannot meet the requirements, and the tablet speed is greatly reduced. To do a tablet test, use M. oleifera and Ginseng powder at room temperature (4%, 6%, 8%, 10%, 12%). Raw material water is controlled using room temperature, relative humidity and drying time. Production speed is important in tableting and characterization, and the study gradually increased the production rate to (15, 20, 30, 40 kN) to evaluate the effect of tableting. Based on individual studies combined with previous qualitative studies, the study developed and scored an orthogonal optimization test using hierarchical analysis to determine optimal parameters.

Research results from the efficiency process:
The results of a test show that the optimum amount of microcrystalline cells is 8%; The ideal amount of sodium carboxymethylcellulose is 2%; The ideal amount of magnesium stearate is 1. 5%; According to orthogonal table L9 (34), orthogonal design of M. oleifera and ginseng nutritional complex, results of orthogonal testing and data analysis. The list of factors affecting product quality is M. oleifera and ginseng powder > magnesium stearate > microcrystalline cellulose > sodium carboxymethylcellulose. The best combination is A2B2C2D2. With this formula combining research conducted three times in parallel, the average of the combined product is 89.2, indicating that the combination is the best combination. The percentage of ingredients in each ingredient is as follows: M. oleifera and ginseng powder: microcrystalline cellulose: sodium carboxymethylcellulose: Magnesium stearate is 88.5:8:2:1.5; This means that 100 prepared tablets contain 61.95 g of moringa powder with and ginseng powder contains . 26.55 grams.

M. oleifera and ginseng production improve the results of diet pills. The results of a study showed that, by definition, according to orthogonal table 1.9, the powder size of the samples was 200-300 mesh, the moisture content of the material was 8%, the pellet pressure shoulb be 30 kN. (33) of the orthogonal optimization test.

Direct development of moringa and ginseng powder complete nutrition tablets, prepared orthogonal test results and data analysis. The order of sensory quality factors is as follows: humidity > particle pressure > powder particle size, the most suitable particle size formula is A2B1C3, that is, particle size is 200-300 mesh; The moisture content is 7% and the tablet pressure is -40 kN. This formula makes three parallel comparisons and the average is 96.2, indicating that the combination is the best path to 10/29/11.

Results:

Prepare results of study on M. oleifera and nutritional ginseng supplements. Best ratio of ingredients ? Use moringa or ginseng tablets containing nutrients as per literature reports or are low in some nutrients, which may not fully meet the requirements of a complete diet; According to theanalysis, the nutrients of Moringa and ginseng are highly complementary and provide high doses andcomplete nutritional values. The content may meet or be close to the requirements. Through complete analysis of each collection we can determine that the ratio of Moringa leaf powder to ginseng powder is 7:3. The nutrient ratio in the complex tablet is which is quite reasonable and also the preparation cost is low.

Conclusion and Discussion:

The results showed that with the appropriate usage method, the mixed materials of moringa leaves and ginseng can be used to produce Moringa and ginseng nutritional tablets using the direct powder concentration method, where the ratio of Moringa leaf powder and ginseng is included here. The powder is 7:3 and is the

most complete in type and nutritional value. According to the same article, the difference is tablet weight, hardness, disintegration time, five factors as evaluation parameters, and microcrystalline cellulose , sodium carboxymethylcellulose and magnesium stearate as excipients. With the same text and orthogonal analysis, the raw material proportion is 88.5% (of which 61.95% is Moringa leaf powder, 26.55% is ginseng powder), 8% is microcrystalline cellulose, and 2% is sodium carboxymethyl cellulose, 2% is magnesium. To achieve the best preparation, the stearin content is 1.5%. In the study, the effect of raw material size, moisture content and effect of plates on raw materials was investigated and it was concluded that the fine raw material size was 200-300 mesh, the fine material content was 7%, and the effective pressure. The weight of the tablet is 40 kN. The color of moringa and ginseng nutritional tablets is green, blue, plump and soft, uniform color, no mess, no foreign matter, weight difference is less than 5% and litter less than 1%, density is higher than 40% N and The average disintegration time of is 7. 2 minutes and the tablet speed is 96%. Research provides a scientific basis forthe effectiveness of Moringa and ginseng nutritional tablet.

It is recommended to take 6-8 g of starch per day made from moringa and ginseng; This is more than the same effect as using ginseng or moringa leaf, which can help many people improve their overall nutrition and human health. Especially for the adult group aged 18-55, Moringa leaf powder and ginseng leaf powder have a ratio of 7:3. The nutritional needs of the elderly and young people may not match, so you can use the ratio in the recipe. For different batches during processing.

The nutritional value of direct use of Flour in the preparation of tablets is low because the raw material is not subjected to heat treatment, but losses may occur. While the nature of the health and safety parameters of the product and the safety status in the next disease have not yet been made, it is necessary to send a text message about the nutrition of the product in the actual loss.

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