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(54) **METHOD OF PRODUCING A SPONGE MADE OF PLANT RAW MATERIAL FOR CLEANING
USTENSILS AND ITS PRODUCT**

(57) The invention relates to a method of producing a sponge for cleaning utensils, where the raw material used is a vegetable one and comes from the luffa plant. The fruit is cut, allowed to dry and dried, then soaked in water, peeled, thoroughly cleaned of seeds and dried.

The resulting fruit is cut into at least two pieces and each piece is cut lengthwise and sewn using cotton threads with a cotton towel on the inside, creating a sponge, where one side is smooth and soft and the other hard and rough, such as the outer texture of the plant.

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Description

FIELD OF ART

[0001] The invention relates to the field of human needs and in particular to personal and household items and even more particularly to the field of cleaning and hygiene. It specifically refers to a method of producing a sponge for cleaning household utensils, where the raw material used comes from the luffa plant.

BACKGROUND OF THE INVENTION

[0002] The method of producing a sponge for cleaning household utensils from vegetable raw material disclosed in the present invention, as well as its final product, have not been disclosed in the prior art.

[0003] Our era is characterized by the rapid deterioration of environmental conditions. For this reason, efforts are being made worldwide to reduce the energy footprint and the active participation of industries, but also citizens in the recycling of products, the reduction of emitted pollutants and in general the protection of the environment.

[0004] A sector that presents large-scale recycling potential is the household waste sector. Household waste discards a large number of materials, which, although recyclable, often end up in landfills, while they could be recycled. Similarly, there are a number of objects that are used daily and on a large scale in households, which although they could be made from recyclable materials, to date this is not the case. Indicatively, the sponges used for cleaning household utensils, are made so far from non-recyclable materials and are disposed of in the environment, without any provision for their recycling. Synthetic sponges produce pollutants, phthalates and hazardous gases throughout the production process. Paints are further commonly used, the use of which is specifically blamed for polluting the aquifer and the marine ecosystem, if disposed of in coastal areas.

[0005] An additional disadvantage of synthetic sponges is that due to their density, they require significant amounts of water for rinsing, while also requiring careful squeezing to expel the water they have retained. Otherwise, both their lifespan and absorption capacity are reduced and growth of microorganisms, harmful to the consumers' health, is favoured.

[0006] It is thus an object of the present invention to deal with the aforementioned disadvantages and shortcomings of the prior art by proposing a method of producing a sponge for cleaning utensils from vegetable raw material and in particular from the luffa plant. A further object is to present the corresponding final product produced by the application of this method is a further object.

[0007] A further feature of the present invention is to provide a finished product, which is completely ecological, can be disposed of together with degradable organic, household waste, and may even be disposed of in the ground.

[0008] A further advantage of this invention is that it provides a sponge for household use, which does not burden the environment in any way when disposed of.

[0009] A further advantage of the invention is that it discloses a method which, when applying the production steps, does not consume resources in thermal energy, phthalates and does not contribute to the production of hazardous gases to the environment or production workers.

[0010] A further advantage of a household sponge produced by this method is that when it gets wetted, due to its natural texture and shaping, it easily creates foam from the dishwashing detergent, which it retains in its mass.

[0011] A further advantage of the sponge is that due to the irregular shape of its surface, it easily cleans all greasy dirt and burnt fats, without creating scratches on the surface of household utensils.

[0012] The sparse mass structure of the sponge contributes to its easier rinsing, resulting in significant savings of water resources, which is another advantage of the invention.

[0013] In addition, due to the properties of the plant raw material, i.e. the luffa, the sponge drains more easily and dries faster than synthetic sponges, since the natural shaping of luffa evacuates water more rapidly. This results in prevention of microorganism and bacteria growth in the environment of the sponge, which could potentially pose a risk to the health of the consumer.

[0014] These and other objects, features and advantages of the invention will become apparent in the following detailed description.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

[0015] The invention will become apparent to those skilled in the art with reference to an illustrative example of its application and a detailed presentation of the steps required for its implementation.

[0016] The plant raw material comes from the luffa plant, which botanically belongs to the family of cucurbitaceae and is a species related to zucchini. The plant grows and blooms in the spring, when the fruit is cut from the tree. The fruit, which is elongated, is allowed to dry, naturally or artificially, to dry the inside. It is then soaked in water to soften its outer surface and make it easier to peel, followed by its cleaning, the removal of its seeds with the use of water and its drying. Due to the elongated shape of the fruit, it is cut into at least two pieces and then each piece is cut lengthwise to form a flat surface.

[0017] The flat surface of luffa is sewn on the inside with the use of cotton thread or lining of non-woven fabric with a cotton towel, to create a sponge for cleaning utensils, the sponge consisting on the one side of a soft, cotton cloth and the other side of the natural weave of the plant raw material.

[0018] It should be noted here that the description of

the invention has been made with reference to illustrative embodiments, to which it is not limited. Therefore any change or modification in terms of dimensions, steps of the method, the construction materials used, as long as they are not a new inventive step and do not contribute to the technical development of the already known are considered to be contained in the purposes and aspirations of the present invention as are summarized in the following claims.

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Claims

1. A method for producing a sponge made of vegetable raw material for cleaning utensils, where the vegetable raw material is cut as fruit from a plant, dried naturally or artificially, soaked in water, peeled, cleaned using water and dried, cut into at least two pieces, where each piece is cut lengthwise and sewn using cotton thread with a cotton towel, **characterized in that** luffa is used as vegetable raw material. 15 20
2. A sponge made of vegetable raw material for cleaning utensils, consisting of a cotton towel sewn with cotton thread with a vegetable raw material, **characterized in that** luffa is used as the vegetable raw material. 25

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| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|--|--|---|---|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
| X | WO 2016/076815 A1 (KOBZA TETYANA IVANIVNA [UA]) 19 May 2016 (2016-05-19) * page 7, lines 3-8 * | 1,2 | INV. A47K7/02 A47L17/08 |
| X | ----- CN 209 789 707 U (YANG ZHICHONG) 17 December 2019 (2019-12-17) * paragraph [0021] * | 1,2 | |
| X | ----- US 9 867 508 B2 (XAMAX IND INC [US]) 16 January 2018 (2018-01-16) * column 6, lines 32-37 * | 1,2 | |
| X | ----- CN 2 126 031 U (CHENG ZHULIN [CN]) 30 December 1992 (1992-12-30) * page 4, lines 9-13 * | 1,2 | |
| | ----- | | |
| | | | TECHNICAL FIELDS SEARCHED (IPC) |
| | | | A47K A47L A61D A46B |
| The present search report has been drawn up for all claims | | | |
| Place of search The Hague | | Date of completion of the search 10 November 2021 | Examiner Boyer, Olivier |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document | | T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | |

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|---|--|
| WO 2016076815 A1 | 19-05-2016 | UA 113531 U WO 2016076815 A1 | 10-02-2017 19-05-2016 |
| ----- | ----- | ----- | ----- |
| CN 209789707 U | 17-12-2019 | NONE | |
| ----- | ----- | ----- | ----- |
| US 9867508 B2 | 16-01-2018 | CA 3007397 A1 US 2017156551 A1 US 2018153356 A1 WO 2017096402 A1 | 08-06-2017 08-06-2017 07-06-2018 08-06-2017 |
| ----- | ----- | ----- | ----- |
| CN 2126031 U | 30-12-1992 | NONE | |
| ----- | ----- | ----- | ----- |

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82