

Search query (3): [SP]: cross-reference to related applications[0001] this application claims the benefit of u.s. provisional application ser. no. 62/091,877, filed dec. 15, 2014, entitled "process for enhancing muscle portions and products" which application is incorporated herein by reference in its entirety.field[0002] the present invention relates to treatment of meats. more specifically, the present invention relates to enhancing muscle portions.background[0003] meat is a high value food source. efforts have long been expended to improve the flavor, consistency and water retention properties of meat, including addition of materials by marinating or injection.[0004] examples of efforts to enhance meat include dispersion of brine mixtures including gelatin, water and optional additives into meats, as is described in pct applications wo07070686a1, wo07047525a2, and wo07109060a2.[0005] another meat enhancement approach is to inject a cold particle suspension into a meat portion as described in u.s. pat. no. 4,960,599 to cozzini et. al.[0006] protein suspensions comprising sarcoplasmic proteins and myofibrillar proteins derived from animal muscle tissue have been asserted to provide improved moisture retention in food being thawed or cooked. see us patent application publication no. 2011/0244093 to kelleher et al. this application describes obtaining animal muscle protein compositions from animal muscle tissue by comminuting the animal muscle tissue and then mixing it with a food grade alkaline composition under conditions to solubilize the animal muscle protein thereby forming a solution of animal muscle protein. the solubilized basic animal muscle tissue then is mixed with a food grade acid composition to decrease the ph of the solubilized animal muscle protein to a ph between about 4.7 and about 11.0, preferably between about ph 5.5 and about 9.5, thereby to precipitate the protein. the precipitated protein then is comminuted to form protein particulates suspended in an aqueous medium. the thus prepared composition invention is added to a food to be thawed and/or cooked to increased moisture retention in the food. see paragraph [0010]. the ph of the solution for solubilizing the protein is disclosed to be about 10.5 or greater. see paragraph [0015].[0007] a process for isolating proteins is described in u.s. pat. no. 6,136,959 to hultin et al., wherein protein is treated with base, centrifuged and acidified to precipitate the edible protein. see column 1, lines 24-35. the ph of the solution after treatment with base is disclosed to be greater than about 10.0. see column 3, lines 25-28. u.s. pat. no. 7,556,835 likewise discloses a process for isolating proteins by solubilizing the protein in alkaline solution and precipitating the solubilized protein from the mixture. see column 1, lines 58-67. the solubilization of the protein is disclosed to be accomplished by increasing the ph of the mixture to about 10.0 or above. see column 2, lines 47-50.[0008] a process for improving water holding capacity and tenderness in cooked protein food products is described us patent application publication no. 2010/0009048 to hultin et al ("hultin '048"). as discussed in paragraph [0017] of hultin '048, the food product to be treated with a ph adjusting solution is so treated by injecting with the solution, tumbling the food with the solution or soaking the food product with the solution. thus, the food product to be treated are portions (including minced portions), and is not a comminuted meat emulsion that itself is then added to an animal muscle portion. hultin '048 discloses incorporation of protein isolates in the ph adjusting solution. see, e.g., paragraphs [0014] and [0015]. hultin '048 clarifies that "[m]ethods for preparing proteins and protein isolates are known in the art and can be found, e.g., in u.s. pat. nos. 6,005,073, 6,136,959, 6,288,216, and 6,451,975," see paragraph [0050]. all of these referenced patents discuss isolating the protein from the animal muscle.summary[0009] it has been found that animal muscle portions can be advantageously treated by a comminuted meat emulsion having a ph of from about 6.5 to about 9.[0010] in the present method, animal muscle portions are treated to form an enhanced muscle portion by a process comprising providing a comminuted meat emulsion having a ph of from about 6.5 to about 9, the comminuted meat emulsion being prepared from a first animal muscle tissue and adding the comminuted meat emulsion to an animal muscle portion in a manner that promotes uptake and/or distribution of the comminuted meat emulsion into the animal muscle portion to form an enhanced muscle portion. in an aspect, at least about 70 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is solubilized, and the protein of the first animal muscle tissue in the comminuted meat emulsion is not isolated from the first animal muscle tissue in the comminuted meat emulsion. in an aspect, no more than about 30 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is precipitated. in an aspect, the first animal muscle tissue is not exposed to acid in a manner that would cause the ph of the first animal muscle tissue to be less than about 5.3. [0011] final enhanced muscle portion products prepared by this process may exhibit superior performance related to one or more of the following properties: yield, structural integrity (e.g. demonstrated by better cohesive behavior when sliced), easier slicing, less purge of the comminuted meat emulsion before and/or after cooking, less sticking of encased meats to the casing, superior color, and superior product appearance when cooked. [0012] while not being bound by theory, it is believed that exposing comminuted animal muscle tissue to ph in the range of from about 6.5 to about 9.5 prior to adding the emulsion to a meat portion creates greater net charges on proteins in the muscle tissue, and increases the amount of bound and immobilized water. in contrast, comminuted animal muscle tissue that is exposed to lower ph will exhibit overall reduction of reactive groups on proteins available for water binding, particularly if the protein is denatured or rendered insoluble in water. additionally, it is believed that higher net charge differences on proteins that have been exposed to ph of from about 6.5 to about 9.5 causes these proteins to exhibit an increase in the repulsion between myofibrils of the protein, thereby creating space between muscle fibers of the muscle tissue to be treated. this increase in space promotes retention of water.[0013] in addition to the benefit of higher water retention, exposure of the comminuted animal muscle tissue to only the indicated ph ranges described herein provides distinct organoleptic properties in the final product. it has been found that exposure of meat to ph ranges lower than 5.3 and higher than about 9.5 leads to denaturing of the proteins in the meat. it has been found that denaturing the protein reduces effectiveness of the ability for the emulsion to retain water in the meat. it has additionally been found that denaturing the protein irreversibly lowers the viscosity of the final emulsion, requiring thickeners to be added in order to increase the viscosity again. if the comminuted animal muscle tissue is exposed to a ph that is too low, the color of the meat tends to fade to an undesirable level. if the comminuted animal muscle tissue is exposed to a ph that is too high, the color of the meat tends to darken to an undesirably dark color.[0014] the present process advantageously is a simple process requiring fewer steps, and uses fewer and a lower quantity of ingredients than other processes involving acid treatment of meat followed by exposure to alkaline ph compositions. this is because the present process does not use acid in the levels of other processes, and additionally uses less alkali to balance out the acid of such meat pretreatment. the present process requires only the use of simple processing equipment, and is easy to carry out.brief description of the drawings[0015] the patent or application file contains at least one drawing executed in color. copies of this patent or patent application publication with color drawing(s) will be provided by the office upon request and payment of the necessary fee.[0016] the accompanying drawings, which are incorporated in and constitute a part of this application, illustrate several aspects of the invention and together with a description of the aspects serve to explain the principles of the invention. a brief description of the drawings is as follows:[0017] fig. 1 is a photograph showing a sample of a prior art comminuted meat emulsion that is control a from the examples.[0018] fig. 2 is a photograph showing a sample of a comminuted meat emulsion that is test composition 1 from the examples.[0019] fig. 3 is a photograph showing a sample of a comminuted meat emulsion that is test composition 2 from the examples.[0020] fig. 4 is a photograph showing a sample of a comminuted meat emulsion that is test composition 3 from the examples.detailed description[0021] the aspects of the present invention described below are not intended to be exhaustive or to limit the invention to the precise forms disclosed in the following detailed description. rather a purpose of the aspects chosen and described is so that the appreciation and understanding by others skilled in the art of the principles and practices of the present invention can be facilitated.[0022] the animal muscle portion to be treated in accordance with the present invention may be a

Results: 5

Search history

Search FT=(comminuted meat emulsion and pH and animal muscle portion) (Results 4)

1:

Search [SP]: 1. a process for treating an animal muscle portion to form an enhanced muscle portion comprising: providing a comminuted meat emulsion having a ph of from about 6.5 to about 9.5, the comminuted meat emulsion being prepared from a first animal muscle tissue and adding the comminuted meat emulsion to an animal muscle portion in a manner that promotes uptake and/or distribution of the comminuted meat emulsion into the animal muscle portion to form an enhanced muscle portion wherein at least about 70 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is solubilized, and the protein of the first animal muscle tissue in the comminuted meat emulsion is not isolated from the first animal muscle tissue in the comminuted meat emulsion. 2. a process for treating an animal muscle portion to form an enhanced muscle portion comprising: providing a comminuted meat emulsion having a ph of from about 6.5 to about 9.5, the comminuted meat emulsion being prepared from a first animal muscle tissue and adding the comminuted meat emulsion to an animal muscle portion in a manner that promotes uptake and/or distribution of the comminuted meat emulsion into the animal muscle portion to form an enhanced muscle portion wherein the first animal muscle tissue is not exposed to acid in a manner that would cause the ph of the first animal muscle tissue to be less than about 5.3. 3. the process of claim 1, wherein the comminuted meat emulsion is prepared by comminuting a first animal muscle tissue to provide a comminuted animal muscle tissue and mixing the comminuted animal muscle tissue with a food grade alkaline composition to form a comminuted meat emulsion having a ph of at least about 6.5. 4. the process of claim 1, wherein the comminuted animal muscle tissue has an average particle size of from about 1 to about 2 mm. 5. the process of claim 4, wherein the mixing step further comprises comminution to further reduce particle size of the comminuted animal muscle tissue. 6. the process of claim 1, wherein the comminuted meat emulsion has an average particle size of less than about 0.1 mm. 7. the process of claim 1, wherein the comminuted meat emulsion has an average particle size of less than about 0.1 mm. 8. the

process of claim 1, wherein the comminuted meat emulsion has an average particle size of from about 0.1 to about 0.4 mm. 9. the process of claim 1, wherein the comminuted meat emulsion has a maximum particle size of less than about 1 mm. 10. the process of claim 1, wherein the comminuted meat emulsion has a ph of from about 7 to about 9. 11. the process of claim 1, wherein the comminuted meat emulsion has a ph of from about 7.5 to about 8.5. 12. the process of claim 1, wherein the comminuted meat emulsion has a fat content of less than about 25 percent by weight. 13. the process of claim 1, wherein the comminuted meat emulsion has a fat content of less than 5 percent by weight. 14. the process of claim 1, wherein the comminuted meat emulsion comprises myofibrillar protein that is at least about 50 wt percent of the protein content of the meat in the comminuted meat emulsion. 15. the process of claim 1, wherein the comminuted meat emulsion comprises myofibrillar protein that is from about 70 wt percent to about 90 wt percent of the protein content of the meat in the comminuted meat emulsion. 16. the process of claim 1, wherein the myofibrillar protein is at least about 2 wt percent of the comminuted meat emulsion. 17. the process of claim 1, wherein the myofibrillar protein is at least about 2.5 wt percent of the comminuted meat emulsion. 18. the process of claim 1, wherein the myofibrillar protein is from about 2.5 wt percent to about 10 wt percent of the comminuted meat emulsion. 19. the process of claim 1, wherein the comminuted meat emulsion has a yield stress of from about 1 to about 15 pa. 20. the process of claim 1, wherein the comminuted meat emulsion has a consistency index of from about 0.2 to about 10 pasn. 21. the process of claim 1, wherein the comminuted meat emulsion has a flow behavior index of less than 1. 22. the process of claim 1, wherein the comminuted meat emulsion has a flow behavior index of from about 0.1 to about 0.9. 23. the process of claim 1, wherein the comminuted meat emulsion has a flow behavior index of from about 0.2 to about 0.8. 24. the process of claim 1, wherein the comminuted meat emulsion has a yield stress of from about 10 to about 15 pa, a consistency index of from about 0.2 to about 10 pasn, and a flow behavior index of less than 1. 25. the process of claim 1, wherein the comminuted meat emulsion is added to the animal muscle portion by a process comprising injecting the comminuted meat emulsion into the animal muscle portion. 26. the process of claim 1, wherein the comminuted meat emulsion is added to the animal muscle portion by a process comprising physically manipulating the animal muscle portion in a manner that causes uptake of the comminuted meat emulsion into the animal muscle portion. 27. the process of claim 1, wherein the enhanced muscle portion comprises from about 10 percent to about 50 percent by weight of comminuted meat emulsion. 28. the process of claim 4, wherein the food grade alkaline composition is an alkaline composition comprising one or more alkaline materials selected from sodium hydroxide, potassium hydroxide, calcium hydroxide, magnesium hydroxide, sodium bicarbonate, potassium bicarbonate, calcium bicarbonate, magnesium bicarbonate, sodium carbonate, potassium carbonate, calcium carbonate, magnesium carbonate, or mixtures thereof. 29. the process of claim 4, wherein the food grade alkaline composition consists of sodium bicarbonate or potassium bicarbonate, calcium bicarbonate, magnesium bicarbonate, sodium carbonate, potassium carbonate, calcium carbonate, magnesium carbonate, or mixtures thereof. 30. the process of claim 4, wherein the food grade alkaline composition is an alkaline composition consisting of sodium bicarbonate, sodium carbonate or mixtures thereof. 31. the process of claim 4, wherein the food grade alkaline composition is an alkaline composition consisting of potassium bicarbonate, potassium carbonate or mixtures thereof. 32. the process of claim 1, wherein the comminuted meat emulsion is prepared as an intermediate product and is packaged and stored for addition to the animal muscle portion at a later time. 33. the process of claim 1, wherein the comminuted meat emulsion is prepared as an intermediate product and is added to the animal muscle portion in a separate manufacturing facility. 34. an enhanced muscle portion made by the process of claim 1. 35. the process of claim 1, wherein at least about 70 percent, 75 percent, 80 percent, 85 percent or 90 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is solubilized. 36. the process of claim 1, wherein from about 75 percent to about 98 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is solubilized. 37. the process of claim 1, wherein from about 80 percent to about 95 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is solubilized. 38. the process of claim 1, wherein no more than about 30 percent, 25 percent, 20 percent, 15 percent or 10 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is precipitated. 39. the process of claim 1, wherein from about 30 percent to about 2 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is precipitated. 40. the process of claim 1, wherein from about 25 percent to about 5 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is precipitated. (Results 0)

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in u.s. pat. no. 4,960,599 to cozzini et. al.[0006] protein suspensions comprising sarcoplasmic proteins and myofibrillar proteins derived from animal muscle tissue have been asserted to provide improved moisture retention in food being thawed or cooked. see us patent application publication no. 2011/0244093 to kelleher et al. this application describes obtaining animal muscle protein compositions from animal muscle tissue by comminuting the animal muscle tissue and then mixing it with a food grade alkaline composition under conditions to solubilize the animal muscle protein thereby forming a solution of animal muscle protein. the solubilized basic animal muscle tissue then is mixed with a food grade acid composition to decrease the ph of the solubilized animal muscle protein to a ph between about 4.7 and about 11.0, preferably between about ph 5.5 and about 9.5, thereby to precipitate the protein. the precipitated protein then is comminuted to form protein particulates suspended in an aqueous medium. the thus prepared composition invention is added to a food to be thawed and/or cooked to increased moisture retention in the food. see paragraph [0010]. the ph of the solution for solubilizing the protein is disclosed to be about 10.5 or greater. see paragraph [0015].[0007] a process for isolating proteins is described in u.s. pat. no. 6,136,959 to hultin et al., wherein protein is treated with base, centrifuged and acidified to precipitate the edible protein. see column 1, lines 24-35. the ph of the solution after treatment with base is disclosed to be greater than about 10.0. see column 3, lines 25-28. u.s. pat. no. 7,556,835 likewise discloses a process for isolating proteins by solubilizing the protein in alkaline solution and precipitating the solubilized protein from the mixture. see column 1, lines 58-67. the solubilization of the protein is disclosed to be accomplished by increasing the ph of the mixture to about 10.0 or above. see column 2, lines 47-50.[0008] a process for improving water holding capacity and tenderness in cooked protein food products is described in us patent application publication no. 2010/0009048 to hultin et al ("hultin '048"). as discussed in paragraph [0017] of hultin '048, the food product to be treated with a ph adjusting solution is so treated by injecting with the solution, tumbling the food with the solution or soaking the food product with the solution. thus, the food product to be treated are portions (including minced portions), and is not a comminuted meat emulsion that itself is then added to an animal muscle portion. hultin '048 discloses incorporation of protein isolates in the ph adjusting solution. see, e.g., paragraphs [0014] and [0015]. hultin '048 clarifies that "[m]ethods for preparing proteins and protein isolates are known in the art and can be found, e.g., in u.s. pat. nos. 6,005,073, 6,136,959, 6,288,216, and 6,451,975," see paragraph [0050]. all of these referenced patents discuss isolating the protein from the animal muscle.summary[0009] it has been found that animal muscle portions can be advantageously treated by a comminuted meat emulsion having a ph of from about 6.5 to about 9.[0010] in the present method, animal muscle portions are treated to form an enhanced muscle portion by a process comprising providing a comminuted meat emulsion having a ph of from about 6.5 to about 9, the comminuted meat emulsion being prepared from a first animal muscle tissue and adding the comminuted meat emulsion to an animal muscle portion in a manner that promotes uptake and/or distribution of the comminuted meat emulsion into the animal muscle portion to form an enhanced muscle portion. in an aspect, at least about 70 percent by weight of the protein of the first animal muscle tissue in the comminuted meat emulsion is solubilized, and the protein of the first animal muscle tissue in the comminuted meat emulsion is not isolated from the first animal muscle tissue in the comminuted meat 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proteins in the muscle tissue, and increases the amount of bound and immobilized water. in contrast, comminuted animal muscle tissue that is exposed to lower ph will exhibit overall reduction of reactive groups on proteins available for water binding, particularly if the protein is denatured or rendered insoluble in water. additionally, it is believed that higher net charge differences on proteins that have been exposed to ph of from about 6.5 to about 9.5 causes these proteins to exhibit an increase in the repulsion between myofibrils of the protein, thereby creating space between muscle fibers of the muscle tissue to be treated. this increase in space promotes retention of water.[0013] in addition to the benefit of higher water retention, exposure of the comminuted animal muscle tissue to only the indicated ph ranges described herein provides distinct organoleptic properties in the final product. it has been found that exposure of meat to ph ranges lower than 5.3 and higher than about 9.5 leads to denaturing of the proteins in the meat. it has been found that denaturing the protein reduces effectiveness of the ability for the emulsion to retain water in the meat. it has additionally been found that denaturing the protein irreversibly lowers the viscosity of the final emulsion, requiring thickeners to be added in order to increase the viscosity again. if the comminuted animal muscle tissue is exposed to a ph that is too low, the color of the meat tends to fade to an undesirable level. if the comminuted animal muscle tissue is exposed to a ph that is too high, the color of the meat tends to darken to an undesirably dark color.[0014] the present process advantageously is a simple process requiring fewer steps, and uses fewer and a lower quantity of ingredients than other processes involving acid treatment of meat followed by exposure to alkaline ph compositions. this is because the present process does not use acid in the levels of other processes, and additionally uses less alkali to balance out the acid of such meat pretreatment. the present process requires only the use of simple processing equipment, and is easy to carry out.brief description of the drawings[0015] the patent or application file contains at least one drawing executed in color. copies of this patent or patent application publication with color drawing(s) will be provided by the office upon request and payment of the necessary fee.[0016] the accompanying drawings, which are incorporated in and constitute a part of this application, illustrate several aspects of

the invention and together with a description of the aspects serve to explain the principles of the invention. a brief description of the drawings is as follows:[0017] fig. 1 is a photograph showing a sample of a prior art comminuted meat emulsion that is control a from the examples.[0018] fig. 2 is a photograph showing a sample of a comminuted meat emulsion that is test composition 1 from the examples.[0019] fig. 3 is a photograph showing a sample of a comminuted meat emulsion that is test composition 2 from the examples.[0020] fig. 4 is a photograph showing a sample of a comminuted meat emulsion that is test composition 3 from the examples.detailed description[0021] the aspects of the present invention described below are not intended to be exhaustive or to limit the invention to the precise forms disclosed in the following detailed description. rather a purpose of the aspects chosen and described is so that the appreciation and understanding by others skilled in the art of the principles and practices of the present invention can be facilitated.[0022] the animal muscle portion to be treated in accordance with the present invention may be a (Results 5)

1) Family number: 33093012 (US2006141124A)

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Title: ADDITION OF COMMINUTED MEAT TRIMMINGS TO MEAT MUSCLES

Abstract: A method of incorporating fat-containing meat trimmings into cuts of lean meat. Comminuted fat or meat trimmings are comminuted to form fine particles without the use of a brine or pickle solution. The fine particles are then mixed or tumbled cuts of lean meat. The fat or meat trimmings are thereby incorporated into the meat and dispersed throughout. This process may be used to incorporate added fat to cuts of meat to enhance the flavor, tenderness, and moistness of the meat product while maintaining the pleasing texture, appearance, and consistency of lean, trimmed meat.

Classifications:

International (IPC 8-9): A23B4/02 A23B4/023 A23L1/31 A23L1/314 A23L1/317 A23L1/318 A23L13/40 A23L13/60

A23L13/70 (Advanced/Invention);

A23B4/02 A23L1/31 A23L1/314 A23L1/317 A23L1/318 (Core/Invention)

CPC: A23L13/72 A23L13/42 Y02A40/946

European: A23L1/314B A23L1/318B

US: 426/652

Family:

Publication number	Publication date	Application number	Application date
CA2491449 AA	20060629	CA20052491449	20050104
US2006141124 AA	20060629	US20040025572	20041229

Priority:

US20040025572 20041229 CA20052491449 20050104

Probable Assignee: KRAFT FOODS HOLDINGS INC

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Assignee(s): SCHNELL TIMOTHY DALE

Inventor(s): (std): SCHNELL TIMOTHY D ; SCHNELL TIMOTHY DALE

Inventor(s): SCHNELL TIMOTHY

Agent(s): MCFADDEN FINCHAM; OSLER HOSKIN AND HARCOURT LLP; FITCH EVEN TABIN AND FLANNERY

2) Family number: 28178167 (US2002001648A)

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Title: METHOD FOR REDUCING MICROBE CONTENT IN FOODSTUFFS BY PH AND PHYSICAL MANIPULATION

Abstract: A manipulating apparatus (10) receives a plurality of previously frozen pieces of pH modified foodstuffs or workpieces (23) and physically manipulates or stresses the workpieces while they remain in a frozen state. The physical manipulation causes relative movement between various points within the volume of the workpieces (23) and kills microbes within the foodstuff. One preferred pH modifying arrangement includes a supply of NH₃ gas (11) and a pump (9) for placing the comminuted foodstuffs to be processed and the NH₃ gas together under an operating pressure for a period of time sufficient to increase the pH of the foodstuffs.

Classifications:

International (IPC 8-9): A23B4/00 A23B4/06 A23B4/08 A23B4/16

A23B4/20 A23B4/24 A23L1/314 A23L1/317 A23L13/40 A23L13/60

A23L3/015 A23L3/36 (Advanced/Invention);

A23B4/00 A23B4/06 A23B4/14 A23L3/015 A23L3/36 (Core/Invention)

International (IPC 1-7): A23B4/00 A23B4/06 A23B4/08 A23B4/12

A23B4/16 A23B4/32 A23C1/00 A23L1/31 A23L1/317 A23L1/36 A23L3/015

A23L3/34 A23L3/36 A61P5/04 C07D315/00 C12Q1/68 F25C5/14

CPC: A23B4/00 A23B4/06 A23B4/066 A23B4/08 A23B4/16 A23B4/20

A23B4/24 A23L3/015 A23L3/36 A23L3/363

European: A23B4/00 A23B4/06 A23B4/06F A23B4/08 A23B4/16

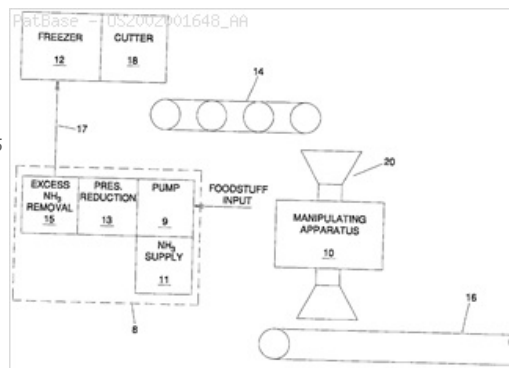
A23B4/20 A23B4/24 A23L3/015 A23L3/36 A23L3/36F

US: 426/263 426/312 426/312S 426/319 426/319P 426/320 426/327

426/332 426/335 426/513 426/518 426/519 426/524 426/524S 426/532

426/532S 426/641 426/641S 426/645 426/645P 426/646 62/320 62/341

623/410 99/484 99/484P 99/516 99/517 99/517S



Family:

Publication number	Publication date	Application number	Application date
AT254855 E	20031215	AT19990945420T	19990901
AU199958021 A1	20000321	AU19990058021	19990901
AU199958021 A5	20000321	AU19990058021	19990901
AU742630 B2	20020110	AU19990058021	19990901
AU742630 C	20020829	AU19990058021	19990901

CA2342786 AA	20010301	CA19992342786	19990901
CA2342786 C	20041214	CA19992342786	19990901
DE69913162 D1	20040108	DE19996013162	19990901
DE69913162 D1	20040108	DE19996013162T	19990901
DE69913162 T2	20040909	DE19996013162T	19990901
EP1109463 A1	20010627	EP19990945420	19990901
EP1109463 A4	20020925	EP19990945420	19990901
EP1109463 B1	20031126	EP19990945420	19990901
NZ510503 A	20030829	NZ19990510503	19990901
US2002001648 AA	20020103	US20010875702	20010606
US2002015777 AA	20020207	US20010965337	20010927
US2002017203 AA	20020214	US19990387979	19990901
US2002127314 AA	20020912	US20020137595	20020502
US2004161506 AA	20040819	US20040779032	20040213
US2004161507 AA	20040819	US20040780255	20040217
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US6389838 BA	20020521	US19980213190	19981217
US6565904 BB	20030520	US19990387979	19990901
US6692785 BB	20040217	US20010875702	20010606
US6713108 BB	20040330	US20010965337	20010927
US6899908 BB	20050531	US20020137595	20020502
US7037544 BB	20060502	US20040779032	20040213
US7214398 BB	20070508	US20040780255	20040217
WO0011970 A1	20000309	WO1999US20112	19990901
WO0011970 C1	20000914	WO1999US20112	19990901

Priority:

US19980144928 19980901 US19980213190 19981217 US19990387979 19990901
WO1999US20112 19990901 US20010875702 20010606 US20010965337 20010927
US20020137595 20020502 US20040779032 20040213 US20040780255 20040217

Probable Assignee: FREEZING MACHINES INC

Assignee(s): (std): ELDON ROTH ; FREEZING MACHINES INC ; ROTH ELDON

Assignee(s): EMPIRICAL INNOVATIONS INC

Inventor(s): (std): ELDON ROTH ; ROTH ELDON

Agent(s): PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; RIDOUT AND MAYBEE LLP;
CULBERTSON RUSSELL D; CULBERTSON GROUP PC; RUSSELL D

Designated states: AT AU BE CA CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL NZ PT SE

3) Family number: 62740194 (US2017367383A)

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Title: PROCESS FOR ENHANCING MUSCLE PORTIONS AND PRODUCTS

Abstract: Animal muscle portions are treated to form an enhanced muscle portion by providing a comminuted meat emulsion made from a first animal muscle tissue and having a pH of from about 6.5 to about 9.5, and adding the emulsion to an animal muscle portion in a manner that promotes uptake and/or distribution of the emulsion into the animal muscle portion to form an enhanced muscle portion. In an aspect, at least about 70 percent by weight of the protein of the tissue in the emulsion is solubilized, and the protein is not isolated from the tissue. In an aspect, no more than about 30 percent by weight of the protein of the tissue is precipitated. In an aspect, the tissue is not exposed to acid in a manner that would cause the pH of the tissue to be less than about 5.3. Products prepared by the processes are also described.

Classifications:

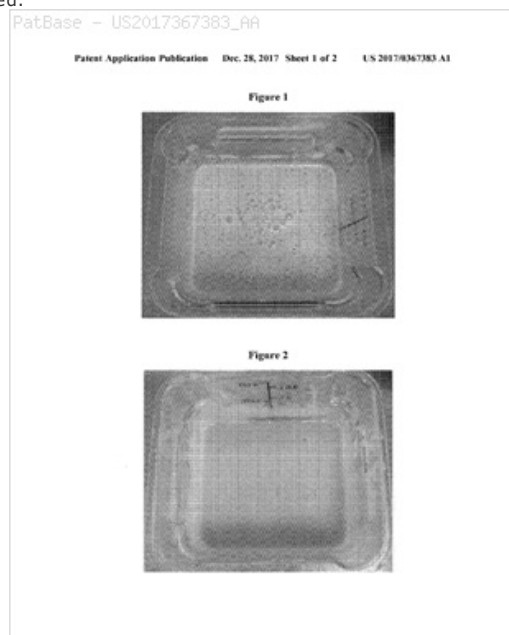
International (IPC 8-9): A23J1/00 A23L13/40

A23L13/60 (Advanced/Invention)

International (IPC 1-7): A23J1/00

CPC: A23J3/04 A23L13/60 A23L13/42 A23L13/432 A23V2002/00

A23J1/00



Family:

Publication number	Publication date	Application number	Application date
BR112017012682 A2	20180102	BR20171112682	20151215
CA2970925 AA	20170614	CA20152970925	20151215
CN107205429 A	20170926	CN201580073800	20151215
CO20170007087 A2	20171130	CO20170007087	20170714
CR20170319 A	20171116	CR20170000319	20151215
JP2018502597 T2	20180201	JP20170550466T	20151215
KR20170095944 A	20170823	KR20177019167	20151215
MX2017007816 A1	20170919	MX20170007816	20151215
US2017367383 AA	20171228	US20150536016	20151215
WO16100299 A1	20160623	WO2015US65747	20151215

Priority:

US20140091877P 20141215 US20150536016 20151215 WO2015US65747 20151215

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

4) Family number: 49704353 (US2011244092A)

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Title: PROTEIN PRODUCT AND PROCESS FOR MAKING INJECTABLE PROTEIN PRODUCT

Abstract: Moisture is retained in cooked or thawed food by adding to the food an aqueous suspension of animal muscle protein obtained from animal muscle tissue. The aqueous suspension is obtained by mixing comminuted animal muscle tissue with a food grade acid to form an aqueous acidic solution of animal muscle protein. The acidic solution is mixed with a food grade base to precipitate the protein in an aqueous composition. The precipitated protein then is comminuted to form an aqueous suspension of comminuted animal muscle protein.

Classifications:

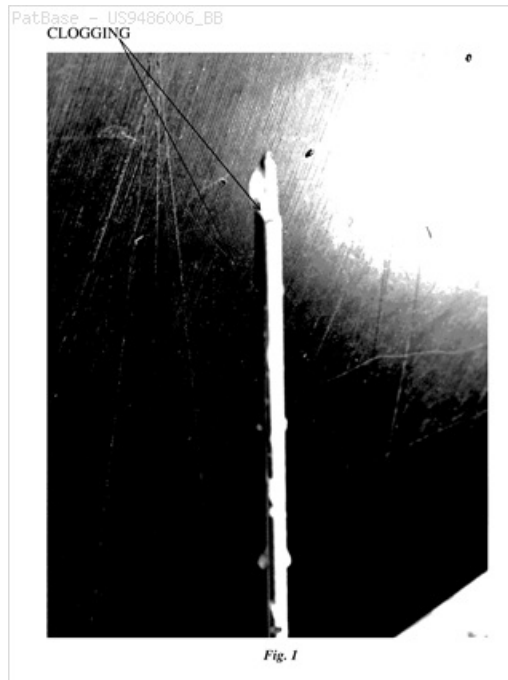
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International (IPC 1-7): A23B4/12 A23B4/14 A23J1/00 A23J1/02 A23J1/04

CPC: A23J1/04 A23L1/3152 A23L1/3155 A23L1/3175 A23L1/31409 A23L1/31427 A23L1/31445 A23L1/3204 A23L1/314 A23L1/325 A23L13/424 A23L13/55 A23L13/65 A23L13/72 A23L13/40 A23L17/00 A23V2002/00 A23L13/42 A23J1/02 A23L13/428 A23L13/52 A23L15/20

European: A23J1/02 A23J1/04 A23L1/314B A23L1/314B2 A23L1/315B A23L1/315D A23L1/317B A23L1/318B A23L1/325 A23L1/32B

US: 426/281 426/281P 426/657 426/657S

**Family:**

Publication number	Publication date	Application number	Application date
AU2010350708 AA	20111013	AU20100350708	20100721
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AU2010350709 AA	20111013	AU20100350709	20101108
AU2010350709 BB	20150122	AU20100350709	20101108
AU2010350709 CA	20150806	AU20100350709	20101108
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BR112012014149 B1	20181002	BR20121114149	20100721

BR112012014151 A2	20150825	BR20121114151	20101108
BR112012014151 A8	20171128	BR20121114151	20101108
BR112012014151 B1	20180605	BR20121114151	20101108
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CA2762663 C	20140819	CA20102762663	20101108
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CA2762969 C	20170314	CA20102762969	20100721
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CN102639013 B	20180907	CN201080039400	20100721
CN102724881 A	20121010	CN201080039396	20101108
CN102724881 B	20180223	CN201080039396	20101108
CR20110651 A	20120302	CR20110000651	20111206
CR20110652 A	20120302	CR20110000652	20111206
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ECSP11010923 A	20111130	EC2011SP10923	20110328
EP2461706 A1	20120613	EP20100849575	20100721
EP2461706 A4	20140820	EP20100849575	20100721
EP2555629 A1	20130213	EP20100849576	20101108
EP2555629 A4	20150211	EP20100849576	20101108
HK1173920 A1	20130531	HK20130100998	20130123
HK1177394 A1	20130823	HK20130104310	20130409
HN2011003341 A	20140623	HN20110003341	20111219
HN2011003342 A	20140623	HN20110003342	20111219
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MX339046 B	20160509	MX20110013728	20101108
NZ596433 A	20140829	NZ20100596433	20101108
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RU2012146624 A	20140520	RU20120146624	20100721
RU2012146625 A	20140520	RU20120146625	20101108
RU2548994 C2	20150420	RU20120146625	20101108
RU2565220 C2	20151020	RU20120146624	20100721
TH125689 A	20130725	TH20121001591	20100721
TH126611 A	20130823	TH20121001592	20101108
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US2011244093 AA	20111006	US20100924382	20100927
US2014023759 AA	20140123	US20130039559	20130927
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US2017013867 AA	20170119	US20160277361	20160927
US2017071236 AA	20170316	US20160345095	20161107
US2018000138 AA	20180104	US20170706592	20170915
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US9820503 BB	20171121	US20160277361	20160927
US9907329 BB	20180306	US20160345095	20161107
US10021902 BB	20180717	US20170706592	20170915
WO11126469 A1	20111013	WO2010US02041	20100721
WO11126470 A1	20111013	WO2010US02926	20101108
ZA201108290 A	20121227	ZA20110008290	20111111
ZA201108291 A	20121227	ZA20110008291	20111111

Priority:

US20100798423	20100405	WO2010US02041	20100721	US20100924382	20100927
WO2010US02926	20101108	US20130039559	20130927	US20160274076	20160923
US20160277361	20160927	US20160345095	20161107	US20170706592	20170915
US20180877116	20180122	US20180994376	20180531		

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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: MEAT TREATMENT COMPOSITION AND USE THEREOF

Abstract: The invention relates to a concentrated liquid meat treatment composition comprising a combination of a buffered food acid component in the form of partially or completely neutralized acetic acid; and a nitrite source in the form of a cultured vegetable extract. The meat treatment composition exhibits excellent shelf stability in that the nitrite content of the composition remains constant for a prolonged period of time.

Classifications:

International (IPC 8-9): A23B4/24 A23L13/40 A23L3/358 (Advanced/Invention)

CPC: A23B4/24 A23L13/40 A23L13/428 A23L13/432 A23L13/45 A23L3/358

Family:

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WO18106109 A1	20180614	WO2017NL50816	20171206

Priority:

EP20160202436 20161206 US20160430729P 20161206

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Agent(s): NEDERLANDSCH OCTROOIBUREAU

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW