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(54) Tobacco based casing

(57) A method includes forming a suspension of tobacco material and water, and applying the suspension on a tobacco product or a component of a smoking article to form a coated tobacco product or coated component. The method also includes removing at least a portion of the water from the coated tobacco product or coated component.

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Description

[0001] The present disclosure relates to tobacco based casing and a tobacco based casing suspension that can be applied to a tobacco product.

[0002] Combustible smoking articles, such as cigarettes, have shredded tobacco (tobacco cut filer) surrounded by a paper wrapper forming a tobacco rod. A cigarette is employed by a smoker by lighting one end thereof and burning the shredded tobacco rod. The smoker then receives mainstream smoke into their mouth by drawing on the mouth end or filter end of the cigarette. The shredded tobacco can be a single type of tobacco or a blend of two or more types of tobacco depending of the brand of cigarette.

[0003] A number of smoking articles in which an aerosol generating substrate, such as tobacco, is heated rather than combusted have also been proposed in the art. In heated smoking articles, the aerosol is generated by heating the aerosol generating substrate. Known heated smoking articles include, for example, smoking articles in which an aerosol is generated by electrical heating or by the transfer of heat from a combustible fuel element or heat source to an aerosol generating substrate. During smoking, volatile compounds are released from the aerosol generating substrate by heat transfer from the heat source and entrained in air drawn through the smoking article. As the released compounds cool they condense to form an aerosol that is inhaled by the consumer. Also known are smoking articles in which a nicotine-containing aerosol is generated from a tobacco material, tobacco extract, or other nicotine source, without combustion, and in some cases without heating, for example through a chemical reaction.

[0004] Some smoking articles include a filter segment including functional materials that capture or convert components of the smoke from the smoking article or release materials into the smoke as smoke is being drawn through the filter. Such functional materials are known and include, for example, sorbents, catalysts and flavourant materials.

[0005] Tobacco cut filler can be sprayed with a casing material to modify taste of the tobacco cut filler during use by a consumer. Casing materials can include aqueous plant extract, coffee, alfalfa, honey, sugar, licorice, cacao and humectants like glycerine, as well as other materials.

[0006] Various treatment methods and additives have been proposed for altering the overall character or taste of the tobacco utilized in smoking articles. For example, additives or treatment processes have been utilized to alter the chemistry or sensory properties of the tobacco or mainstream smoke generated by the tobacco.

[0007] It would be desirable to provide smoking articles that includes tobacco-based material to enhance the sensory characteristics of a tobacco blend.

[0008] According to the current disclosure, there is provided a method including forming a suspension of tobacco material and a carrier such as, water for example, and applying the suspension on a tobacco product or component of a smoking article to form a coated tobacco product or component. The method also includes removing at least a portion of the water or carrier to form the coated tobacco product or component.

[0009] Smoking articles or tobacco products that include components coated with a suspension of tobacco material and water according to the present disclosure provide an effective way to enhance the tobacco taste provided by the smoking article or tobacco product. In addition, portions of the tobacco substrate can be selectively coated with the suspension of tobacco material and water according to the present disclosure to provide flavour timing as the smoking article is utilized. Substantially intact tobacco leaf and flower material can be utilized or directly included in the suspension and added to the tobacco product, tobacco substrate or mouthpiece.

[0010] All scientific and technical terms used herein have meanings commonly used in the art unless otherwise specified. The definitions provided herein are to facilitate understanding of certain terms used frequently herein.

[0011] The term "tobacco flower" is used herein to indicate a flower of *Nicotiana* species plant. The terms "tobacco flower" and "flower of *Nicotiana* species" is used herein to indicate both a single species of *Nicotiana* and two or more species of *Nicotiana* forming a flower blend.

[0012] The term "flower" is used herein to indicate the characteristic reproductive structure of the plant and includes the whole flower or a portion thereof. A tobacco flower is the characteristic reproductive structure of the plant of the *Nicotiana* genus. Various parts or portions of the flower can be employed. For example, the entire or substantially the entire flower (the whole flower) can be employed including the petal, sepal and receptacle together. Alternatively, various parts or portions of the flower can be employed. For example, the petal, corolla, sepal, receptacle, anther, filament, stigma, stamen, style, pistil, pedicel, ovary or combinations thereof can be isolated and employed.

[0013] The term "tobacco product" refers to a smoking article or a smokeless tobacco product.

[0014] The term "smoking article" is used herein to indicate cigarettes, cigars, cigarillos and other articles in which a smokable material, such as a tobacco, is lit and combusted to produce smoke. The term "smoking article" also includes articles in which smokable material is not combusted such as but not limited to smoking articles that heat the smoking composition directly or indirectly, or smoking articles that neither combust nor heat the smoking composition, but rather use air flow or a chemical reaction to deliver nicotine or other materials from the smokable material.

[0015] The term "smokeless tobacco product" includes tobacco products that are inserted into the mouth of the user. An example of a smokeless tobacco product is "snuff", commonly referred to as "snus".

[0016] The term "tobacco substrate" is used herein to indicate the portion of the smoking article that includes tobacco. The tobacco substrate can be the portion of the smoking article that includes tobacco cut filler. The tobacco substrate can be connected to the mouthpiece or filter in an end-to-end relationship, as further discussed below.

[0017] The term "mouthpiece" is used herein to indicate the portion of the smoking article that is designed to be contacted with the mouth of the consumer. The mouthpiece can be the portion of the smoking article that includes the filter, or in some cases the mouthpiece can be defined by the extent of the tipping paper. In other cases, the mouthpiece can be defined as a portion of the smoking article extending about 40 mm from the mouth end of the smoking article, or extending about 30 mm from the mouth end of the smoking article.

[0018] The term "tobacco cut filler" is used herein to indicate tobacco material that is predominately formed from the lamina portion of the tobacco leaf. The terms "tobacco cut filler" is used herein to indicate both a single species of *Nicotiana* and two or more species of *Nicotiana* forming a tobacco cut filler blend.

[0019] The phrase "substantially intact epidermal cellular structure" refers to an epidermal cellular structure that has not been disrupted by chemical processes (such as extraction for example) or otherwise disrupted. Preferably the only processing experienced by the cellular structure may be removal or addition of water, size reduction via cutting or grinding, or both. This intact cellular structure can then be directly added water or carrier to form the suspension and sprayed, for example, into the tobacco product.

[0020] The term "reconstituted tobacco" is used herein to indicate a tobacco substrate that has been formed from tobacco materials such as tobacco dust and tobacco fragments from tobacco processing or handling, for example. This tobacco materials created by tobacco breakage during shipping and manufacturing, leaf lamina, stems and other tobacco materials that are finely ground may be mixed with a binder to agglomerate the particulate tobacco. The agglomerated tobacco may include other additives, including but not limited to, aerosol-formers (such as glycerine or propylene glycol), plasticizers, humectants, and non-tobacco fibers, fillers, aqueous and non-aqueous solvents and combinations thereof. The agglomerated tobacco can be cast, extruded, or rolled. A number of reconstitution processes for producing homogenized tobacco materials are known. These include, but are not limited to: paper-making processes of the type described in, for example, US 5,724,998; casting processes of the type described in, for example, US 5,724,998; dough reconstitution processes of the type described in, for example, US 3,894,544; and extrusion processes of the type described in, for example, in GB 983,928.

[0021] The terms "upstream" and "downstream" refer to relative positions of elements of the smoking article described in relation to the direction of mainstream smoke as it is drawn from a tobacco rod and through the filter and mouthpiece.

[0022] The term "smoke" is used herein to indicate smoke produced by combustible smoking articles, such as cigarettes, and aerosols produced by non-combustible smoking articles as described above.

[0023] The term "percent oven volatiles" or "%OV" is determined by measuring the percentage weight loss from the sample upon drying the sample in an oven at 103 degrees centigrade for 100 minutes.

[0024] As used in this specification and the appended claims, the singular forms "a", "an", and "the" encompass embodiments having plural referents, unless the content clearly dictates otherwise.

[0025] As used in this specification and the appended claims, the term "or" is generally employed in its sense including "and/or" unless the content clearly dictates otherwise.

[0026] As used herein, "have", "having", "1include", "including", "comprise", "comprising" or the like are used in their open ended sense, and generally mean "including, but not limited to". It will be understood that "consisting essentially of", "consisting of", and the like are subsumed in "comprising," and the like.

[0027] The words "preferred" and "preferably" refer to embodiments of the invention that may afford certain benefits under certain circumstances. However, other embodiments may also be preferred under the same or other circumstances. Furthermore, the recitation of one or more preferred embodiments does not imply that other embodiments are not useful, and is not intended to exclude other embodiments from the scope of the disclosure, including the claims.

[0028] The present disclosure provides a method including forming a suspension of tobacco material and water and applying the suspension on a component of a smoking article to form a coated component. The method also includes removing at least a portion of the water from the coated component. The suspension provides an effective way to enhance the sensory characteristics of the tobacco. The tobacco material in the suspension (and that is coated onto the smoking article component) has a substantially intact epidermal cellular structure.

[0029] In another embodiment, the suspension of tobacco material disclosed herein can be used in a smokeless product, for example smokeless products that comprise tobacco particles or cut or shredded tobacco. As such, any reference to the suspension of tobacco materials herein that can be used in cut filler may also be used in a smokeless product.

[0030] The tobacco material suspension includes a carrier such as, for example water and tobacco material. In preferred embodiments, the tobacco material includes tobacco flowers. In some other preferred embodiments, the tobacco material includes tobacco leaf material. In some further preferred embodiments, the tobacco material includes tobacco leaf material and tobacco flowers.

[0031] In many embodiments, the tobacco material suspension has at least about 0.1% by weight tobacco flower or tobacco leaf or combinations thereof. In some embodiments, the tobacco material suspension has at least about 1% by weight tobacco flower or tobacco leaf or combinations thereof. In some embodiments, the tobacco material suspension has at least about 3% by weight tobacco flower or tobacco leaf or combinations thereof. In some embodiments, the tobacco material suspension has at least about 5% by weight tobacco flower or tobacco leaf or combinations thereof. In some embodiments, the tobacco material suspension has from about 0.1 to 40% by weight tobacco flower or tobacco leaf or combinations thereof or from 0.1 to 25% by weight tobacco flower or tobacco leaf or combinations thereof. In some preferred embodiments the tobacco material is substantially all either tobacco leaf or tobacco flower.

[0032] In some embodiments, the tobacco material suspension can additionally include casing materials such as aqueous plant extract, coffee, alfalfa, honey, sugar, liquorice, cacao and humectants like propylene glycol, glycerine, and the like.

[0033] The tobacco material suspension can have any solids weight % or viscosity that allows the tobacco material suspension to be applied via a spray nozzle. In some preferred embodiments, the tobacco material suspension has a solids weight % of less than about 50 weight %. In other preferred embodiments, the tobacco material suspension has a solids weight % of less than about 33 weight %. In still further preferred embodiments, the tobacco material suspension has a solids weight % in a range from about 0.1 to about 25 weight %.

[0034] The tobacco material in the suspension can have an average particle size of less than about 250 micrometres, or less than about 100 micrometres. In preferred embodiments, the tobacco material suspension has an average particle size in a range from about 10 to about of 250 micrometres or about 10 to about of 100 micrometres. The term "particle size" refers to the largest cross sectional dimension of an individual particle within the particulate material. The "average" particle size refers to the arithmetic mean particle size for the particles. The particle size distribution for a sample of particulate material may be determined using a known sieve test, or by examining the particles individually under magnification.

[0035] The tobacco material suspension can be directly added to the tobacco product or components of a smoking article by coating the tobacco material suspension onto the smoking article component to provide aroma or taste elements to the tobacco blend. The tobacco suspension is applied to the components of a smoking article by any useful method. In some preferred embodiments, the tobacco suspension is applied to the components of a smoking article by spraying.

[0036] In some embodiments the tobacco material is in particulate form and can be added to the tobacco product (cut tobacco filler) by being sprayed onto the tobacco product (for example, as a casing). In many of these embodiments, at least a portion of the tobacco material sprayed onto the cut or ground tobacco remains adhered to the cut or ground tobacco. Tobacco material that is adhered to the cut or ground tobacco reduces the amount of tobacco material that may fall out of the cut filler, thus providing a more stable or consistent tobacco material/tobacco blend.

[0037] In preferred embodiments, the applying step coats the tobacco product or the component of a smoking article to form a coated component of a smoking article having at least about 1% by weight coated tobacco material on the tobacco product or the components of a smoking article. In preferred embodiments, the applying step coats the tobacco product or the components of a smoking article to form a coated component of a smoking article having at from about 1% to 10 % by weight coated tobacco material on the tobacco product or the component of a smoking article. The coated tobacco material can include all tobacco flower or all tobacco leaf or a combination of the tobacco flower and tobacco leaf, as desired. Illustrative components of a smoking article that can be coated with the tobacco material suspension described herein include, tobacco cut filler, cigarette paper, plug wrap, filter plug, and reconstituted tobacco.

[0038] Substantially intact tobacco flowers or leaf can be utilized in the tobacco material suspension via simple addition of the tobacco flowers or leaf to water. In other words the tobacco flowers or leaf with a substantially intact epidermal cellular structure are added to water to form the tobacco material suspension. The tobacco flowers or leaf can be dried to a specific percent oven volatiles (%OV) range and then divided into a plurality of particles and then incorporated into the tobacco material suspension. In many embodiments the tobacco flowers or leaf are dried to a range from about 1 to 15 %OV. In some embodiments, the tobacco flowers or leaf are dried with a freeze drying process.

[0039] The tobacco flower or leaf includes both a single species of *Nicotiana* and two or more species of *Nicotiana* forming a flower or leaf blend. Specific *Nicotiana* species plants (useful for flower or cut filler) includes: *glauca; paniculata; knightiana; solanifolia; benavidesii; cordifolia; raimondii; thyrsiflora; rustica; tomentosa; tomentosiformis; otophora; kawakamii; glutinosa; tabacum; undulate; arentsii; wigandioïdes; trigonophylla; palmeri; sylvestris; langsdorffii; alata; forgetiana; bonariensis; longiflora; plumbaginifolia; repanda; stocktonii; nesophila; noctiflora; petunioïdes; acaulis; ameghinoi; acuminate; pauciflora; attenuate; miersii; corymbosa; linearis; spegazzinii; bigelovii; clevelandii; nudicaulis; benthamiana; umbratica; cavicola; debneyi; gossei; amplexicaulis; maritime; velutina; hesperis; occidentalis; simulans; megalosiphon; rotundifolia; excelsior; suaveolens; ingulba; exigua; goodspeedii; fragrans; Africana; stenocarpa; wuttkei; setchellii; and purpurea.* In many embodiments, the *Nicotiana* species plants includes varieties such as: Red Russian, K326, Lakson, Kasturi, Kasturi Asep, Tombak, Basma Zihna, Basma Drama, or TI1112. Generally,

Nicotiana species plants include various types of tobaccos including flue-cured or Virginia, Burley, sun cured, Maryland Dark and light air-cured or tobacco plant introduction such as TI1112. Specific oriental varieties include Izmir and Samsun, for example. A specific variety of burley includes TN90. Tobaccos derived from *Nicotiana* species could be fermented such as Perique or processed using thermal treatment. It is understood that the tobacco material suspension can include one or more species of tobacco flower along with one or more species of tobacco leaf.

[0040] The tobacco substrate is the portion of the smoking article that is designed to produce the tobacco smoke. The tobacco substrate can be the portion of the smoking article that includes tobacco cut filler. The tobacco substrate can be connected downstream to the mouthpiece or filter in an end-to-end relationship. The tobacco cut filler can be formed from one or more useful tobacco variety such as Burley tobacco, Oriental tobacco, Virginia tobacco or combinations thereof.

[0041] The tobacco suspension can be uniformly distributed throughout the tobacco cut filler of the tobacco substrate to provide a uniform tobacco taste as the smoking article is utilized by a user. In other embodiments, portions of the tobacco substrate or tobacco cut filler can be selectively coated with the suspension of tobacco material and water to provide flavour timing as the smoking article is utilized. In some preferred embodiments the tobacco material can be non-uniformly coated along a length of the tobacco substrate. For example, the % by weight coated tobacco material can increase from the lit end to the mouth end of the tobacco substrate, or decrease, or the highest % by weight coated tobacco material can be present somewhere between the lit end and the mouth end of the tobacco substrate. Changing an amount of coated tobacco material along a downstream length of the tobacco substrate can provide unique tobacco taste changes as the smoking article is utilized by a user. In preferred embodiments, the tobacco leaf coated onto the tobacco cut filler are different species or varieties of tobacco.

[0042] Cigarette paper is the portion of the smoking article that is disposed about the tobacco cut filler to help maintain the cylindrical form of the tobacco substrate. The tobacco suspension can be applied onto the cigarette paper. The tobacco suspension can be uniformly distributed onto the cigarette paper to provide a uniform tobacco taste as the smoking article is utilized by a user. In other embodiments, the tobacco suspension can be specifically located in one or more portions of the cigarette paper to provide specific timing of alteration of the tobacco taste as the smoking article is utilized by a user.

[0043] Portions of the cigarette paper can be selectively coated with the suspension of tobacco material and water to provide flavour timing as the smoking article is utilized. In some preferred embodiments the tobacco material can be non-uniformly coated along a length of the cigarette paper. For example, the % by weight coated tobacco material can increase from the lit end to the mouth end of the tobacco substrate, or decrease, or the highest % by weight coated tobacco material can be present somewhere between the lit end and the mouth end of the tobacco substrate. Changing an amount of coated tobacco material along a downstream length of the cigarette paper can provide unique tobacco taste changes as the smoking article is utilized by a user. In preferred embodiments, the tobacco leaf coated onto the cigarette paper is a different species or varieties of tobacco than the tobacco cut filler disposed within the coated cigarette paper.

[0044] Plug wrap is the portion of the smoking article that that is disposed about a filter plug to help maintain the cylindrical form of the filter plug. In conventional smoking articles, tipping paper is used to fix the filter plug in axial alignment with the tobacco substrate. The tobacco suspension can be applied onto the plug wrap or filter plug to form a coated plug wrap or coated filter plug. Preferably, the tobacco material is coated on the inside of the plug wrap. Since the coating of tobacco material coated on the plug wrap or filter plug is not combusted, they can provide a taste note that is different than the tobacco material coated on the cigarette paper and tobacco cut filler that are combusted in the tobacco substrate. In preferred embodiments, the tobacco leaf coated onto the plug wrap or filter plug is a different species or varieties of tobacco than the tobacco cut filler disposed within the coated cigarette paper.

[0045] In many embodiments the overall length of the smoking article is between about 70 mm and about 130 mm. In some embodiments the overall length of the smoking article is about 84 mm. The external diameter of smoking article can be between about 4.6 mm and about 8.5 mm, or between about 4.6 mm and about 7.4 mm for slim sized smoking articles or between about 7.4 mm and about 8.5 mm for regular sized smoking articles. The overall length of the filter of the smoking article can be between about 18 mm and about 50 mm. In some embodiments the overall length of the filter is about 27 mm.

[0046] The resistance to draw (RTD) of the smoking articles and the filters of the present disclosure can vary. In many embodiments the RTD of the smoking article with the filter is between about 50 to 200 mm H_2O. The RTD of a smoking article with the filter refers to the static pressure difference between the two ends of the specimen when it is traversed by an air flow under steady conditions in which the volumetric flow is 17.5 millilitres per second at the output end. The RTD of a specimen can be measured using the method set out in ISO Standard 6565:2002 with any ventilation blocked.

[0047] In one or more embodiments, smoking articles according to the present disclosure may be packaged in containers, for example in soft packs or hard packs or hinge-lid packs, with an inner liner coated with one or more flavourants.

Claims

1. A method comprising:

   forming a suspension comprising tobacco material and water;
   applying the suspension on a tobacco product or a component of a smoking article to form a coated component; and
   removing at least a portion of the water from the coated tobacco product or coated component.

2. The method according to claim 1 wherein the applying comprises spraying.

3. The method according to claim 2 wherein the tobacco material has an average size in a range from about 10 micrometres to about 250 micrometres.

4. The method according to any of claims 1 to 3 wherein the tobacco material comprises a flower of *Nicotiana* species plant.

5. The method according to claim 4 wherein the tobacco material comprises at least about 1% by weight flower of *Nicotiana* species plant.

6. The method according to any of claims 1 to 5 wherein the tobacco material comprises at least about 1% by weight tobacco leaf.

7. The method according to any of the preceding claims wherein the applying step comprises forming a coated tobacco product or coated component having at least about 1% by weight of the tobacco material.

8. The method according to any of the preceding claims wherein the forming step comprises forming a suspension comprising a flower of *Nicotiana* species plant and water, and the applying step comprises applying the suspension on tobacco cut filler to form the coated component.

9. The method according to any of claims 1 to 7 wherein the forming step comprises forming a suspension comprising a first species of tobacco and water, and the applying step comprises applying the suspension on a second species of tobacco cut filler being a different species than the first species, to form the coated component.

10. The method according to any of claims 1 to 7 wherein the applying step comprises applying the suspension on cigarette paper to form the coated component.

11. The method according to claims 1 to 7 wherein the applying step comprises applying the suspension on plug wrap to form the coated component.

12. The method according to any of claims 1 to 7 wherein the applying step comprises applying the suspension on a filter plug to form the coated component.

13. The method according to any of claims 1 to 7 wherein the applying step comprises applying the suspension on reconstituted tobacco to form the coated component.

14. The method according to any of the preceding claims wherein the forming step comprises forming a suspension further comprising a humectant.

15. The method according to any of the preceding claims wherein the applying step comprises applying the suspension onto only a portion of the component of a smoking article to form a partially coated component.

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EUROPEAN SEARCH REPORT

Application Number
EP 13 16 1703

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	US 6 499 489 B1 (COLEMAN III WILLIAM MONROE [US]) 31 December 2002 (2002-12-31) * claims * * column 5, line 9 - line 20 * * column 6, line 7 - column 7, line 3 * * page 9, line 1 - line 37 * * examples * -----	1-15	INV. A24B15/18 A24D3/14 A24D1/02 A24D3/02 A24B15/30

TECHNICAL FIELDS SEARCHED (IPC)

A24B
A24D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	23 July 2013	Neys, Patricia

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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23-07-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6499489 B1	31-12-2002	NONE	

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

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- US 3894544 A **[0020]**
- GB 983928 A **[0020]**