Seasoning of vegetable origin with preservative properties, salt substitute, and procedure for obtaining it

Abstract

translated from Spanish

Seasoning of vegetable origin with preservative properties, substitute for salt, which comprises wine residues that have a maximum particle size of 0.25mm and sodium and potassium contents within the ranges 0.2-5.5 and 25-85 mg / g dry product, respectively, method of obtaining said seasoning, which from the reception of pomace comprises a) drying out the pomace, until its moisture content is reduced below 8% (w / w), b) conditioning the dried pomace by grinding them in order to obtain a product with a maximum particle size of 0.25 mm, and c) microbiologically stabilizing the product obtained, and using the seasoning in the food industry, as an additive that replaces salt , sulphites, and the like.

Classifications

A23L27/00 Spices; Flavouring agents or condiments; Artificial sweetening agents; Table salts; Dietetic salt substitutes; Preparation or treatment thereof

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Claims (11)

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translated from Spanish

1. Seasoning of vegetable origin with preservative properties, substitute for common salt, characterized in that it comprises wine residues that have a maximum particle size of 0.25 mm, and sodium and potassium contents located 5 respectively in the 0.2 intervals -5.5 and 25-85 mg / g dry product. 2. Seasoning according to claim 1, characterized in that the wine residue consists of pomace. 10 3. Procedure for obtaining a seasoning of vegetable origin with preservative properties that, from the reception of pomace from the wine industry, is characterized by comprising the following phases: a) desiccation of the pomace, until its moisture content is reduced below 8% 15 (w / w), b) conditioning of the dried pomace by grinding them and subsequent sieving, in order to obtain a product with a maximum particle size of 0.25 mm, and 20 c) microbiological stabilization of the product. 4. Process for obtaining a seasoning according to claim 3, characterized in that phase a) is carried out at a temperature between 60 and 70 ° C, for a period of 25 240 to 270 minutes. 5. Procedure for obtaining a seasoning according to claims 3 and 4 characterized in that the drying of the pomace is carried out in one of the following: tray drying, conveyor sieve dryer, tower dryer, 30 rotary dryer, conveyor screw dryer or a fluidized bed dryer. 6. Procedure for obtaining a seasoning according to claims 3 and 4, characterized in that the drying of the pomace is carried out in a vacuum oven. 35 7. Procedure for obtaining a seasoning according to claim 3, characterized in that before the milling of phase b), the seeds contained in the pomace are separated and extracted. 8. Method of obtaining a seasoning according to claim 3, characterized in that the grinding is carried out until a product with a maximum particle size of 0.25 mm is achieved. 9. Process for obtaining a seasoning according to claim 3, characterized in that the grinding is carried out until a product with a particle size of 45 0.15 mm is achieved. 10. Method of obtaining a seasoning according to claim 3, characterized in that the microbiological stabilization is carried out by means of one or a combination of the following: conventional heat treatment, microwave use, 50 and UV light treatment. 11. Use of a seasoning obtained according to the procedure defined according to claims 3 to 10 in the food industry, as a food additive that replaces salt, sulphites and the like.

Description

translated from Spanish

DESCRIPTION

Seasoning of vegetable origin with preservative properties, salt substitute, and procedure for obtaining it.

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Field of the Invention

The present invention relates to a seasoning of vegetable origin with preservative and sapid properties, such that it can replace common salt, and the method of obtaining it, for use in the food industry, in general, and for seasoning. and preparation of dishes, especially.

Background of the invention

The problems to which the present invention is directed, in short, the causes that motivate the object of the present application are set forth in detail below.

a) High sodium intake

The main source of sodium in the diet of industrialized countries is sodium chloride, better known as table salt. The recommendations of the World Health Organization (WHO) regarding salt intake indicate that adults should consume a maximum of 5 g of salt per person per day. However, the actual actual consumption in Europe is between 8 and 12 g (Busch et al., 2010). Due to the risks associated with high sodium consumption and the health benefits that would be obtained by reducing salt consumption, various initiatives have been developed, both at national and European level, among which is the framework of the European Union adopted in 2008 by the High Level Group on Food, Physical Activity and Health, which supports existing national initiatives for salt reduction by coordinating actions and disseminating useful information (Commission, 2009, Webster, 2009). In addition to 30 national and European authorities, non-governmental organizations and the food industry itself are striving to achieve the objective of reducing the salt consumption of the western population.

The collaboration of the food industry is essential because the main source of 35 salt from Western diets is processed foods. Thus, it is key to persuade food producers to take measures to combat their high consumption. A possible alternative is the reformulation of products by gradually reducing the amount of salt added to processed foods. In this sense, it can be very useful to consider the use of other salts and other sources, not just 40 minerals. This strategy is based on the fact that the decrease in sodium consumption, either by itself and especially in combination with an increase in the consumption of potassium, calcium and magnesium, clearly benefits public health (Karppanen and Mervaala, 2006, He and MacGregor, 2010).

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However, proposals for salt reduction of a food should not forget that salt is an essential ingredient for the acceptability of the product, since it has a great influence on the taste of the food. Therefore, in products in which the amount of salt is reduced, the use of some other ingredient or additive that reinforces and / or enhances the flavor is usually resorted, thus preventing salt reduction from being perceived. fifty

Salt also plays an important role in the foods to which it is added: conservation. The preservative power of salt has been known since ancient times, and its effect on the inhibition of the growth of altering microorganisms and pathogens is still being studied due to the importance that this fact has for the food industry (Doyle and Glass, 2010). The reduction of salt in food, without other complementary actions, can lead to a decrease in its useful life. This fact is negative from the point of view of sustainable development that strives to avoid wasting value-added products such as processed foods.

b) Shelf life of processed foods with low salt content 10

One of the big problems of the planet and of the world society is the amount of "wasted" food, estimated at around 1300 million tons / year, about 90 million in the EU, and a large part of them corresponding to processed foods . Aware of this serious problem, FAO and the UN Environment Program 15 (UNEP) launched a global campaign in 2013, the "Think, Feed, Save, Reduce Your Food Footprint" initiative, which aims to reduce the loss and waste of food throughout the entire food production and consumption chain. This fact also coincides with one of the challenges to improve society that they address within the new European framework program for research and innovation (Horizon 2020 program), being related to the objective focused on promoting the efficient use of resources for Protect the planet. Given this situation, any proposal to reduce the salt content of food must contemplate alternative proposals and synergies that allow avoiding the reduction of the useful life and, therefore, make viable the efficient and sustainable production of food. 25

A possible strategy to extend the shelf life of low salt products is to use synthetic additives such as sulphites, nitrates or sorbates. Although these are considered safe by the European Food Safety Authority (EFSA), the effects of their continued and long-term consumption are not clear. On the other hand, some of the possible risks associated with the use of some of them are not new, as is the case of nitrites, which can give rise, during cooking, to the formation of substances of questionable quality, like nitrosamines (Jakszyn and González, 2006). More recently, it has been detected how the percentage of population sensitive to some of them increases, for example, sulphites (Vally and Misso, 2012, Vally et al., 2009). Thus, 35 food laws increasingly limit their use and reduce the levels allowed in food.

Another of the alternatives lies in the use of innovative technologies, such as high pressures, but these are not applicable to all types of food, and at the moment they represent an excessive cost, which makes them in many cases unfeasible.

c) Other current consumption habits in Western societies

Western societies are characterized by low consumption of potassium, food fiber and antioxidants, which has, in the long term, negative implications for public health, since their lack is related to numerous chronic and / or degenerative diseases (Fiagg et al., 1995, He and MacGregor, 2001, Marlett et al., 2002).

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Potassium is an essential mineral for the body, with great importance for the proper functioning at the cellular level and for nerve transmission. Grapes are a known source of potassium, and much of it remains in the solid parts after the winemaking process. Therefore, the use of the seasoning developed here, derived directly from pomace and used as a food ingredient substitute for 5 salt, will contribute to reducing the sodium / potassium (Na / K) ratio of the food to which it is added and of the diet . In this way, it is possible to contribute to improve or reduce the risk of suffering from hypertension and other related diseases, such as heart attacks or cardiovascular problems (He and MacGregor, 2001).

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The role of dietary fiber in the human body is mainly related to intestinal health (tract mobility, development of beneficial intestinal flora, etc.). In addition, adequate fiber consumption is also associated with a lower risk of developing coronary heart disease, heart attacks, hypertension, diabetes and obesity (Marlett et al., 2002), all due to its ability to act on cholesterol absorption 15 and glucose, in addition to the satiating effect, among other effects.

Pomace is a good source of food fiber (Saura-Calixto, 2011). Considering this fact, the use of a seasoning, such as that of the present invention, will have an additional effect on the fiber content of the foods to which it is added. twenty

Regarding the antioxidants ingested with the diet, the essential role of the antioxidant / prooxidant balance for health maintenance must be taken into account. The high levels of antioxidants (especially polyphenols) present in the pomace gives these vinification by-products an important industrial interest because of their potential to be used as antioxidants in food, and also as nutritional supplements, acting as preventive agents for various diseases related to oxidative stress (González-Paramás et al., 2004).

d) Wine industry 30

On the one hand, numerous studies indicate that grapes, the basic raw material of the wine industry, and their derivative products have several healthy effects in relation to the risk of suffering from cardiovascular diseases, such as: improvement of endothelial function, decrease in blood pressure and of the oxidation of LDLs, 35 improvements in blood lipid concentrations and atherogenic index, and reduction of oxidative stress. Recent studies have also shown that grapes have beneficial effects on other chronic degenerative diseases related to oxidative stress, such as cancer, arthritis, diabetes, Alzheimer's disease and age-related cognitive deficits (Vislocky and Fernández, 2010). Most of these actions 40 have been related to the antioxidants in grapes and their derivatives. However, other constituents, such as fiber and potassium, must be taken into account.

On the other hand, during the winemaking process there are several solid waste generated, the majority being scrapes and pomace. Generally, the term 45 pomace refers to solid waste consisting mainly of the solid parts of the grapes, skins and pips, although pulp remains are also present, obtained after fermentation and / or pressing of the grapes.

The storage, transformation and disposal of this waste is the cause of serious problems for the wine sector, both in ecological and economic terms.

Until a few years ago these by-products have been undervalued, being mostly discarded or, in any case, transported to distilleries to obtain wine alcohol. Alternatively, these vinification residues are used as feed for livestock, soil conditioner, adsorbents or for fertilizer processing (Arvanitoyannis et al., 2006). In recent decades, its use has been the subject of several national and international projects, trying to solve the environmental problem while taking advantage of its richness in bioactive components present in both the skins and the seeds.

The skins are rich in polyphenols, and much of them are retained in the remains 10 of the plant tissues, as well as in the wall of the yeasts, after the winemaking processes. As for the seeds, they keep practically intact all their phenolic load after the winemaking process, in addition to containing oil of great nutritional quality. There are many studies that show the bioactivity of the phenols of both the skin and the nugget (Spatafora and Tringali, 2012, Yu and 15 Ahmedna, 2013), and in recent years the high antimicrobial activity of some of them (Sagdic et al., 2011, Tseng and Zhao, 2012), so much that it has even led to them being studied as alternatives to the use of sulphurous (INNPACTO 2012 Program, "Development of an oenological itinerary to produce high quality wines free of sulfur dioxide (VINNOSO2) ". 20

Description of the invention

A first aspect of the present invention relates to a seasoning that is obtained directly from the vinification residues, especially pomace, and which can be used by the food industry as a salt substitute for its sensory properties (taste) and preservatives (especially, antimicrobial). The seasoning of the invention has a maximum particle size of 0.25 mm and values of sodium and potassium content respectively within the range 0.2-5.5 and 25-85 mg / g dry product. 30

In addition, the seasoning has healthy properties, which allows its use to obtain functional foods. The reduction of salt that is achieved through its use and its contribution of potassium allow to modify the Na / K ratio of the food to which it is added, decreasing it, which is of great interest for the control of hypertension. 35 Secondly, its contribution of natural antioxidants (grape polyphenols), in addition to being of interest for the protection of food oxidation, reinforces the body's antioxidant defenses, and its fiber content contributes to proper intestinal functioning.

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The characteristics of the wine by-products, which are used as a starting material, reinforce the use of the seasoning of the present invention as a salt substitute, without reducing the shelf life of the low salt products that are formulated.

A second aspect of the invention relates to a process for obtaining a seasoning, such as the one mentioned above, in which there is a minimum processing of the starting material, pomace, and which is markedly far from the background of the technique, which they involve, for the most part, obtaining extracts by laborious processes, in addition to reaching products of limited stability.

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Regarding the background of the technique, the procedure for obtaining the product described is simple, fast, economical and environmentally friendly, and applied in a controlled manner, allows the final product to meet the safety requirements required of any food ingredient

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Both the product and the procedure for obtaining it described here represent, therefore, a novel alternative to the exploitation of the residues of the wine industry, since they have never before been used as a food ingredient by the combination of their properties as preservative and seasoning. This innovative utility of the pomace represents a new alternative to its use 10 and exploitation, which in addition to achieving a revaluation of them and the food in which they are incorporated, entails benefits in maintaining the environmental balance and supporting production. Sustainable agriculture in the areas of wine production.

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In addition, aspects related to the acceptability of the products to which the seasoning of the present invention are added have been considered and, therefore, particle sizes are proposed that do not affect palatability.

The process for obtaining the seasoning object of the present invention comprises the following phases:

a) Desiccation of the pomace:

The pomace usually contains varying amounts of water depending on the degrees of extraction and storage conditions. Therefore, after the reception a first stage of drying is carried out, in which the moisture content is reduced below 8% (w / w), with respect to the dried pomace weight, to give the product microbial stability.

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The drying is carried out under controlled temperature, which is set between 60 and 70 ° C, for a time of 240 to 270 minutes, to avoid deterioration of the bioactive components (essentially phenolic compounds). Time and temperature must be adapted to the type of pomace (skin thickness, percentage of nugget, etc.). When choosing the final conditions, the cost of energy must also be taken into account.

This phase of drying out the pomace can be carried out in one of the following options: a tray dryer, conveyor sieve dryer, tower dryer, rotary dryer, conveyor screw dryer or fluidized bed dryer. Optionally, drying can be done in a vacuum oven.

The use of forced circulation hot air systems gives good results with short drying times. It is not recommended to exceed 70ºC. Lyophilization is not recommended either because of the high cost of the process and because 45 great advantages have not been observed.

If you want to protect the product from oxidation reactions, during this drying stage, dehydration in vacuum stoves is proposed as an option.

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b) Conditioning phase

The pomace from the previous phase, either as a whole or according to an optional embodiment of the invention, in which the pips are separated and extracted from the pomace, are transformed into powdered products with the desired particle size. 5 Said size must be appropriate for its consumption (in order to achieve a good palatability), in addition to allowing its adequate distribution in the food to which it will be added, and that does not present handling problems during the process of making said food.

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Seasonings must have a maximum particle size of 0.25 mm.

The final size reduction will be adapted to the food product in which it will be applied. Optionally, flour particle sizes (less than 0.15 mm) can be reached, especially in cases where the seasoning derives from the use of the whole pomace (including the seeds).

c) Microbiological stabilization phase

One of the objectives of the present invention is to ensure the microbiological quality of the seasoning obtained, so that it can also be used in those fresh consumption products. Therefore, a microbiological stabilization phase is included in the process of obtaining the seasoning, with the purpose of reducing its microbial load to the maximum and adapting to the criteria and food safety requirements of the products in which they can be added. This phase is especially important, if the seasoning is applied to foods with high microbiological risk.

To carry out this phase of microbiological stabilization, one or a combination of the following treatments is used: conventional heat treatment, microwave treatment, and UV light treatment. 30

The need to avoid the degradation of bioactive compounds and the cost of the processes must be taken into account, without forgetting the initial microbial load of the product after dehydration, grinding and sieving.

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Proper treatment with ultraviolet light may be sufficient to reduce the microbial population to legal levels; and also combinations of UV light treatment and heat treatment sets are simple and economical.

After microbiological stabilization, the seasoning must be packaged with the precaution 40 of using materials and a packaging system that prevents the increase of moisture in the final product, as well as avoiding the recontamination of the same, in order to maintain stability microbial However, the seasoning presents a low risk of re-contamination due to its composition (rich in phenolic compounds, salts, acids, etc.). Four. Five

A third aspect of the invention relates to the use of the seasoning, with the characteristics mentioned above and obtained according to the procedure described above, in the food and culinary industry, as an additive that replaces salt, sulphites and the like that are normally used as Seasonings in the preparation of 50 food products.

Examples of realization

Example 1. Procedure for preparing the seasoning from whole pomace (M):

1st. Collection of wine pomace from various wineries in the area. 5

1 B. Mix all of them to obtain a homogeneous mass.

1 C. Drying in the oven with forced circulation of hot air at 65 ± 2ºC, on perforated bed trays. Stable humidity control at 4 hours, to obtain values of 10 humidity below 8% (w / w), if necessary, drying is extended for thirty more minutes. An average moisture value reached in the product of 7.1% (w / w) was obtained.

1d. Grinding with hammer mill and sieving (vibrating separator), until obtaining a product of particle size smaller than 0.15 mm.

1e. The sieved product is spread on trays forming 1 mm thick films and exposed to ultraviolet light for a maximum time of 2 hours, in cameras equipped with 256 nm emission lamps. twenty

1f. Vacuum packed.

Example 2. Procedure for preparing the seasoning from pomace-free pomace (P):

Proceed as in the previous case, but in this case some modifications are made prior to the milling and in the milling itself, as follows:

2nd. The seeds are separated and extracted, by means of vibratory size separators of the remaining components of the pomace.

2b Grinding with hammer mill and sieving, by means of a vibrating separator, until a product smaller than 0.25 mm is obtained.

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Average composition of seasonings (P and M) obtained:

* PFT: total polyphenols expressed in mg of gallic acid / g product. 40

"CAO: total antioxidant capacity expressed in mg Trolox / g product.

%: percentage by weight with respect to seasoning weight

Four. Five

In relation to the microbial load of the seasonings obtained, it was observed: absence of molds and yeasts and, in general, absence of total mesophilic aerobics, or loads less than 0.6 log cfu / g for the seasoning derived from pomace-free pomace .

Example 3. Preservative effect of the seasoning of the invention: study on 5 hamburgers.

A. Burgers were made at different doses of salt (D1, D1.5 and D2) and the preservative effect of the pomace-free pomace seasoning, added by 2%, was studied. The preservative effect was evaluated, observing how the product reduces the growth rate of the microorganisms, the effect being dependent on the percentage of salt used (table 1). In any case, the presence of the seasoning of the invention always improved the microbial stability of the hamburgers. These results show the preservative power of the seasoning and its possible role in alleviating the loss of microbial stability derived from the reduction of the salt content of the processed product, the hamburger in this case.

Table 1. Total mesophilic aerobic counts (log10 cfu / g product)

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B. Burgers were made at different doses of salt (01 and 02) and the preservative effect of the pomace-free pomace seasonings (P) and the full pomace (M) against the preservative power of sulphites, usual additive in Hamburger meats but that presents allergenic problems, so that the levels admitted in food are reduced every time.

Again, it was observed that the product reduced the growth rate of the microorganisms with respect to the control hamburgers, made without any preservative, as well as the effect was dependent on the percentage of salt used (table 2). 30

Table 2. Total mesophilic aerobic counts (log10 cfu / g product) in hamburgers with different salt contents, various preservatives (sulphites and M and P, seasonings derived from pomace), and at different storage times.

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In any case, the presence of the seasoning always improved the microbial stability against the control product and, although at prolonged times it did not produce the levels of stability that the sulphites gave, at short times and 2% salt dose gave very similar results. Therefore, it can be inferred from these results that the use of the seasoning can contribute to the reduction of the addition of sulfite to the processed product, the hamburger in this case, thus reducing the intake of sulphites in the global diet, and possible adverse reactions .

Example 4. Effect of skin seasoning on sodium and potassium content. Study 15 on hamburgers.

Burgers were made at different doses of salt (D1.5 and D2) and the effect of the pomace-free seasoning seasoning, added by 2%, on the levels of sodium and potassium in the hamburgers was studied. twenty

The incorporation of 2% of the seasoning derived from pomace-free pomace did not produce statistically significant changes in the sodium content of hamburgers, but it did represent a statistically significant increase in potassium levels, and therefore in the sodium / potassium ratio of these products (table 3). 25

Table 3. Average sodium, potassium content and average value of the sodium / potassium ratio of hamburgers with (Product) and without (control) seasoning

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Taking into account that the increase in potassium content is independent of salt content, the incorporation of the seasoning always means a reduction in the value of the Na / K ratio, which is very favorable for the reduction of the risk of hypertension and Other cardiovascular disorders. In addition, the reduction is more intense at a higher salt content (reduction of 21% versus 17%), therefore it would occur even without replacing part of the salt. Clearly, when part of the salt is replaced by the seasoning it is when the most favorable reduction occurs (numerical data in bold) since it combines the reduction of sodium content, because the amount of sodium (salt) added is reduced, with the contribution of potassium, due to the incorporation of the seasoning. 10

Example 5. Sensory evaluation of hamburgers with and without seasonings:

Burgers were made at different doses of salt (D1, D1.5 and D2) and with the addition of different seasonings, derived from whole pomace (M) and pomace-free pomace (P). 15 A trained panel of tasters evaluated the difference in salty intensity of hamburgers made with and without seasoning with triangular and paired tests.

The results indicated that:

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i.- At low levels of salt (1%), samples with seasoning were perceived as more salty than controls. At salt levels of 1.5% and 2%, no significant differences were detected.

ii.- There was no difference in the intensity of the saline sensation of the samples with seasoning derived from pomace-free pomace and a salt content of 1.5% compared to the controls with 2% salt.

iii.- Less intensity of the saline sensation of the samples was perceived with seasoning derived from pomace-free pomace and a salt content of 1.0% compared to the controls with 30% salt.

These results indicate that the seasoning contributes to the perception of the saline sensation, intensifying it. The intensifying power of the seasoning depends on the intensity of the base salt sensation. Thus, when the salt intensity is low, the seasoning is able to intensify this sensation in a remarkable way. However, if the salt intensity is marked, the seasoning does not produce a noticeable increase in intensity. The seasoning was able to counteract the reduction of 0.5% salt.

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CN101766308A	2010-07-07	Collagen oral liquid
Abul-Fadl	2012	Nutritional and chemical evaluation of white cauliflower by-products flour and the effect of its addition on beef sausage quality
Malav et al.	2013	Shelf life evaluation of restructured chicken meat blocks extended with sorghum flour and potato at refrigerated storage (4±1 C)
RU2342884C1	2009-01-10	Cooked sausage product with unconventional raw materials for children of senior school age
Brigide et al.	2006	Antinutrients and “in vitro” availability of iron in irradiated common beans (Phaseolus vulgaris)
KR101189660B1	2012-10-10	Chicken emulsion sausage with containing the dietary fiber extracted from Takju lees and manufacturing method therof
CN100998431B	2010-06-09	Muslim's non-fried instant noodles food containing ox-marrow, and its production method
CN104938563A	2015-09-30	Cress-flavored seed cake and processing technology thereof
KR101027316B1	2011-04-06	The manufacturing method of sausages additional natural calcium and it's the composition
KR100904923B1	2009-06-29	Spice and manufacturing method of spiced meat
JP4813960B2	2011-11-09	Olive curry and method for producing the same
ES2369102B1	2012-10-11	PROCEDURE FOR OBTAINING HEALTHY MEAT PRODUCTS WITH ALGAE.
ES2524870B2	2015-06-30	Seasoning of vegetable origin with preservative properties, salt substitute, and procedure for obtaining it
KR20050117113A	2005-12-14	Meat product containing citron peel powder and preparation method thereof
CN1823604B	2010-04-21	Seaweed tea and its preparation method
KR101355563B1	2014-01-27	method for traditional medicine sausage using deer meat
JP2005137339A	2005-06-02	Salt and spice comprising gamma-amino butyric acid and vitamin and having medicinal effect
Gomes et al.	2021	Sodium replacement on fish meat products–A systematic review of microbiological, physicochemical and sensory effects
KR101591232B1	2016-02-03	How to prepare the duck barbecue wings
LT5676B	2010-08-25	Spirulina in chocolade
Rahman et al.	2017	Effect of kalogira (Nigella sativa) and BHA (beta hydroxyl anisole) on quality control and shelf-life of beef meatballs
CN105942187A	2016-09-21	Strawberry flavored child nutritious noodles
JP2019502388A	2019-01-31	Calcium fortified seafood products

Priority And Related Applications

Priority Applications (1)

Application	Priority date	Filing date	Title
ES201300555A	2013-06-12	2013-06-12	Seasoning of vegetable origin with preservative properties, salt substitute, and procedure for obtaining it

Applications Claiming Priority (1)

Application	Filing date	Title
ES201300555A	2013-06-12	Seasoning of vegetable origin with preservative properties, salt substitute, and procedure for obtaining it

Legal Events

Date	Code	Title	Description
2015-06-30	FG2A	Definitive protection	**Ref document number**: 2524870 **Country of ref document**: ES **Kind code of ref document**: B2 **Effective date**: 20150630

Concepts

machine-extracted

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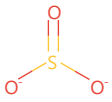
Name	Image	Sections	Count	Query match
food seasoning agent		title,claims,abstract,description	70	0.000
sodium chloride		title,claims,abstract,description	58	0.000
salts		title,claims,abstract,description	51	0.000
preservative		title,claims,abstract,description	17	0.000
vegetables		title,claims,abstract,description	6	0.000
method		title,claims,description	27	0.000
food		claims,abstract,description	40	0.000
potassium		claims,abstract,description	18	0.000
potassium		claims,abstract,description	18	0.000
potassium		claims,abstract,description	18	0.000
sodium		claims,abstract,description	18	0.000
sodium		claims,abstract,description	15	0.000
sodium		claims,abstract,description	15	0.000
wine		claims,abstract,description	14	0.000
drying		claims,abstract,description	12	0.000
particle		claims,abstract,description	12	0.000
Sulphite		claims,abstract,description	9	0.000
grinding		claims,abstract,description	7	0.000
reduced		claims,abstract,description	7	0.000
conditioning		claims,abstract,description	3	0.000
sodium chloride		claims,description	55	0.000
microbiologic		claims,description	8	0.000
sodium chloride		claims,description	8	0.000
stabilization		claims,description	6	0.000
sieving		claims,description	4	0.000
UV-light treatment		claims,description	3	0.000
heat treatment		claims,description	3	0.000
milling		claims,description	3	0.000
food additive		claims	1	0.000

food additive	claims	1	0.000
additive	abstract,description	4	0.000
additive	abstract,description	4	0.000
stabilizing	abstract	1	0.000

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