

# ALIEN PROPERTY CUSTODIAN

## PROCESS FOR THE PRODUCTION OF YEAST PREPARATIONS

Erwin Bumm, Koln-Mulheim, Germany; vested in  
the Alien Property Custodian

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The present invention relates to a process for the production from plasmolyzed yeast of yeast preparations containing, in a stable form, the vitamins and other active constituents of yeast.

It is known that yeast can be plasmolyzed by the addition of electrolytes, by the addition of water-soluble substances which are non-electrolytes, such as sugars, and finally by the addition of organic solvents, e. g., ethyl acetate. During the plasmolysis the active constituents of yeast are set free and converted into a sensitive, easily changeable form.

It has already been proposed to convert yeast plasmolysates into the solid state by means of flour or cocoa powder. For dietetic foods, for which the yeast preparations according to this invention are particularly intended to be used, water-insoluble flour or cocoa powder is however but little suited. In addition, plasmolysates solidified with flour or cocoa powder are very easily infected with molds and similar micro-organisms.

It has also been proposed to convert sensitive substances into dry preparations by the addition of waterfree electrolytes, such as sodium sulfate, sodium carbonate and the like, in anhydrous form. The use of anhydrous electrolytes suffers however from the disadvantage that the high electrolyte content renders the administration of the preparations per os practically impossible.

To obviate these disadvantages, it is proposed in accordance with the present invention to plasmolyze the yeast by known methods, e. g., by the addition of electrolytes or sugars, whereupon the plasmolysate thereby obtained is subsequently converted into dry preparations by the addition of sugars. For this purpose it is particularly advantageous to use the sugars, e. g., glucose, maltose, lactose and the like, in anhydrous form, whereby the advantage is gained, amongst others, that with a relatively smaller amount of sugar a quicker drying and a better protection of the sensitive, active constituents of yeast is obtained.

By the process according to the present invention the water contained in the plasmolysate is combined with the sugars employed, and the active substances of the plasmolysate are simultaneously adsorbed on to the sugars. Thus the active substances of the yeast plasmolysate are stabilized particularly mildly. The stabilization takes place in a manner which is considerably more sparing than that consisting in mere thickening or solidification of the plasmolysate by means of flour or cocoa powder.

The new preparations exhibit a particularly

high content of vitamins and other active substances and contain these substances in an extraordinarily stable and active form. It is also to be noted that the sugars serving as carrier for the active substances of the yeast are easily decomposed in the body, and do not act as difficultly digestible ballast substances, as do, e. g., flour and cocoa powder.

As initial material for the process according to the present invention there may be used both bottom- and top-fermentation cultured yeasts, especially brewers' yeasts, and also wild varieties of yeast, e. g., growth-, mineral- or mold-yeasts.

For carrying out the plasmolysis, sugars are preferably employed, in order to obtain preparations as free from electrolytes as possible. The yeast is freed from bitter substances by known methods, if desired, and treated with about an equal weight of sugar. As soon as plasmolysis is complete—the duration of the process varies with the age of the yeast, its water content and the like—a further quantity of sugar, amounting to about one and a half to four times the amount of yeast used as initial material, is added and thoroughly mixed. There is thus obtained a crumbly mass which may extremely easily be dried, e. g., by allowing it to stand in the air or by passing air over it. The use of high temperatures, which may lead to spoiling the physiologically valuable ingredients, is not necessary. Plasmolysates which, for the separation of solid constituents, have previously been centrifuged, may also be submitted to the process according to the present invention.

The process according to the present invention will be further illustrated by the following examples, but the invention is not restricted to the quantities and times given in these examples.

### Example 1

1 kg. of fresh, pressed and washed brewers' bottom-fermentation yeast, which has been freed from bitter constituents by customary methods if desired, is vigorously stirred with 1 kg. of glucose in an agitator until complete plasmolysis has set in, which requires about 20 minutes. The plasmolysate obtained is then stirred with a further 2 kg. of anhydrous glucose for about 15 minutes, whereby a crumbly, powdery mass is produced which can easily be dried by passing air over it.

### Example 2

1 kg. of fresh, pressed and washed brewers' bottom-fermentation yeast, which has been freed

from bitter constituents by customary methods if desired, is vigorously stirred with 250 g. of maltose in an agitator until complete plasmolysis has set in. The plasmolysate obtained is then stirred with a further 2.5 kg. of maltose, whereby a crumbly, powdery mass is produced which can easily be dried by passing air over it.

*Example 3*

1 kg. of fresh, pressed distillery yeast, which 10

has been freed from bitter constituents by customary methods if desired, is vigorously stirred with 500 g. lactose in an agitator until complete plasmolysis has set in. The plasmolysate obtained is then stirred with a further 2 kg. of anhydrous lactose whereby a crumbly, powdery mass is produced which can easily be dried by passing air over it.

ERWIN BUMM.