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Description

The present invention concerns a method of preparing a packaged yeast product and a package comprising a yeast product as set forth in the preamble of claims 1 and 8, respectively, this being known from GB—A—1 172 595.

In the aforementioned reference a yeast package is known comprising a sealed metal-foil bag containing granulated fresh yeast, the thickness of metal-foil being such, that the gases arising from the yeast contained therein are capable of diffusing through the foil at a rate sufficient to prevent bursting of the bag. This metal-foil bag is preferably reinforced by a layer of paper, cardboard or plastic material and is laminated with an outer layer of paper so as to be able to safely retain up to 15 kg of granular yeast.

Yeast which is to be used for baking purposes is a product based on any of the strains of the species Saccharomyces cerevisiae. There are many strains of yeast that are included within this species, differing from each other, among others, in osmotolerant characteristics, ability to ferment various sugars, resistance to dehydration, etc. A yeast product based on any of these strains is produced commercially in a series of fermentations or stages. The yeast is grown under aerobic conditions by the addition of large volumes of air to the growth media. Carbohydrates, in the form of molasses, and nitrogen sources, in the form of ammonia, are continuously incorporated into the growth media, especially in the last stages of propagation. The pH, temperature and solute concentration of the growth media are maintained within ranges where optimum growth of the yeast occurs. At the conclusion of the last propagation stage, the yeast is separated from the other dissolved constituents of the growth media by centrifugation and a number of washing cycles. Yeast at this stage, at about 20% solids content, is a tan coloured liquid and known in the art as liquid or cream yeast. Cream yeast is converted to a plastic or solid consistency by vacuum or other filtration procedures. Such yeast product is known in the art as compressed yeast containing approximately 30% solids and may be molded or extruded into blocks or cubes in which form it is supplied to bakers or for household use.

Another form of yeast product provided to the baker is bulk yeast. This product, almost always at a solids level substantially above 30%, is granulated and provided to the baker as is or treated with a minor amount of drying agent intended to preserve the free flowing characteristics of this type of yeast.

Still another yeast product available to the consumer is referred to in the art as active dry yeast. The initial processes involved in the production of this product are those described for compressed or bulk yeast production, a Saccharomyces cerevisiae strain known as Bios No. 23 being generally used. The Bios classification is as per publication by Schultz and Atkin in "Archives of Biochemistry", Vol. 14; p. 369 (August 1947). From a suitable compressed or bulk type yeast product obtained from this strain, active dry yeast is obtained by any of several processes known in the art. For example, the compressed yeast can be converted into spaghetti form and dried on a moving belt under controlled temperature and time conditions.

Fresh, compressed or bulk yeast is sold principally to bakeries. The household consumer has two types of yeast products available to him. They are fresh compressed yeast packages or cubes, wrapped in aluminum foil, or active dry yeast, packaged in air, vacuum, or under inert gas conditions.

The fresh compressed yeast cube, known in the art as Household Yeast, is distributed as a refrigerated item. This product has a shelf life of about 4 to 6 weeks under storage conditions generally referred to as cool and dry. To achieve this kind of storage characteristics the yeast has to undergo special treatment in all stages of its preparation, especially before filtration and packaging. Also, the packaging material (generally an expensive aluminum foil laminate) has to be especially treated to minimize the tendency of mold development on the surfaces of the yeast cube. This kind of product, being in cake or block form, has the additional disadvantage of having to undergo dispersion before it can be added to the flour in home baking. The product suffers also from other shortcomings such as loss of weight and discoloration if not properly wrapped.

The development of an active dry yeast product came against the background of the disadvantages exhibited by the household yeast package, and aimed at providing a better product. And indeed the active dry yeast type product has a longer shelf life and has no mold or discoloration problems. The active dry yeast has, however, other inherent problems. For one, it is less active than fresh yeast. Moreover, it has to be rehydrated under controlled temperature conditions before it can be used in the baking process, and this can become a major burden to the consumer when attempting to bake yeast leavened goods in a kitchen. Additionally, to achieve a reasonable room temperature shelf life, the yeast may have to be packaged in expensive material such as aluminum foil laminates under inert gas conditions. When adding to this the cost of a very demanding drying procedure, there results a very expensive product for the household consumer.

It is thus seen that both of the two kinds of commercially available yeast products have serious drawbacks and are far from satisfactory.

Bakers yeast, e.g. free flowing, fresh bulk yeast, would be an ideal product for, among others, the household consumer. For the consumer to enjoy all the possible benefits of such a product it would have to come to him in a package which ensures for the yeast the following characteristics:

1. A reasonable stability to rough handling.
2. A relatively long refrigerated storage stability.

3. Retention of physical properties, even under stacking or pressure.

4. No discoloration of the product due to partial drying or oxygen contact.

5. Total or near total prevention of so-called respiration, i.e. stop the penetration of oxygen into the package.

6. Protection of the yeast product from mold development and reduction to a large extent of the invasion of contaminating microorganisms.

7. Preservation to a large extent of the initial leavening activity of the yeast product.

8. Ready availability in a form in which it can be added directly to the flour without requiring a cumbersome resuspending stage that is necesssary with the household cube or active dry yeast products.

Bakers yeast is, however, a potentially problematical product. It comprises a mass of living yeast cells having varying amounts of extra-cellular water in the interstitial spaces between and surrounding the cells. Water is also the largest component of the yeast cell and is referred to as intracellular water. The feel or appearance of compressed or bulk yeast is largely determined by the relationship between the intracellular and extracellular water in a particular yeast product preparation. Obviously, the relative dryness or wetness of a yeast product will affect the tendency of the yeast to stick or coalesce and therefore cause a deterioration in its free flowing characteristics.

Bulk yeast, being in a fine granulated form, provides a relatively large surface area for atmospheric oxygen to interact with the yeast. The process is called respiration and its results are the generation of water, heat, and other products. It is this generation of extra water during handling and storage that can ultimately partially or totally destroy the free flowing characteristics of the yeast product. US—A—4,232,045 provides a partial remedy to this problem. It teaches the incorporation into the granulated yeast of a drying agent that will tie up some of the water that may be generated by the process of respiration. A bulk yeast produced by the teaching of that patent will indeed have an improved capacity to retain free flowing characteristics over extended periods when packaged in especially designed polyethylene lined bags and held under refrigerated conditions. Because of the nature of the package, respiration occurs however, and ultimately sufficient water is generated, over and above the asorption capacity of the drying agent, leading to a reduction of the free flow capacity, discoloration, and loss of leavening activity. A similar approach is also disclosed in DE—A—26 19 348.

In GB—A—966,984 a partial solution is provided to tackle the respiration aspect of granular (bulk) yeast. In accordance with the teachings therein granular yeast is packaged in polyethylene (or similar material) which slows down the rate of oxygen penetration into the bag while permitting carbon dioxide generated in consequence or respiration and autofermentation, to diffuse to the outside. For better carbon dioxide discharge a special opening is provided in the bag. It has, however, turned out that in practice oxygen still finds it way into the yeast, resulting in respiration or generation of water.

The problem of respiration could not be solved by simply packaging yeast in hermetically sealed container or under any other anaerobic conditions, thereby to prevent penetration of oxygen, since the prior art teaches that strict anaerobic conditions are detrimental to the packaged yeast product. Thus, in the book "The Yeasts" (S. Burrows — 1970), in the chapter dealing with the keeping quality of compressed or bulk yeast it is stated, among other things, "oxygen and carbon dioxide concentrations in the immediate vicinity of the resting cells appear to be of considerable importance . . .". It is further stated that granulated compressed yeast is difficult to store and that "... a certain amount of ventilation appears to be necesssary, possibly to allow a reduction in carbon dioxide by diffusion.". Furthermore, from a paper presented by Rajamaki Factories of the State of Alcohol Monopoly, Alko, Finland, at the Yeast Symposium held in France in 1978, it follows that anaerobic storage conditions are very deleterious to the quality of the yeast as compared to better quality if oxygen is present during storage.

In accordance with the invention there is provided a method of preparing a packaged yeast product as set forth in the preamble of claim 1 which is characterized by said bag being pliable and having an oxygen permeability at 10^5 Pa pressure differential across the material which does not exceed about 1000 cm^3/m^2 per day and having a carbon dioxide permeability at 10^5 Pa pressure differential across the material which does not exceed about 4000 cm^3/m^2 per day, the amount of yeast in the bag being measured so that the bag is not full to capacity, the so-filled bag, after being sealed, is left at a temperature within the range of 0—20°C to enable the occurrence of autofermentation to produce carbon dioxide and inflate the bag.

As a result of the inflation there develops a carbon dioxide protective cushion around the granulated bulk yeast. In this way the yeast is protected against rough handling and squeezing during transportation and storage, whereby the free flowing properties of the yeast are retained.

Preferably, air present in the head space of the bag is expelled as far as possible by squeezing before the bag is sealed.

Upon the completion of the inflation the yeast in the sealed bag is under what may be termed anaerobic conditions characterized by the presence of mainly a carbon dioxide atmosphere. As already explained above, the prior art teaches that yeast may not be stored under anaerobic conditions since under such conditions the leavening capacity is significantly reduced. The prior art further teaches — see for example British patent specification No. 966,984 and "The Yeast" by S. Burrows referred to above — that carbon dioxide must be continuously removed from stored yeast. It was therefore completely surprising to discover in accordance with the present invention that by storing fresh, free flowing bulk yeast in sealed bags under a carbon dioxide atmosphere, the yeast retains essentially its free flowing characteristics and its leavening strength for extended periods of time.

The degree of inflation of the bag that is required for the purpose of the present invention is not critical as long as it is sufficient to produce a protective cushion as specified. In practice, full inflation of the package is as a rule not required. For example, in a package configuration of 1 g of yeast to four volumes of package size, it will be quite sufficient to generate only 2 ml of carbon dioxide per gram of yeast. For the generation of such relatively small amounts of gas it is as a rule not necesssary to warm the packaged yeast above the packaging tempoerature and it is sufficient to cool the yeast down to storage temperature — as a rule about 5—10°C — at such a rate that sufficient carbon dioxide develops.

The degree of inflation is obviously directly affected by the rate of autofermentation by the yeast, which in turn is dependent on the temperature of storage. Thus, any particular yeast strain grown under a particular set of propagation conditions, to a specific nitrogen and phospherous content, will have a predictable and known autofermentation profile at a given temperature. It is accordingly possible to alter any of the above to produce a yeast that has a suitable autofermentation profile.

The art also teaches other ways in which one can affect a change in the autofermentation profile of a particular yeast product. Thus, the treatment procedure described in U.S. Patent 4,008,335 is quite suitable for the purposes of the present invention.

The handling temperature during the packaging will as a rule be within the range of 10—20°C and the cooling down period may typically be from 24—48 hours.

There is no criticality as to the relative proportions between the volumes of the bag and the packaged yeast. In this context volume of bag means the volume of water required to fill it to capacity when empty, and weight ratios of yeast to bag volume of 1:27, have been found to produce satisfactory results. However, such packaging would be wasteful and as a rule a weight ratio of yeast to bag volume = 1:4—1:6 is preferred.

The material used for making pliable bags whose permeability to oxygen and carbon dioxide is as specified can be of any kind that is inert to the packaged product. For example, bags made of plastic polyester sheets, possible reinforced with small amounts of polyethylene, may be used to advantage. Other examples are bags made of polypropylene or aluminum foil, and there are of course many others.

Typical plastic material sheets produced by Kibbutz Negba, Israel, have the following permeabilities:

Gas Permeability (cm^3/m^2 day, at 10^5 Pa

	Oxygen	Carbon dioxide
Polyethylene	1,700	8,500
Polypropylene	1,000	3,500
Polyester	100	450

It follows from these data that polyethylene is unsuitable for the purposes of the present invention while polypropylene and polyester are suitable.

As explained above, hitherto household consumers had at their disposal only either compressed yeast or active dry yeast and either of these products have their inherent disadvantages, the cubes or bars of compressed yeast having to be first dispersed in water while the active dry yeast has to be rehydrated prior to use for which specific conditions have to be strictly observed. Free flowing bulk yeast is free of all these disadvantages but hitherto had the disadvantage of having a relatively short shelf life even under refrigeration so that hitherto it could only be used in bakeries. The invention provides for the first time free flowing bulk yeast for household use packaged so as to have, when stored under refrigeration, a relatively long life of 3 months or even more.

Quite generally, the present invention provides maximum storage stability that any particular yeast may have. Thus, for example, it is possible in accordance with the invention to store and preserve bakers yeast for household use which hitherto has not been possible.

The invention is illustrated in the following Examples without being limited thereto.

Example 1

This example describes the profile of a particular yeast as regards its potential to produce carbon dioxide by autofermentation and to the leavening activity by the yeast product upon storage for different periods without refrigeration.

The yeast was propagated under normal conditions to a composition of about 42% total protein (Kjeldahl) and 1.90% P_2O_5. After centrifugation and washing, 300 liters of cream yeast were treated with 20 liters of a saturated sodium chloride solution. The treated liquid yeast was vacuum filtered to about 34 per cent solids, granulated through a plate containing 2 milimeter diameter holes, and treated with four per cent Aerosil 200 on a weight basis (a product of Degussa AG of the Federal Republic of Germany).

The packaging was in a polythene reinforced polyester laminate of about 0.06 mm total thickness. The actual formation of the packages, filling and heat sealing was by hand. The sealed package containing 20 g of free flowing yeast was at about 18°C when the test series was started. The volume of the package when empty (as measured by the volume of water that it could hold) was about 550 milliliters. Table I summarizes the results.

TABLE I

Days of storage	Temperature of storage (average)	Carbon dioxide generated cc/gr	Initial activity retained, %
1	17.8	4.4	110.0
12	17.8	7.7	86.2
16	19.4	12.4	77.7
20	19.4	13.8	55.4
23	20.0	18.0	42.4

Example 2

Yeast was propagated, filtered, treated with Aerosil 200, and packaged as under Example 1. Two package sizes, one of 170 milliliters volume and the other of 550 milliliter volume, were filled each with 20 grams of free-flowing, free baker's yeast. The results are given in Table II.

TABLE II
* Leavening Activity

	** Package Size	
	170 milliliters	550 milliliters
Fresh	1945	1945
After 3 months at 5°C	1410	1420

* Volume of carbon dioxide produced in two hours in a flour dough containing initially 10% added sugar.

** The size refers to the empty package when filled with water. In actuality, the package designated as "170" had only a total volume of 70 milliliters; while the package designated "550" had a total volume of 128 milliliters after two weeks at 5°C (as measured by immersion of sealed yeast package in water and determining the total volume of water displaced). These relative volumes did not change on further storage at 5°C.

Example 3

This example compares the stability of the package produced in accordance with the invention to the stability of a package that had a pin-hole provision for the diffusion of carbon dioxide to the outside according to the teachings of British Patent No. 966,984.

The yeast was propagated as in Example 1, but this time to a protein composition of 41.9% and P_2O_5 of about 1.70%. The filtered yeast contained about 34.7% solids. After treating with 2% Aerosil 200, the yeast was packaged in polyethylene-polyester film as in Example 1, but this time in a package that contained 25 g of free-flowing yeast in a total package volume of about 100 milliliters. The yeast was packaged on a commercial packaging machine supplied by Rouse of Barcelona in Spain, model 1214 T. The yeast packages were stored at 15—20°C and the observations made after 14 days of storage are recorded in Table III.

TABLE III

	Activity retained %	Flow property
Start (fresh)	100	Free flowing
After one week		
Sealed package	100	Free flowing
Pin-hole in package	79	Formation of small lumps
After two weeks		
Sealed package	90	Free flowing
Pine-hole in package	57	Gummy consistency.

It is seen from the data in the table that the flow properties upon packaging and storage in accordance with the invention are significantly superior to those according to British Patent No. 966,984.

Example 4

This example illustrates the potential of storage stability that our invention may impart to free-flowing, fresh baker's yeast under various temperatures.

The yeast was propagated and treated as under Example 3 and stored under the various storage conditions as listed in Table IV. Before storage, the temperature profile of the yeast during preparation and packaging was:

After filtration and extrusion	13°C
After treatment with Aerosol	14°C
After two days at 0°C (in bulk)	2°C
After packaging and handling	17°C

The storage series started with the yeast being at 17°C and having generated about one ml of carbon dioxide per gram of yeast at this point.

TABLE IV

Days of storage	Activity retained — % Storage temperature — °C			
	5	20	15	20
7	100	100	100	100
14	100	97	90	68
21	100	100	23	18
28	100	97	0	0
60	100	92	0	0
90	93	84	0	0

Example 5

This example illustrates the superiority of a polyester laminate over polyethylene which has inherently a certain degree of permeability to oxygen and carbon dioxide.

The yeast was propagated, filtered, treated with Aerosil 200, and packaged as Under Example 1. Two types of packaging materials were compared. Polyethylene film alone was compared to a laminate of polyester. In the first case 20 g of free-flowing, fresh baker's yeast was sealed in a polyethylene package with a potential volume of about 170 ml., the polyethylene being of 0.05 mm thickness. In the second instance, 20 g of similar yeast was sealed in a polyester laminate with a potential volume of 550 ml., the laminate being of 0.06 mm total thickness. No attempt was made to squeeze the head space air out before heat sealing. In both cases the temperature history of the yeast was identical and thus:

Extruded yeast	13°C
After treatment with Aerosol	16°C
After packaging	18°C

The storage started at 18°C and was at room conditions in a temperature range of 15—20°C. The results were:

	After 12 days at 15 to 20°C	
	Polyethylene	Polyester laminate
Activity retained, %	57	88
Appearance	Gummy with putrid odour	Free-flowing and fresh smelling.

Example 6

This example compares the permeability characteristics of three different plastic materials in terms of the degree of head space inflation of the package which is a function of storage temperature.

TABLE V

	Inflation of Available Head Space — %		
	Packaging material		
Storage temperature and time	Polyethylene	Polypropylene	Polyester
At 7°C			
2 months	0	8	31
At 16°C			
5 days	14	24	83
10 days	0	20	97
17 days	0	20	burst open
At 24°C			
2 days	19	44	59
3 days	22	52	90
5 days	3	44	burst open
7 days	19	64	burst open

It is seen from Table V that polyethylene is unsuitable because it allows the CO_2 generated by the yeast to readily escape to outside.

Example 7

This example compares the results obtained upon storage of yeast in polypropylene and polyester bags in accordance with the invention.

TABLE VI

	Polypropylene	Polyester
Days at 16°C	Activity retained %	Activity retained %
5	96	100
7	90	87
12	92	86

Example 8

This example compares the results obtained in accordance with the invention with two kinds of yeast.

Table VII

	* Inflation — %	
	Type of Yeast	
Days at 20°C	Untreated	Treated **
3	55	21
5	90	26
7	burst open	69

* A polyester laminated package, with an available volume of about 240 ml., was heat sealed with about 50 grams of yeast in it.

** Treatment of liquid yeast, prior to filtration and further handling, was as per US—A—4,008,335.

Example 9

This example shows the leavening activity of yeast packaged in accordance with the invention in bread dough formula after different storage times at 5°C.

Time of storage at 5°C	Activity retained, %
4 months	87
5 months	84
6 months	74

Claims

1. A method of preparing a packaged yeast product wherein fresh, free-flowing bulk yeast is introduced into a bag, said bag being formed from a material having gas permeability and being hermetically sealed after the introduction of said yeast, characterized by said bag being pliable and being made from a material, the oxygen permeability of which at 10^5 P-a pressure differential across the material does not exceed about 1000 cm^3/m^2 per day, and the carbon dioxide permeability of which, at 10^5 Pa pressure differential across the material, does not exceed about 4000 cm^3/m^2 per day, the amount of yeast in the bag being measured so that the bag is not full to capacity, and the so-filled bag, after being sealed, is left at a temperature between 0—20°C to enable the occurrence of auto-fermentation to produce carbon dioxide and inflate the bag.

2. A method according to Claim 1 wherein air from the head space in the bag is expelled by squeezing prior to sealing.

3. A method according to Claim 1, wherein the ratio between the weight of the yeast in the bag and of water filling the bag to capacity as a measure for the bag volume is within the range of 1:4 to 1:6.

4. A method according to Claim 1 wherein said material of the pliable bag is a polyester laminate.

5. A method according to Claim 1 wherein said material of the pliable bag is polypropylene.

6. A method according to Claim 1 wherein said material of the pliable bag is aluminum foil.

7. A method according to Claim 1 wherein fresh free-flowing bakers yeast is used for packaging.

8. A package comprising a yeast product in a bag made of a material having a gas permeability and being hermetically sealed, characterized by said bag being pliable and being made from a material, the oxygen permeability of which at 10^5 Pa pressure differential across the material, does not exceed about 1000 cm^3/m^2 per day, and the carbon dioxide permeability of which, at 10^5 Pa pressure differential across the material, does not exceed about 4000 cm^3/m^2 per day, the amount of the yeast in the bag being so measured that the bag is not full to capacity.

Patentansprüche

1. Verfahren zum Herstellen eines verpackten Hefeprodukts, bei dem frische, frei fleißfähige Massehefe in einen Beutel gefüllt wird, wobei der Beutel aus einem Material hergestellt wird, das, gaspermeabel ist, und der nach dem Einfüllen der Hefe hermetisch versiegelt wird, dadurch gekennzeichnet, daß der Beutel faltbar ist und aus einem Material besteht, dessen Sauerstoffpermeabilität bei 10^5 Pa Druckdifferenz über dem Material 1000 cm^3/m^2 pro Tag nicht überschreitet, und dessen Kohlendioxydpermeabilität bei 10^5 Pa Druckdifferenz über dem Material 4000 cm^3/m^2 pro Tag nicht überschreitet, wobei die Hefemenge in dem Beutel so bemessen wird, daß der Beutel nicht völlig gefüllt ist, und daß der so gefüllte Beutel nach dem Versiegeln bei einer Temperatur zwischen 0 und 20°C belassen wird, um das Auftreten einer Selbstgärung zu ermöglichen, um Kohlendioxyd zu erzeugen und den Beutel aufzublähen.

2. Verfahren nach Anspruch 1, bei dem vor dem Versiegeln Luft aus dem Kopfraum in Beutel durch Ausquetschen ausgetrieben wird.

3. Verfahren nach Anspruch 1, bei dem das Verhältniss zwischen dem Gewicht der Hefe in Beutel und dem Wasser, das den Beutel völlig füllt, als Maß für das Beutevolumen im Berich zwischen 1:4 und 1:6 liegt.

4. Verfahren nach Anspruch 1, bei dem das Material des faltbaren Beutels ein Polyesterlaminat ist.

5. Verfahren nach Anspruch 1, bei dem das Material des faltbaren Beutels Polypropylen ist.

6. Verfahren nach Anspruch 1, bei dem das Material des faltbaren Beutels Aluminiumfolie ist.

7. Verfahren nach Anspruch 1, bei dem frische, frei fließfähige Bäckerhefe zur Verpackung benutzt wird.

8. Verpackung aus einem Hefeprodukt in einem Beutel aus einem Material, das gaspermeabel ist, und der hermetisch versiegelt ist, dadurch gekennzeichnet, daß der Beutel faltbar ist und aus einem Material besteht, dessen Sauerstoffpermeabilität bei 10^5 Pa Druckdiffernz über dem Material 1000 cm^3/m^2 pro Tag nicht überschreitet und dessen Kohlendioxydpermeabilität bei 10^2 Pa Druckdifferenz über dem Material 4000 cm^3/m^2 pro Tag nicht überschreitet, wobei die Menge der Hefe im Beutel so bemessen ist, daß der Beutel nicht vollständig gefüllt ist.

Revendications

1. Procédé de préparation d'un produit du type levure emballé dans lequel on introduit de la levure en vrac fraîche, s'écoulant librement dans un sachet, ledit sachet étant en une matière dotée de perméabilité aux gaz et étant fermé hermétiquement après l'introduction de ladite levure, caractérisé en ce que ledit sachet est flexible et est fait d'un matériau dont la perméabilité à l'oxygène sous différence de pression de 10^5 Pa les deux côtés du matériau ne dépasse pas environ 1000 cm^3/m^2 par jour, et dont la perméabilité au dioxyde de carbone, sous différence de pression de 10^5 Pa entre les deux côtés du matériau, ne dépasse pas environ 4000 cm^3/m^2 par jour, la quantité de levure présente dans le sachet étant dosée de sorte que le sachet ne soit pas rempli à pleine capacité, et on laisse le sachet ainsie remplie, après l'avoir hermétiquement fermé, à une température de 0 à 20°C pour permettre l'apparition d'une auto-fermentation afin d'engendrer du dioxyde de carbone et de gonfler le sachet.

2. Procédé selon la revendication 1, dans lequel on expulse par compression l'air de l'espace libre du sachet avant fermeture hermétique.

3. Procédé selon la revendication 1, dans lequel la rapport entre le poids de la levure présente dans le sachet et de l'eau remplissant le sachet jusqu'à concurrence de sa capacité en tant que mesure du volume de sachet est compris entre 1/4 et 1/6.

4. Procédé selon la revendication 1, dans lequel ledit matériau du sachet flexible est un stratifié de polyester.

5. Procédé selon la revendication 1, dans lequel ledit matériau du sachet flexible est du polypropylène.

6. Procédé selon la revendication 1, dans lequel ledit matériau du sachet flexible est de la feuille d'aluminium.

7. Procéde selon la revendication 1, dans lequel on utilise de la levure de boulanger fraîche s'écoulant librement pour l'emballage.

8. Paquet comprenant un produit du type levure dans un sachet en matière perméable aux gaz et fermé hermétiquement, caractérisé en ce que ledit sachet est flexible et est un matériau dont la perméabilité à l'oxygène sous différence de pression de 10^2 Pa entre les deu côtés du matériau ne dépasse pas environ 1000 cm^3/m^2 par jour, et dont la perméabilité au dioxyde de carbone, sous différence de pression de 10^5 Pa entre les deux côtés du matériau, ne dépasse pas environ 4000 cm^3/m^2 par jour, la quantité de levure présente dans le sachet étant mesurée pour que le sachet ne soit pas rempli jesqu'à concurrence de sa capacité.