Description

This invention relates in general to chewing gum compositions, and, in particular, to gum compositions having a surface application of the proteinaceous materials thaumatin or monellin, which are high-potency flavor and sweetness enhancers.

As is well-kown in the art, chewing gum generally comprises chewable gum base, flavoring and a sweetener contained in a water-soluble bulking agent. Plasticizing agents and coloring may also be included.

Efforts have been made to improve the sweetness and flavor characteristics of chewing gum by using artificial sweeteners which are non-cariogenic and non-toxic and which have desirable organoleptic qualities. For example, dipeptide sweetening agents, particularly aspartame, have been found to be excellent sugar substitutes which have these characteristics. However, such sweeteners are expensive and, when mixed into chewing gum base as they typically are, provide only a limited initial sweetness impact. U.S. 2,305,960 discloses the dusting of a chewing gum composition with a rolling compound containing mannitol for the purpose of preserving the gum composition under adverse atmospheric conditions, such as high heat and humidity, to prevent the gum from adhering to the wrapper. The mannitol, which possesses a faint sweet, taste, is used as a preservative coating composition only.

EPA 27,024 discloses a method for coating chewing gum, however, addresses the use, and problems associated therewith, of aspartame only. According to the invention, the coating of aspartame onto the surface of chewing gum is for the purpose of minimizing contact of the aspartame with moisture-containing ingredients, that is, corn syrups, present in the gum mix.

French 2,315,862 makes reference to the use of thaumatin, but does not suggest its use on the surface of a chewing gum composition. The invention utilizes a sweetener aftertaste reducing amount of arabinogalactan.

Therefore, need has arisen for a method of enhancing the flavor and sweetness characteristics of chewing gum, particularly gum employing dipeptide sweeteners.

According to the present invention, the sweet proteins thaumatin and monellin, which are naturally occurring, high potency flavor and sweetness adjuvants, enhance the flavor and sweetness characteristics of chewing gum when the thaumatin or monellin is applied to the surface of the gum. The thaumatin or monellin also extends the sweetness of the gum.

Where the chewing gum employs a dipeptide sweetener such as aspartame, it has been found that the deposition of thaumatin or monellin potentiates the sweetness characteristics of the dipeptide to provide rapid initial sweetness impact and improved overall sweetness characteristics similar to those of a sucrose-sweetened gum, without any bitterness.

Since thaumatin or monellin are extremely potent flavor and sweetness adjuvants, only a small quantity of these sweet proteins, from about 0.5 to about 100 ppm by weight of the chewing gum composition, is required to achieve these effects. Where a dipeptide such as aspartame is used to sweeten the gum, such a small quantity of thaumatin or monellin applied to the gum surface potentiates the sweetness of the dipeptide and permits a substantial reduction in the amount of the dipeptide which otherwise would be required to sweeten the gum, resulting in significant cost savings. Used in such small quantities by itself, the thaumatin or monellin would provide a negligible amount of sweetness to the gum; however, in the present invention the thaumatin or monellin is employed as an adjuvant to potentiate the flavor and sweetness characteristics of the gum, particularly the initial sweetness impact.

According to a further aspect of the present invention, the deposition of thaumatin or monellin is conveniently applied as a rolling compound onto the surface of the gum composition.

The high potency sweetener thaumatin is a proteinaceous substance obtained from the fruit of the tropical plant *Thaumatoccoccus daniellii*, which grows in tropical Africa. The sweetness of thaumatic is about 2,000 to 3,000 times that of sucrose on a weight basis making it one of the sweetest known substances. Thaumatin also has a lingering sweet after-taste. Monellin, also a natural high-potency sweetener, is a protein having characteristics similar to thaumatin. Monellin is obtained from the fruit of the tropical plant *Dioscoreophyllum cumminsii*.

The present invention sets forth a chewing gum composition having a core portion comprising a chewable gum base, sweetener and flavoring, and further having deposited on the surface of said core portion a rolling compound characterized in that the rolling compound comprises a sweet protein selected from the group consisting of thaumatin and monellin, the protein constituting at least 0.5 but less than 100 ppm by weight of the chewing gum composition. Preferably, thaumatin or monellin is present from about 3 to about 20 ppm, by weight of the chewing gum composition. If the thaumatin or monellin were incorporated into the gum mass rather than applied to the gum surface, about 200 to 300 ppm would be required to obtain flavor and sweetness potentiation equivalent to that achieved by the surface deposition of thaumatin or monellin according to the present invention.

The chewing gum composition may comprise a core portion having a chewable gum base and flavoring, with thaumatin or monellin being deposited on the surface of the core portion. A high-potency sweetener (that is, one having a sweetness greater than twenty times that of sucrose) may be contained in the core portion or

applied to the surface of the core-portion.

The chewing gum base comprises any chewable and substantially water-insoluble base in an amount ranging from approximately 18% to 50%, but preferably 25%, by weight of the total chewing gum composition. The gum base may contain a calcium carbonate or talc filler, but the calcium carbonate base has better chewing characteristics and is less expensive that the talc base.

The sweetener in the chewing gum composition of the present invention can be a water-soluble bulking agent present in an amount ranging from about 30% to about 65% by weight of the entire chewing gum composition. For sugar gums, the sweetener may be dextrose, sucrose, maltose, dextrin, dried invert sugar, fructose, levulose, galactose or corn syrup solids, or combinations thereof. For sugarless gums, the sweetener may be a sugar alcohol such as sorbitol, mannitol or xylitol; or it may comprise a high-potency sweetener as previously defined. The preferred sweetener for sugarless gums is the dipeptide sweetener aspartame (L - aspartyl - L - phenylalanine methyl ester, originally disclosed in U.S. Patent Nos. 3,492,131 and 3,642,491) in an amount of about .025% to about 2.0%, but preferably about 0.1%, by weight of the chewing gum composition.

The chewing gum also comprises a known flavor such as an essential oil or synthetic flavor in an amount determined by preference, but generally about 1% of the chewing gum composition.

The chewing gum typically comprises a plasticizing agent in an amount of about 0.5% to about 7.5% by weight of the chewing gum composition; it optionally comprises a coloring agent in a conventional amount of about 0.01% to about 1% by weight of the gum composition.

The chewing gum is manufactured in a conventional manner. First, the base is heated and placed in a mixer. If coloring is desired, it may be added at this point, followed by the sweetener, the plasticizing agent and flavor. When the chewing gum is removed from the mixer, the mixture is rolled in conventional product-forming equipment, as is well-known in the art.

The deposition of thaumatin or monellin onto the surface of the chewing gum is preferably accomplished by the application of a rolling compound to the chewing gum core portion. The rolling compound comprises thaumatin or monellin in combination with mannitol, sorbitol, sucrose, starch, calcium carbonate, talc, other orally acceptable substances, or a combination thereof. The rolling compound constitutes from about 0.25% to about 10.0%, but preferably about 1% to about 3%, by weight of the chewing gum composition. The rolling compound containing the thaumatin or monellin is preferably applied to the surface of the chewing gum using a well-known dusting procedure immediately prior to rolling the gum in the product-forming equipment in order to prevent adhesion of the gum and the rollers, particularly when the gum is warm.

As an alternative to applying the thaumatin or monellin as a rolling compound, the thaumatin or monellin may be deposited onto the surface of the chewing gum using a powder spray process. In such a process, which is known in the art, a powder is suspended in a pressurized gas which is sprayed onto a surface. Using such a technique, the rate of application of thaumatin or monellin to the chewing um surface can be controlled by regulating the pressure of the gas, the amount of thaumatin or monellin suspended in the gas and the rate of travel of the chewing gum under the spray.

The thaumatin or monellin may also be applied to the surface of the chewing gum in a solution which is sprayed onto the gum. In such a process, which is also known in the art, an aqueous solution is formed and then sprayed as an aerosol mist. The thaumatin or monellin may also be applied by a process of electrostatic deposition in which particles of thaumatin or monellin are first charged and then sprayed onto chewing gum having an oppositely charged surface.

Thaumatin and monellin are substances of very low density and, because of their potency, can generate a nuisance dust. In order to facilitate handling of the thaumatin or monellin, they can be co-dried, using the well-known techniques of spray drying or freeze drying with a good-grade carrier, which is preferably a carbohydrate (such as a natural carbohydrate gum, a dextrin or a starch), a sugar alcohol (such as mannitol or sorbitol) or a protein. The co-dried thaumatin or monellin is applied to the surface of the chewing gum as a spray or a rolling compound as previously described.

Example I

A sugarless chewing gum containing aspartame can be manufactured according to the following formulation:

Ingredient	Percent by weight
Gum base	24.5
Sorbitol powder	45.1
70% Sorbitol solution	12.6
Mannitol powder	8.0
Flavor	1.13
Glycerine	6.5
Color	0.03
Aspartame	0.14
Thaumatin rolling compound	2.0

The rolling compound consists of mannitol and thaumatin, the thaumatin comprising 0.05% by weight of the rolling compound. The total thaumatin content is 10 ppm by weight of the chewing gum composition.

The small amount of surface-applied thaumatin exhibits a synergistic effect with the aspartame and permits a substantial reduction in the amount of aspartame which otherwise would be required to sweeten the gum. Assuming that thaumatin is

about 2,500 times as sweet as sucrose, the 10 ppm of thaumatin used in this Example provides a sweetness potency equivalent to only about 2.5% sucrose, a negligible amount of sweetness. However, without this small quantity of surface-applied thaumatin, 0.22% aspartame would be required to achieve equivalent sweetness. Thus, the surface-applied thaumatin permits a reduction in the amount of aspartame from 0.22 to 0.14%, a 36% reduction. Assuming that aspartame is about 200 times as sweet as sucrose, this aspartame reduction is equivalent to about 16% sucrose, a relatively substantial amount.

Example II

A sugar gum can be manufactured according to the following formulation:

Ingredient	Percent by weight
Gum base	20.19
Corn syrup	13.33
Sugar	53.94
Glycerine	0.76
Flavor	0.87
Dextrose monohydrate	9.91
Thaumatin rolling compound	1.0

The rolling compound consists of sugar and thaumatin, the thaumatin comprising 0.05% by weight of the rolling compound. The total thaumatin content is 5 ppm by weight of the chewing gum composition.

Claims

1. A chewing gum composition having a core portion comprising a chewable gum base, sweetener and flavoring, and further having deposited on the surface of said core portion a rolling compound characterized in that the rolling compound comprises a sweet protein selected from thaumatin and monellin, the protein constituting at least 0.5 but less than 100 ppm by weight of the chewing gum composition.

2. The chewing gum composition of claim 1 characterized in that the protein is thaumatin.

3. The chewing gum composition of claim 1 characterized in that the protein is monellin.

4. The chewing gum composition of claim 1 characterized in that the protein constitutes from about 3 to about 20 ppm by weight of the chewing gum composition.

5. The chewing gum composition of claim 1 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

6. The chewing gum composition of claim 1 characterized in that the rolling compound constitutes from about 1.0% to about 3.0% by weight of the chewing gum composition.

7. The chewing gum composition of claim 1 characterized in that the sweetener in the core portion comprises a high-potency sweetener.

8. The chewing gum composition of claim 1 characterized in that the sweetener in the core portion comprises a dipeptide sweetener.

9. The chewing gum composition of claim 1 characterized in that the sweetener in the core portion comprises aspartame in an amount ranging from about .025% to about 2.0% by weight of the chewing gum composition.

10. The chewing gum composition of claim 9 characterized in that the protein constitutes from about 3 to about 20 ppm and the aspartame constitutes about 0.1% by weight of the chewing gum composition.

11. The chewing gum composition of claim 9 characterized in that the protein is thaumatin.

12. The chewing gum composition of claim 9 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

13. The chewing gum composition of claim 9 characterized in that the rolling compound constitutes from about 1.0% to about 3.0% by weight of the chewing gum composition.

14. A chewing gum composition having a core portion comprising a chewable gum base and flavoring and further having deposited on the surface of the core portion a rolling compound characterized in that the rolling compound comprises a protein selected from thaumatin and monellin, the protein constituting at least 0.5 but less than 100 ppm by weight of the chewing gum composition.

15. The chewing gum composition of claim 14 characterized in that the composition further comprises a high-potency sweetener.

16. The chewing gum composition of claim 15 characterized in that the high-potency sweetener is a dipeptide sweetener.

17. The chewing gum composition of claim 15 characterized in that the dipeptide sweetener is aspartame.

18. The chewing gum composition of claim 15 characterized in that the high-potency sweetener is applied to the surface of the core portion.

19. The chewing gum composition of claim 14 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

20. A method of sweetening a chewing gum composition comprising chewable gum base and flavoring, the method comprising the step of applying to the surface of the gum composition a rolling compound characterized in that said rolling compound comprises a sweet protein selected from the group consisting of thaumatin and monellin in an amount within the range of from about 0.5 to about 100 ppm by weight of the chewing gum composition.

21. The method of claim 20 characterized in that the chewing gum composition further comprises a sweetener.

22. The method of claim 20 characterized in that the protein is thaumatin.

23. The method of claim 20 characterized in that the protein is monellin.

about 2,500 times as sweet as sucrose, the 10 ppm of thaumatin used in this Example provides a sweetness potency equivalent to only about 2.5% sucrose, a negligible amount of sweetness. However, without this small quantity of surface-applied thaumatin, 0.22% aspartame would be required to achieve equivalent sweetness. Thus, the surface-applied thaumatin permits a reduction in the amount of aspartame from 0.22 to 0.14%, a 36% reduction. Assuming that aspartame is about 200 times as sweet as sucrose, this aspartame reduction is equivalent to about 16% sucrose, a relatively substantial amount.

Example II

A sugar gum can be manufactured according to the following formulation:

Ingredient	Percent by weight
Gum base	20.19
Corn syrup	13.33
Sugar	53.94
Glycerine	0.76
Flavor	0.87
Dextrose monohydrate	9.91
Thaumatin rolling compound	1.0

The rolling compound consists of sugar and thaumatin, the thaumatin comprising 0.05% by weight of the rolling compound. The total thaumatin content is 5 ppm by weight of the chewing gum composition.

Claims

1. A chewing gum composition having a core portion comprising a chewable gum base, sweetener and flavoring, and further having deposited on the surface of said core portion a rolling compound characterized in that the rolling compound comprises a sweet protein selected from thaumatin and monellin, the protein constituting at least 0.5 but less than 100 ppm by weight of the chewing gum composition.

2. The chewing gum composition of claim 1 characterized in that the protein is thaumatin.

3. The chewing gum composition of claim 1 characterized in that the protein is monellin.

4. The chewing gum composition of claim 1 characterized in that the protein constitutes from about 3 to about 20 ppm by weight of the chewing gum composition.

5. The chewing gum composition of claim 1 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

6. The chewing gum composition of claim 1 characterized in that the rolling compound constitutes from about 1.0% to about 3.0% by weight of the chewing gum composition.

7. The chewing gum composition of claim 1 characterized in that the sweetener in the core portion comprises a high-potency sweetener.

8. The chewing gum composition of claim 1 characterized in that the sweetener in the core portion comprises a dipeptide sweetener.

9. The chewing gum composition of claim 1 characterized in that the sweetener in the core portion comprises aspartame in an amount ranging from about .025% to about 2.0% by weight of the chewing gum composition.

10. The chewing gum composition of claim 9 characterized in that the protein constitutes from about 3 to about 20 ppm and the aspartame constitutes about 0.1% by weight of the chewing gum composition.

11. The chewing gum composition of claim 9 characterized in that the protein is thaumatin.

12. The chewing gum composition of claim 9 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

13. The chewing gum composition of claim 9 characterized in that the rolling compound constitutes from about 1.0% to about 3.0% by weight of the chewing gum composition.

14. A chewing gum composition having a core portion comprising a chewable gum base and flavoring and further having deposited on the surface of the core portion a rolling compound characterized in that the rolling compound comprises a protein selected from thaumatin and monellin, the protein constituting at least 0.5 but less than 100 ppm by weight of the chewing gum composition.

15. The chewing gum composition of claim 14 characterized in that the composition further comprises a high-potency sweetener.

16. The chewing gum composition of claim 15 characterized in that the high-potency sweetener is a dipeptide sweetener.

17. The chewing gum composition of claim 15 characterized in that the dipeptide sweetener is aspartame.

18. The chewing gum composition of claim 15 characterized in that the high-potency sweetener is applied to the surface of the core portion.

19. The chewing gum composition of claim 14 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

20. A method of sweetening a chewing gum composition comprising chewable gum base and flavoring, the method comprising the step of applying to the surface of the gum composition a rolling compound characterized in that said rolling compound comprises a sweet protein selected from the group consisting of thaumatin and monellin in an amount within the range of from about 0.5 to about 100 ppm by weight of the chewing gum composition.

21. The method of claim 20 characterized in that the chewing gum composition further comprises a sweetener.

22. The method of claim 20 characterized in that the protein is thaumatin.

23. The method of claim 20 characterized in that the protein is monellin.

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24. The method of claim 20 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition.

25. The method of claim 20 characterized in that the rolling compound is dusted onto the surface of the chewing gum composition.

26. The method of claim 20 characterized in that the additional step of co-drying the protein with a food-grade carrier prior to application of the protein to the surface of the gum composition.

27. The method of claim 26 characterized in that the carrier is a carbohydrate.

28. The method of claim 26 characterized in that the carrier is a sugar alcohol.

29. The method of claim 26 characterized in that the carrier is a protein.

30. The method of claim 26 characterized by the additional step of spraying the protein onto the surface of the gum composition.

31. The method of claim 26 characterized in that the rolling compound constitutes from about 0.25% to about 10.0% by weight of the chewing gum composition, and wherein the rolling compound is dusted onto the surface of the chewing gum composition.

32. The method of claim 20 characterized by the additional steps of preparing a solution of the protein and spraying the solution onto the gum composition.

33. The method of claim 20 characterized by the protein constitutes from about 3 to about 20 ppm by weight of the chewing gum composition.

34. The method of claim 20 characterized in that the chewing gum composition comprises aspartame in an amount ranging from about 0.025% to about 2.0% by weight of the chewing gum composition.

Patentansprüche

1. Kaugummizusammensetzung mit einem Kern, der eine Kaumasse, ein Süßungsmittel und einen Geschmacksstoff enthält, und mit einer auf dem Kern vorgesehenen Oberflächenauflage, die mindestens teilweise aus einem süßen Eiweißstoff besteht, der aus der Gruppe ausgewählt ist, die aus dem Thaumatin und dem Monellin besteht, wobei das Gewicht des Eiweißstoffes etwa 0,5 bis etwa 100 ppm des Gewichts der Kaugummizusammensetzung beträgt.

2. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß der Eiweißstoff Thaumatin ist.

3. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß der Eiweißstoff Monellin ist.

4. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß das Gewicht des Eiweißstoffes etwa 3 bis etwa 20 ppm des Gewichts der Kaugummizusammensetzung beträgt.

5. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß die Oberflächenauflage ein Walzhilfsstoff ist, dessen Gewicht etwa 0,25 bis etwa 10,0% des Gewichts der Kaugummizusammensetzung beträgt.

6. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß die Oberflächenauflage ein Walzhilfsstoff ist, dessen Gewicht etwa 1,0% bis etwa 3,0% des Gewichts der Kaugummizusammensetzung beträgt.

7. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß das im Kern enthaltene Süßungsmittel mindestens teilweise aus einem Süßungsmittel von starker Süßkraft besteht.

8. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß das in dem Kern enthaltene Süßungsmittel mindestens teilweise aus einem Dipeptid-Süßungsmittel besteht.

9. Kaugummizusammensetzung nach Anspruch 1, dadurch gekennzeichnet, daß das in dem Kern enthaltene Süßungsmittel mindestens teilweise aus Apartam besteht, dessen Gewicht etwa 0,025% bis etwa 2,0% des Gewichts der Kaugummizusammensetzung beträgt.

10. Kaugummizusammensetzung nach Anspruch 9, dadurch gekennzeichnet, daß das Gewicht des Eiweißstoffes etwa 3 bis etwa 30 ppm und das Gewicht des Aspartame etwa 0,1% des Gewichts der Kaugummizusammensetzung beträgt.

11. Kaugummizusammensetzung nach Anspruch 9, dadurch gekennzeichnet, daß der Eiweißstoff Thaumatin ist.

12. Kaugummizusammensetzung nach Anspruch 9, dadurch gekennzeichnet, daß das Gewicht des Walzhilfsstoffes etwa 0,25% bis etwa 20,0% des Gewichts der Kaugummizusammensetzung beträgt.

13. Kaugummizusammensetzung nach Anspruch 9, dadurch gekennzeichnet, daß das Gewicht des Walzhilfsstoffes etwa 1,0% bis etwa 3,0% des Gewichts der Kaugummizusammensetzung beträgt.

14. Kaugummizusammensetzung mit einem Kern, der eine Kaumasse und einen Geschmacksstoff enthält und auf seiner Oberfläche mit einer Auflage aus einem Walzhilfsstoff versehen ist, dadurch gekennzeichnet, daß der Walzhilfsstoff wenigstens teilweise aus einem Eiweißstoff besteht, der aus dem Thaumatin und dem Monelling ausgewählt ist und dessen Gewicht mindestens 0,5 ppm, aber weniger als 100 ppm des Gewichts der Kaugummizusammensetzung beträgt.

15. Kaugummizusammensetzung nach Anspruch 12, dadurch gekennzeichnet, daß die Zusammensetzung ferner ein Süßungsmittel von starker Süßkraft enthält.

16. Kaugummizusammensetzung nach Anspruch 15, dadurch gekennzeichnet, daß das Süßungsmittel von starker Süßkraft ein Dipeptid-Süßungsmittel ist.

17. Kaugummizusammensetzung nach Anspruch 15, dadurch gekennzeichnet, daß das Dipeptid-Süßungsmittel Aspartam ist.

18. Kaugummizusammensetzung nach

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Anspruch 15, dadurch gekennzeichnet, daß das Süßungsmittel von starker Süßkraft auf die Oberfläche des Kerns aufgetragen worden ist.

19. Kaugummizusammensetzung nach Anspruch 14, dadurch gekennzeichnet, daß das Gewicht des Walzhilfsstoffes etwa 0,25% bis etwa 10,0% des Gewichts der Kaugummizusammensetzung beträgt.

20. Verfahren zum Süßen einer Kaugummizusammensetzung, die eine Kaumasse und Geschmacksstoff enthält, wobei auf die Oberfläche der Gummizusammensetzung ein Walshilfsstoff aufgetragen wird, dadurch gekennzeichnet, daß der Walzhilfsstoff mindestens teilweise aus einem süßen Eiweißstoff besteht, der aus der Gruppe ausgewählt ist, die aus dem Thaumatin und dem Monellin besteht, wobei das Gewicht des Eiweißstoffes etwa 0,5 bis etwa 100 ppm des Gewichts der Kaugummimasse beträgt.

21. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß die Kaugummizusammensetzung ferner ein Süßungsmittel enthält.

22. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß der Eiweißstoff Thaumatin ist.

23. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß der Eiweißstoff Monellin ist.

24. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß das Gewicht des Walzhilfsstoffes etwa 0,25% bis etwa 10,0% des Gewichts des Kaugummizusammensetzung beträgt.

25. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß der Walzhilfsstoff in Staubform auf die Oberfläche der Kaugummizusammensetzung aufgetragen wird.

26. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß der Eiweißstoff vor seinem Auftragen auf die Oberfläche der Gummizusammensetzung gemeinsam mit einem lebensmittelechten Träger getrocknet wird.

27. Verfahren nach Anspruch 26, dadurch gekennzeichnet, daß der Träger ein Kohlehydrat ist.

28. Verfahren nach Anspruch 26, dadurch gekennzeichnet, daß der Träger ein Zuckeralkohol ist.

29. Verfahren nach Anspruch 26, dadurch gekennzeichnet, daß der Träger ein Eiweißstoff ist.

30. Verfahren nach Anspruch 26, dadurch gekennzeichnet, daß in einem zusätzlichen Schritt der Eiweißstoff auf die Oberfläche der Gummizusammensetzung gesprüht wird.

31. Verfahren nach Anspruch 26, dadurch gekennzeichnet, daß das Gewicht des Walzhilfsstoffes etwa 0,25% bis etwa 10,0% des Gewichts der Kaugummizusammensetzung beträgt und daß der Walzhilfsstoff in Staubform auf die Oberfläche der Kaugummizusammensetzung aufgetragen wird.

32. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß in zusätzlichen Schritten eine Lösung des Eiweißstoffes hergestellt und auf die Gummizusammensetzung gesprüht wird.

33. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß das Gewicht des Eiweißstoffes etwa 3 bis etwa 20 ppm des Gewichts der Kaugummizusammensetzung beträgt.

34. Verfahren nach Anspruch 20, dadurch gekennzeichnet, daß die Kaugummizusammensetzung Aspartam enthält und dessen Gewicht etwa 0,025% bis etwa 2,0% des Gewichts der Kaugummizusammensetzung beträgt.

Revendications

1. Composition de chewing gum ayant une portion de noyau qui comprend une gomme masticable de bade, un édulcorant et un agent de flaveur et portant également un dépôt sur la surface de ladite portion de noyau, un composé de laminage, caractérisée en ce que le composé de laminage comprend une protéine sucrée choisie parmi la thaumatine et la monelline, la protéine formant au moins 0,5 mais moins de 100 ppm en poids de la composition de chewing gum.

2. Composition de chewing gum selon la revendication 1, caractérisée en ce que la protéine est la thaumatine.

3. Composition de chewing gum selon la revendication 1, caractérisée en ce que la protéine est la monelline.

4. Composition de chewing gum selon la revendication 1, caractérisée en ce que la protéine constitue environ 3 à 20 ppm par rapport au poids de la composition de chewing gum.

5. Composition de chewing gum selon la revendication 1, caractérisée en ce que le composé de laminage constitue environ 0,25 à 10,0% du poids de la composition de chewing gum.

6. Composition de chewing gum selon la revendication 1, caractérisée en ce que le composé de laminage constitue environ 1,0 à 3,0% du poids de la composition de chewing gum.

7. Composition de chewing gum selon la revendication 1, caractérisée en ce que l'édulcorant dans la portion de noyau comprend un édulcorant à très haut potentiel.

8. Composition de chewing gum selon la revendication 1, caractérisée en ce que l'édulcorant dans la portion de noyau comprend un dipeptide édulcorant.

9. Composition de chewing gum selon la revendication 1, caractérisée en ce que l'édulcorant dans la portion de noyau comprend de l'aspartame en une quantité comprise entre environ 0,025% et 2,0% du poids de la composition de chewing gum.

10. Composition de chewing gum selon la revendication 9, caractérisée en ce que la protéine constitue environ 3 à 20 ppm et l'aspartame constitue environ 0,1% du poids de la composition de chewing gum.

11. Composition de chewing gum, selon la revendication 9, caractérisée en ce que la protéine est la thaumatine.

12. Composition de chewing gum selon la revendication 9, caractérisée en ce que le composé de laminage constitue environ 0,25 à 10,0% du poids de la composition de chewing gum.

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13. Composition de chewing gum selon la revendication 9, caractérisée en ce que le composé de laminage constitue environ 1,0 à 3,0% du poids de la composition de chewing gum.

14. Composition de chewing gum ayant une portion de noyau qui comprend une gomme de base masticable et un agent de flaveur et portant également en dépôt sur la surface de la portion de noyau un composé de laminage, caractérisée en ce que le composé de laminage comprend une protéine choisie parmi la thaumatine et la monelline, la protéine formant au moins 0,5 mais mons de 100 ppm par rapport au poids de la composition du chewing gum.

15. Composition de chewing gum selon la revendication 14, caractérisée en ce que la composition comprend également un édulcorant à haut potentiel.

16. Composition de chewing gum selon la revendication 15, caractérisée en ce que l'édulcorant à haut potentiel est un dipeptide édulcorant.

17. Composition de chewing gum selon la revendication 15, caractérisée en ce que le dipeptide édulcorant est l'aspartame.

18. Composition de chewing gum selon la revendication 15, caractérisé en ce que l'édulcorant à haut potentiel est appliqué à la surface de portion de noyau.

19. Composition de chewing gum selon la revendication 14, caractérisée en ce que le composé de laminage constitue environ 0,25 à 10,0% du poids de la composition de chewing gum.

20. Procédé d'édulcoration d'une composition de chewing gum comprenant une base de gomme masticable et un agent de flaveur, procédé qui comprend l'étape d'application à la surface de la composition de la gomme d'un composé de laminage, caractérisée en ce que ledit composé de laminage comprend une protéine sucrée choisie parmi la thaumatine et la monelline en une proportion comprise entre environ 0,5 et 100 ppm par rapport au poids de la composition du chewing gum.

21. Procédé selon la revendication 20, caractérisé en ce que la composition de chewing gum comprend également un édulcorant.

22. Procédé selon la revendication 20, caractérisé en ce que la protéine est la thaumatine.

23. Procédé selon la revendication 20, caractérisé en ce que la protéine est la monelline.

24. Procédé selon la revendication 20, caractérisé en ce que la composé de laminage constitue environ 0,25 à 10,0% en poids de la composition de chewing gum.

25. Procédé selon la revendication 20, caractérisé en ce qu'on saupoudre avec le composé de laminage la surface de la composition de chewing gum.

26. Procédé selon la revendication 20, caractérisé en ce qu'on effectue à titre d'étage supplémentaire le co-séchage de la protéine avec un véhicule de qualité comestible avant l'application de la protéine à la surface de la composition de gomme.

27. Procédé selon la revendication 26, caractérisé en ce que le véhicule est un hydrate de carbone.

28. Procédé selon la revendication 26, caractérisé en ce que le véhicule est un alcool de sucre.

29. Procédé selon la revendication 26, caractérisé en ce que le véhicule est une protéine.

30. Procédé selon la revendication 26, caractérisé en ce qu'à titre d'étape supplémentaire, on pulvérise la protéine sur la surface de la composition de gomme.

31. Procédé selon la revendication 26, caractérisé en ce que le composé de laminage constitue environ 0,25 à 10,0% en poids de la composition de chewing gum et en ce qu'on saupoudre le composé de laminage sur la surface de la composition de chewing gum.

32. Procédé selon la revendication 20, caractérisé par les étapes supplémentaires de préparation d'une solution de protéine et de pulvérisation de la solution sur la composition de gomme.

33. Procédé selon la revendication 20, caractérisé en ce que la protéine constitue environ 3 à 20 ppm en poids de la composition de chewing gum.

34. Procédé selon la revendication 20, caractérisé en ce que la composition de chewing gum comprend de l'aspartame en une quantité d'environ 0,025 à environ 2,0% du poids de la composition de chewing gum.

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