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(54) **TOBACCO DOUGH AND A METHOD FOR ITS MANUFACTURE**

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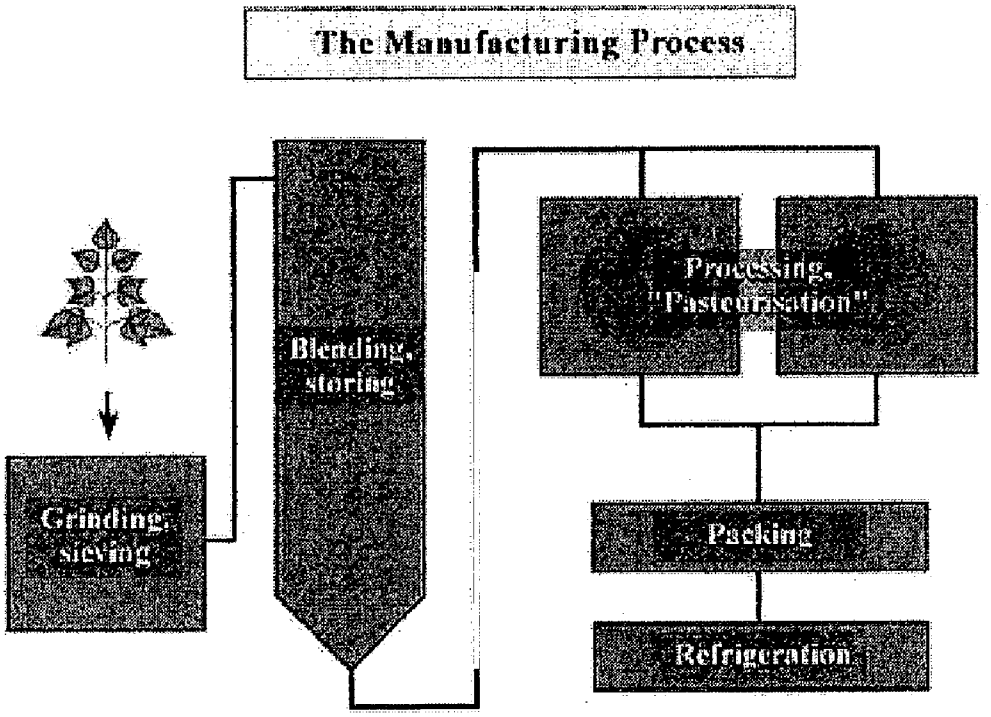
(57) **ABSTRACT**

A smoke-less tobacco composition includes at least one thickening agent such as xanthan gum or a mixture of xanthan gum and galactomannan.

Fig 1


The Manufacturing Process
Grinding, sieving
Blending, storing
Processing, "Pasteurisation"
Packing
Refrigeration

TOBACCO DOUGH AND A METHOD FOR ITS MANUFACTURE

[0001] This invention concerns the technical field of tobacco products, preferably moist snuff, in particular a smoke-less tobacco composition comprising a thickening agent, a method for obtaining a smoke-less tobacco products, preferably a moist snuff, comprising one or more thickening agents, and a smoke-less tobacco product obtainable from said method.

BACKGROUND

[0002] Moist snuff and other tobacco products presently available on the market are difficult to form. Their formability is very limited which is a drawback for consumers wishing to form a certain amount of tobacco product, preferably moist snuff, into a dainty and inviting piece of tobacco product. Also the water keeping characteristics of the tobacco products of today have drawbacks. Thus it is desirable to be able to provide a method for obtaining an easily formable tobacco product and also a such product with enhanced water keeping characteristics.

SUMMARY OF THE INVENTION

[0003] The present invention solves one or more of the above problems by providing according to a first aspect a smoke-less tobacco composition comprising at least one thickening agent. According to second aspect of the invention a method for manufacturing a composition according to the first aspect is provided.

DETAILED DESCRIPTION OF THE INVENTION

[0004] It is intended throughout the present description that the expression "tobacco raw material" or "tobacco" (used interchangeably in the present description) embrace any tobacco type available or mixtures thereof. Examples of tobacco types are: Rustika, Va., Burley, Oriental and Kentucky. Preferably the tobacco is tobacco in powder form, moist snuff or finely divided tobacco. Most preferred the tobacco is moist snuff produced essentially in accordance with GothiaTek® (trademark owned by Swedish Match) standard. The smoke-less tobacco composition (or smoke-less tobacco product) according to the first aspect of the invention is preferably a chewing tobacco, nose snuff or a moist snuff product, most preferred a moist snuff product. The smoke-less tobacco composition (or smoke-less tobacco product) according to the first aspect of the invention is especially preferred a "snus" or a moist snuff product manufactured in accordance with GothiaTek® standard.

[0005] It is intended throughout the present description that the expression "thickening agent" embrace any thickening agent or mixtures thereof for use in food products. The thickening agent is preferably selected from the group consisting of guar gum (E412), Acacia gum (incl. gum Arabic E414), xanthan gum (E415), Locust bean gum (Carob) (E410), alginates (E400 to 405), carboxymethylcellulose (CMC) (E466), other types of cellulose (E460 till E465), pectins (E440), carrageenan (E407), Furcellaran, Tragacanth gum (E413), Karaya gum (E416), galactomannan and Gellan gum (E418) or combinations (mixtures) thereof. The thickening agent is not necessarily limited to the above group but can also be any other substance capable of giving a similar consistency as a thickening agent selected from the above group or a mixture thereof. Most preferred mixtures are those comprising xanthan gum. Especially preferred are mixtures comprising a) xanthan gum and galactomannan; and b) Acacia gum and xanthan gum; preferably thickening agents sold under the trade marks Thixogum S™ and Thixogum X™ (trademark owned by Colloides Naturels, Inc) e.g. provided by Kemiflor AB. Especially preferred is Thixogum S™. The thickening agent is preferably added in the form of an aqueous solution or dispersion giving 0.00001-20% (weight) of thickening agent in the end product. The thickening agent is then treated before added to the tobacco as follows: The thickening agent is added, preferably by dusting, into an aqueous solution under heating and vigorous stirring, preferably when a vortex appears in the solution. The thickening agent may also be "dusted" without using a carrier, i.e. a liquid as set out above, into the tobacco. The tobacco is then treated so that a large surface area is available for the thickening agent dust to blend in. The tobacco end product preferably has a content of thickening agent(s) of from 0.00001 to 2% (weight/weight), preferably 0.00001 to 0.6%. The desired characteristics of the end product may also be amplified by adding compounds comprising potassium and/or calcium-ions.

[0006] "Snus", i.e. one example of a moist snuff, produced in accordance with GothiaTek® standard is manufactured using essentially the following method set out below: The moist snuff is made from selected tobaccos, salts, humectants and flavour additives. The moist snuff is made from mainly air cured tobaccos. Traditionally fire-cured tobacco may also be used. Tobacco may be purchased from North and South America, Asia and also from a few countries in Africa and Europe. Tobacco samples are taken already in the farmers barns and sent to laboratories for analysis. When making "snus" the main ingredients except for tobacco are normally water, salt (table salt; NaCl) and sodium carbonate. Flavour additives and humectants may also be used. However in the present invention one or more thickening agents are added to the tobacco composition, preferably a moist snuff composition. Salt is added mainly for its effect on taste but also has a preservative action which contributes to improved shelf life of the products. Sodium carbonate is used to give the products their characteristic flavour profile but also brings the pH value to the slightly alkaline side. Sodium carbonate will convert to baking soda immediately after it is added. Flavour additives in general are natural or artificial flavour compounds that comply with food regulations. Flavours are usually dissolved in alcohol when added. Most of the alcohol evaporates during production. Only trace quantities remain. Humectants may also be added to protect the products from drying out. Two types may be used: glycerol and propylene glycol. Both of them also have a preservative effect since they lower the water activity of the product, thus preventing microorganisms from growing.

[0007] The moist snuff is manufactured in three major steps, a) grinding (cutting), b) processing and c) packing (see also **FIG. 1**).

[0008] a) Grinding, Sieving

[0009] The tobacco is broken up, dried and fed into a grinder. The ground tobacco is sieved into three particle size fractions, coarse, medium and fine. Pre-set quantities of the

three fractions are fed into a mixer silo where the tobacco flour is mixed. After blending, the tobacco flour is fed into a storage silo, from which flour is automatically taken to the processing operation. Each type of tobacco flour is kept in a separate silo.

[0010] b) Processing

[0011] Manufacturing of moist snuff is preferably done in a batch operation. The whole process may be computer controlled and can be run day and night, all week around. To start the process, tobacco flour is automatically weighed and fed into the process blender. Water and salt is added to the batch under stirring. The batch is then heated and kept heated up for a specified time, which varies with brands. Temperature and stirring is preferably controlled by a process computer program. This part of the process is traditionally named "sweating" but is more close to a pasteurisation process. After pasteurisation the moist snuff batch is cooled down and the rest of the ingredients are added. The thickening agent may be added, in accordance with the present invention, at any time during the above processing steps. The thickening agent(s) is (are) preferably added at the end of the processing. The thickening agent(s) is (are) further preferably added in the form of a solution as set out above. The power of the mixing and the time period for the mixing may be crucial for obtaining an optimal product. Some of the above mentioned water may be used to form an aqueous solution of the thickening agent before adding said agent to the tobacco during the above process. This may enhance the water keeping characteristics of the end product, preferably a moist snuff. The water-binding characteristics of the thickening agent(s) may also reduce the microbiological growth.

[0012] c) Packing of Loose Moist Snuff

[0013] Containers, preferably cans, may be filled in automatic filling machines. Filled cans are preferably sealed with a lid. After lidding all cans are weighed on a check-weigher, which also regulates the filling volume of the cans. Then the cans may be labelled in a labelling machine, shrink-sealed in a distribution pack and packed in cases.

[0014] Packaging Material

[0015] Paraffin coated cardboard cans or plastic cans may preferably be used for most loose moist snuff and obviously also for "snus". The lids are preferably made of polypropylene. For the pouch products cans may be used which are made of polypropylene. Pouch products are more sensitive to drying than loose moist snuff so plastic cans help to increase shelf life of these products.

[0016] The paper material used to pack individual pouches may be made of viscose. When sealing an adhesive which is approved as packaging material in contact with food is preferably used.

[0017] Cold Storage

[0018] All finished moist snuff (including "snus") may preferably be kept in a cold storage a few days before it is shipped out to the trade in order to ripen and obtain its characteristic flavour.

[0019] According to a preferred embodiment of the first aspect of the present invention there is provided a smokeless tobacco composition, which is a moist snuff composition, preferably snus.

[0020] According to a preferred embodiment of the first aspect of the present invention there is provided a smokeless tobacco composition wherein the content of the thickening agent(s) is from 0.00001 to 20% (weight/weight), preferably from 0.00001 to 2% (weight/weight), most preferred 0.00001 to 0.6% in the end product.

[0021] According to a preferred embodiment of the first aspect of the present invention the thickening agent is xanthan gum or a mixture comprising xanthan gum.

[0022] According to a preferred embodiment of the first aspect of the present invention there is provided a smokeless tobacco composition wherein the thickening agent is a mixture comprising a) xanthan gum and galactomannan or b) Acacia gum and xanthan gum, preferably Thixogum S™ or Thixogum X™, most preferred Thixogum S™.

[0023] According to a preferred embodiment of the second aspect of the present invention there is provided a method wherein the thickening agent is a mixture comprising a) xanthan gum and galactomannan or b) Acacia gum and xanthan gum, preferably Thixogum S™ or Thixogum X™, most preferred Thixogum S™.

[0024] According to a preferred embodiment of the second aspect of the present invention there is provided a method for obtaining a moist snuff composition according to the first aspect comprising the following steps:

[0025] a) grinding, cutting and optionally sieving, of tobacco raw material,

[0026] b) processing of tobacco (preferably in the form of a flour) obtained in step a);

[0027] c) and optionally packing,

[0028] wherein at least one thickening agent is added during the processing step b).

[0029] Preferably step b), i.e. the processing, comprises the following steps:

[0030] i) adding water and NaCl to the tobacco flour under stirring to form a mixture;

[0031] ii) heating and keeping the mixture heated up for a specified time, thus achieving a pasteurisation or "sweating" of the mixture;

[0032] iii) cooling the moist snuff mixture; and

[0033] iv) adding at least one thickening agent and optionally other ingredients such as other salts (e.g. sodium carbonate), humectants and flavour additives.

[0034] According to a preferred embodiment of the second aspect of the present invention the thickening agent is added in the form of an aqueous solution or dispersion giving 0.00001-20% (weight) of thickening agent in the end product.

[0035] According to a preferred embodiment of the second aspect of the present invention the thickening agent is added in solid form giving 0.00001-20% (weight) of thickening agent in the end product.

[0036] According to a preferred embodiment of the second aspect of the present invention the thickening agent is xanthan gum or a mixture comprising xanthan gum, pref-

erably a mixture comprising a) xanthan gum and galactomannan or b) Acacia gum and xanthan gum, most preferred Thixogum S™ or Thixogum X™, especially preferred Thixogum S™.

[0037] According to a preferred embodiment of the second aspect of the present invention there is provided a smokeless tobacco product obtainable by the above method.

[0038] According to a preferred embodiment of the second aspect of the present invention there is provided a moist snuff composition obtainable by the above method.

[0039] According to a preferred embodiment of the first aspect of the present invention there is provided a smokeless tobacco product or a moist snuff composition presented in the form of a reel or coil, optionally equipped with spacing paper intermediate the layers in the reel or coil.

[0040] According to a preferred embodiment of the first aspect of the present invention there is provided a container containing a smoke-less tobacco product or a moist snuff composition according to the first aspect of the invention, wherein preferably said container is a can, most preferred a can provided with a lid.

[0041] The method according to the second aspect of the invention may further be used in other moist snuff manufacturing processes such as in the manufacturing process disclosed in U.S. Pat. No. 4,528,993.

[0042] Preferred features of each aspect of the invention are as for each of the other aspects mutatis mutandis. The prior art documents mentioned herein are incorporated to the fullest extent permitted by law. The invention is further described in the following examples in conjunction with the appended figure, which do not limit the scope of the invention in any way. Embodiments of the present invention are described in more detail with the aid of examples of embodiments and figure, the only purpose of which is to illustrate the invention and are in no way intended to limit its extent.

SHORT DESCRIPTION OF THE FIGURES

[0043] **FIG. 1** shows the manufacturing process of moist snuff in accordance with GothiaTek® standard. The thickening agent(s) may be added at any time of the processing step.

EXAMPLES

[0044] Moist snuff was manufactured in accordance with the GothiaTek standard as set out above and two different thickening agents were added in two different batches of moist snuff during the processing step as set out above. The thickening agents were Thixogum S™ and Thixogum X™ provided by Kemiflor AB. The thickening agents were added during the processing steps ("pasteurisation") as set out above. Two different tobacco "doughs" were obtained. Both moist snuff products demonstrated good performance with regards to plasticity and unity. Both the plasticity and the unity characteristics were enhanced in comparison with "normal" moist snuff manufactured in accordance with the GothiaTek standard. The best results were obtained using Thixogum S™ but also Thixogum X™ provided good results.

[0045] Various embodiments of the present invention have been described above but a person skilled in the art realizes further minor alterations, which would fall into the scope of the present invention. The breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents. For example, any of the above-noted methods can be combined with other known methods. Other aspects, advantages and modifications within the scope of the invention will be apparent to those skilled in the art to which the invention pertains.

1. A smoke-less tobacco composition comprising at least one thickening agent.

2. A tobacco composition according to claim 1 characterized by that it is moist snuff composition, preferably snus.

3. A tobacco composition according to claim 1 or **2** characterized by that the content of the thickening agent(s) is from 0.00001 to 20% (weight/weight), preferably from 0.00001 to 2% (weight/weight), most preferred 0.00001 to 0.6%.

4. A tobacco composition according to any one of claims 1 to 3 wherein the thickening agent is xanthan gum or a mixture comprising xanthan gum.

5. A tobacco composition according to any one of claims 1 to 4 wherein the thickening agent is a) xanthan gum and galactomannan or b) Acacia gum and xanthan gum, preferably Thixogum S™ or Thixogum X™, most preferred Thixogum S™.

6. A method for obtaining a smokeless tobacco composition according to claim 1 comprising adding at least one thickening agent to a tobacco raw material.

7. A method according to claim 6 wherein the thickening agent is a mixture comprising a) xanthan gum and galactomannan or b) Acacia gum and xanthan gum, preferably Thixogum S™ or Thixogum X™, most preferred Thixogum S™.

8. A method for obtaining a moist snuff composition according to claim 2 comprising the following steps:

a) grinding or cutting and optionally sieving, of tobacco raw material,

b) processing of tobacco obtained in step a);

c) and optionally packing,

wherein at least one thickening agent is added during the processing step b).

9. A method according to claim 8 wherein step b) comprises the following steps:

i) adding water and NaCl to the tobacco flour under stirring to form a mixture;

ii) heating and keeping the mixture heated up, thus achieving a pasteurisation or "sweating" of the mixture;

iii) cooling the moist snuff mixture; and

iv) adding at least one thickening agent and optionally other ingredients such as other salts, humectants and flavour additives.

10. A method according to any one of claim 6 to **9** wherein the thickening agent is added in the form of an aqueous solution or dispersion giving 0.00001-20% (weight) of thickening agent in the end product.

11. A method according to any one of claim 6 to **10** wherein the thickening agent is added in a solid form giving 0.00001-20% (weight) of thickening agent in the end product.

12. A method according to any one of claim 6 to **11** wherein the thickening agent is xanthan gum or a mixture comprising xanthan gum, preferably a mixture comprising a) xanthan gum and galactomannan or b) Acacia gum and xanthan gum, most preferred Thixogum S™ or Thixogum X™, especially preferred Thixogum S™.

13. A smoke-less tobacco product obtainable by a method according to any one of claims 6 to 7.

14. A moist snuff composition obtainable by a method according to any one of claims 8 to 12.

15. A smoke-less tobacco product according to claim 1 or **13** or a moist snuff composition according to claim 2 or **14** presented in the form of a reel or coil, optionally equipped with spacing paper intermediate the layers in the reel or coil.

16. A container containing a smoke-less tobacco product according to claim 1 or **13** or a moist snuff composition according to claim 2 or **14**, wherein preferably said container is a can, most preferred a can provided with a lid.

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