

[54] DISPOSABLE TISSUE

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[63] Continuation of Ser. No. 578,468, Sept. 12, 1966, abandoned.

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[58] Field of Search.....117/16, 28, 33, 152, 154; 162/158, 183, 184; 195/54; 99/171 LP

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[57] ABSTRACT

A disposable tissue such as toilet tissue which is impregnated with 0.5-2.5 percent by weight of the paper article by a viable yeast.

4 Claims, No Drawings

DISPOSABLE TISSUE

The present application is a continuation of copending application Ser. No. 578,468 filed Sept. 12, 1966, and now abandoned.

The present invention relates to a disposable tissue. More particularly, the present invention relates to a tissue that is adapted to be used for personal purposes and into which a viable yeast is impregnated.

Although the concept of the invention has application to various kinds of tissues including facial tissues, the primary purpose of the invention is to provide a toilet tissue with a viable yeast material impregnated therein, the toilet tissue being normally fabricated in sheet form and wound in a roll. The yeast impregnated toilet tissue as employed in the present invention has a particular advantage for use in those areas where septic tanks or cesspools are required in waste disposal systems. The successful operation of a septic tank or cesspool is dependent on the continuous supply and nourishment of bacteria therein that results in a chemical reaction to cause disintegration of the waste products deposited in the septic tank. It has been found in many instances that toilet tissue deposited in septic tanks does not react immediately to the chemical reaction brought about by the bacteria located in the septic tank and thus tends to clog the septic tank, resulting in faulty operation thereof.

The present invention contemplates the manufacture of toilet tissue with a viable yeast impregnated therein, the inherent characteristics of the yeast inducing the promotion of bacterial growth for causing the required biochemical reaction to take place when the toilet tissue is deposited in a septic tank. Thus, by impregnating a toilet tissue with a viable yeast material, the tissue will be sufficiently disintegrated within a relatively short period of time after deposit in the septic tank for the dispersal thereof.

Accordingly, it is an object of the present invention to provide a disposable tissue in sheet form and in which a viable yeast material is impregnated.

Still another object of the present invention is to teach a method of impregnating a disposable tissue with a viable yeast material in the manufacture of the paper sheet.

Still another object is to provide a disposable tissue in sheet form and wound in a roll as used for toilet purposes and that has impregnated therein a predetermined amount of a viable yeast material.

Other objects, features and advantages of the invention will become apparent as the description thereof proceeds hereinafter.

The present invention has particular application in the impregnation of a viable yeast material into a sheetlike paper tissue. In the preferred form of the invention, the sheet tissue is formed in rolls and utilized as toilet tissue. Prior to the instant invention, disintegration of the conventional toilet tissue in septic tanks and cesspools has been somewhat difficult to achieve because of the lack of promotion of bacterial growth in the toilet tissue to cause disintegration thereof. It is commonly accepted that live yeast in particular metabolic products thereof supply "growth factors" for the cultivation of bacteria and the present invention incorporates this principle and combines yeast with the conventional toilet tissue to promote the disintegration thereof.

In the manufacture of the toilet tissue as contemplated in the present invention, the tissue is prepared in a conventional manner. In one form of the invention, the yeast is impregnated into the finished toilet tissue, the yeast being in a dry powder form and blown under air pressure into the finished paper. It is seen that when the toilet tissue with the dry viable yeast im-

pregnated therein is introduced into the liquid such as found in a septic tank, the addition of the liquid to the yeast will begin promoting bacterial growth to thereafter cause disintegration of the tissue in which it is impregnated.

It has been found that only a very small quantity of the yeast material is required for impregnation into the toilet tissue to achieve the desired results. In this connection it is contemplated that the amount of the yeast impregnated in the tissue will be in the range of 0.5-2.5 percent by weight with respect to the tissue. A specific quantity of the dry yeast as impregnated into the finished paper tissue that has been found to yield the desired results is 1.7 percent by weight with respect to the toilet tissue. It is understood that the above-indicated percentages of the yeast materials as introduced into the tissue may vary in accordance with the weight and the thickness of the tissue employed.

A modified form of the invention contemplates the impregnation of the yeast into the finished paper, while the yeast is in a wet or liquefied condition. This may be accomplished by forming a paste of the yeast and water and applying it to the tissue. The yeast is then allowed to dry on the paper at low temperature before the paper is wound in roll form.

Special care must be taken in making the products of the present invention so that the yeast is not "killed" in the course of the process. It is well known that yeast would be "killed" by heating the impregnated paper to a temperature of about 56° C., thus care must be taken that in drying or any other steps in the process after the yeast has been added that the temperature is not raised to a point where the yeast would be "killed."

It is understood that the impregnation technique as described above may also be applied to other forms of paper tissue such as facial tissue. In this connection, the facial tissue would not be wound in roll form such as is commonly found in toilet tissue.

In all forms of the invention as described hereinabove, it is understood that the paper article is impregnated with the yeast that is adapted to be activated upon immersion of the article in a liquid, thereby causing the yeast to promote bacterial growth for inducing disintegration of the paper article. Thus, it is apparent that the yeast contained in the finished article must be "live" or active.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangements may be made without departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the particular forms herein described except insofar as indicated by the scope of the appended claims.

What is claimed is:

1. A disposable paper tissue in sheet form, said paper tissue containing live yeast therein in an amount in the range of 0.5-2.5 percent by weight of said paper tissue, whereby when said paper tissue is immersed into a liquid present in septic tanks or cesspools, said yeast is activated to produce bacterial growth which promotes disintegration of said paper tissue.

2. In the disposable tissue of claim 1, the amount of yeast contained in said paper being approximately 1.7 percent by weight of said paper.

3. A method of preparing a disposable paper tissue having improved disintegration properties, comprising the steps of applying dry live yeast in powdered form into said paper tissue in an amount in the range of 0.5-2.5 percent by weight of the paper tissue.

4. A method according to claim 3 wherein the dry line yeast in powdered form is blown under pressure into contact with the paper tissue.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,645,769 Dated February 29, 1972

Inventor(s) Charles WILLEY et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 64 (Claim 4) delete "line" and insert

-- live --.

Signed and sealed this 4th day of July 1972.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents