

United States District Court,
D. Minnesota.

SUNNY FRESH FOODS, INC,
Plaintiff.

v.
MICHAEL FOODS, INC., and North Carolina State University,
Defendants.

No. CIV. 00-2117DSDJMM

June 18, 2002.

Declaratory judgment action was brought to determine the disputed claim elements of four patents relating to a process by which liquid egg products could be "ultra-pasteurized" in order to extend their shelf life. Upon defendants' motion to strike expert declarations and for claim construction of the patents-in-suit, the District Court, Doty, J., held that: (1) terms "liquid whole egg" and "liquid whole egg product" could contain preservatives; (2) "shelf life" would be defined in accordance with specification to mean the period of time during which the product is not obviously spoiled using the organoleptic tests set forth in the patent under refrigerated conditions; and (3) calculation of "equivalent point," required the method set out in the patent, rather than use of mathematical techniques that provided the most accurate integrations.

Patent terms construed; motion to strike expert declarations denied.

37,225. Cited.

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Justin H. Perl, Esq., Geoffrey P. Jarpe, Esq., Richard A. Kempf, Esq., and Maslon, Edelman, Borman & Brand, Minneapolis, MN, and Richard P. Vitek, Esq., James D. Myers, Esq., D. Randall, Ayers, Esq. and Myers, Bigel, Sibley & Sajovec, Raleigh, NC, for defendants.

ORDER

DOTY, District Judge.

This matter is before the court upon defendants' motion to strike expert declarations and for claim construction of four patents-in-suit: U.S. Reissued Patent RE37,225E, U.S. Patent No. 4,808,425, U.S. Patent No. 4,957,759, U.S. Patent No. 4,994,291. Based on a review of the file, record and proceedings

herein, and for the reasons stated, the court denies defendants' motion to strike expert declarations and construes the patents-in-suit as follows:

1. "Liquid whole egg" refers to liquid whole egg or liquid whole egg blends containing less than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives.
2. "Liquid whole egg product" refers to products which include liquid whole egg and may have more than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives.
3. "Liquid whole egg blend" means blends of whole egg with less than 1% sugar and/or salt, liquid whole egg blends with 24 to 38% egg solids and 12% or less of added non-egg ingredients.
4. "Liquid whole egg product is liquid whole egg blend which is about 24.38% egg solids and about 12% or less of added non-egg ingredients," includes the term non-egg ingredients, which means any ingredients not naturally found in egg including shelf life extending additives.
5. "Where a liquid egg product contains not more than 12% of added non-egg ingredients" includes the term non-egg ingredients, which means any ingredients not naturally found in the egg including shelf life extending additives.
6. "Consisting essentially of liquid whole egg product" refers to products that include liquid whole egg product as set forth above but not elements that could materially affect the basic and novel characteristics of the liquid whole egg.
7. "Shelf life" means the period of time during which the product is not obviously spoiled using the organoleptic tests set forth in the patent under refrigerated (4 degrees Celsius) conditions.
8. "Extended refrigerated shelf life" means a shelf life longer than the 7 to 14 day shelf life of refrigerated liquid whole egg products which have been conventionally pasteurized.
9. "About" means approximately.
10. "Shelf life of from about 16 to 36 weeks under refrigerated conditions" means shelf life of approximately 16 to 36 weeks under refrigerated conditions.
11. "Shelf life of about 8 weeks to about 36 weeks" means shelf life of approximately 8 weeks to approximately 36 weeks.
12. "Shelf life of about 4 weeks to about 36 weeks" means shelf life of approximately 4 weeks to approximately 36 weeks.
13. "Shelf life of about 16 weeks" means shelf life of approximately 16 weeks.
14. "Shelf life of about 16 weeks to 36 weeks under refrigerated conditions" means shelf life of approximately 16 weeks to 36 weeks under refrigerated conditions.
15. "Characterized by refrigerated shelf life of about 4 to 36 weeks" means characterized by refrigerated

shelf life of approximately 4 to 36 weeks.

16. "Equivalent point" requires the methods set out in the patent, including the 1982 and 1986 articles by Swartzel.

17. "Equivalent temperature" and "equivalent time" describe the total thermal treatment received by the liquid whole egg product during processing.

18. "Heated for a predetermined time and to a predetermined temperature insufficient to cause more than a 5% soluble protein loss (SPL) from said product" means testing a product to determine the difference in the soluble protein loss pre- and post-pasteurization based on the methods described in the patent.

19. "The total thermal treatment received by the liquid whole egg product [or "liquid whole egg"] is defined by [or "described by"] an equivalent temperature and an equivalent time defining a point about the 5% SPL (Batch) line of FIG. 3" means modeling the total thermal treatment received by the product according to the equivalent point calculation referred to in the patent specification and comparing the resultant equivalent point with the 5% SPL (Batch) line of Figure 3.

20. "Predetermined time/temperature" means established in advance based upon USDA preapproval requirements but not limited to commercial runs

21. "Preselected" means known ahead of time.

22. "A preselected refrigerated shelf life" means a refrigerated shelf life that is known ahead of time.

23. "Aseptically packaged," "aseptically packaging," and "aseptic packaging" mean packaged to the exclusion of microorganisms other than those carried by the liquid whole egg product.

24. "Packaging/packaged" means placed or placing in a container.

25. "Sterilize" means to make free of all viable microorganisms.

26. "Non-sterile pasteurized liquid whole egg" means liquid whole egg that has been pasteurized but not made free of all viable microorganisms.

27. "Contacting said liquid whole egg product to a heated surface" means the product is heated in contact with a higher temperature surface that does not need to be part of the heat exchanger.

28. "Turbulence" means the mixing of particles over the cross-section of the product stream. "Major portion of the time heated" means greater than 50% of the time the product is heated. "Periodically" means from time to time.

29. "Ultrapasteurizing" means to decrease the number of spoilage organisms below that obtained with conventional pasteurization without sacrificing functional performance.

30. "Coagulate" means to become a soft or semi-solid mass.

31. "Pasteurizing apparatus" means the equipment used to pasteurize the liquid egg product.
32. "Pasteurizing apparatus is sterilized" means that the equipment used to pasteurize the liquid egg product is made free of all viable microorganisms.
33. "Heating unit" means the heating section of the pasteurizing apparatus.
34. "Wherein every particle of liquid whole egg product is in contact with said heated surface for a total time less than the average resonance time of each particle in the heating unit" has its ordinary and accustomed meaning.

BACKGROUND

Plaintiff Sunny Fresh Foods, Inc. ("Sunny Fresh") is the declaratory judgment plaintiff in this case. The patents-in-suit are owned by defendant North Carolina State University ("NCSU") and are exclusively licensed to defendant Michael Foods, Inc. (collectively "Michael Foods"). The parties bring the present proceeding pursuant to *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 387, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), requesting the court to determine the disputed claim elements of the four patents-in-suit, U.S. Reissued Patent RE37,225E ("the '225 Patent"), U.S. Patent No. 4,808,425 ("the '425 Patent"), U.S. Patent No. 4,957,759 ("the '759 Patent"), and U.S. Patent No. 4,994,291 ("the '291 Patent").

A. The Patents-in-Suit

The patents-in-suit relate to a process by which liquid egg products can be "ultra-pasteurized" in order to extend their shelf life. The inventors developed a process by which liquid egg products could be "ultra-pasteurized" at temperatures higher than conventionally was thought possible without destroying the functionality of the egg. (*See* Stewart Decl. Ex. 2, '425 Patent, Col. 2, ll. 42-56.) The result was liquid egg products having a shelf life of four to thirty-six weeks. (*See id.*, Col. 17, ll. 17-33.)

B. Prior and Present Litigation

By 1989, at least two other egg processors, Bartow Foods, Inc. ("Bartow") and Papetti's High Grade Egg Products ("Papetti's"), had introduced their own extended shelf life liquid egg products. Michael Foods sued Bartow and Papetti's for patent infringement. In March 1992, the jury in the *Bartow* case found that the '425 Patent was valid, enforceable and willfully infringed by Bartow. (Kempf Aff., Ex. 7.) Bartow then filed for bankruptcy. It did not appeal the jury verdict.

In the *Papetti's* case, the parties filed several summary judgment motions on liability issues. In a series of decisions, Judge Barry held that no reasonable juror could conclude that the NCSU patents were invalid, unenforceable or not infringed by Papetti's. (Kempf Aff., Ex. 8-9.) On appeal, the United States Court of Appeals for the Federal Circuit affirmed Judge Barry's findings. (Kempf Aff., Ex. 10.) The *Papetti's* case ultimately ended with a stipulated dismissal in 1997, after Michael Foods acquired Papetti's.

By 1994, Michael Foods was involved in two additional patent infringement lawsuits, one against Nulaid Foods, Inc. ("Nulaid") and the second against Sunny Fresh (" *Sunny Fresh I* "). During this time, competitors of Michael Foods filed several requests for reexamination of the NCSU patents with the patent office and several protests in a reissue proceeding involving one of the NCSU patents.

In December 1994, the Nulaid litigation was stayed pending the conclusion of the patent office proceedings. (Kempf Aff., Ex. 12.) Nulaid and Michael Foods subsequently negotiated a settlement agreement.

By November 1995, Michael Foods asserts that it was clear that at least some of the claims that were being adjudicated would differ from the claims that ultimately would be issued at the conclusion of the reexamination proceedings and that Sunny Fresh and Michael Foods therefore agreed to a stay in *Sunny Fresh I*. Sunny Fresh claims that the parties settled the case and that it filed this current action on September 12, 2000, to preserve its rights under the settlement agreement. (Sunny Fresh's Opening *Markman* Br. at 18.) The parties now come before the court for a *Markman* determination. Michael Food also brings a motion to strike expert declarations. Based on a review of the file, record and proceedings herein, and for the reasons stated, the court denies the motion to strike expert declarations FN1 and construes the disputed terms as discussed below.

FN1. In their *Markman* motion, Sunny Fresh relies on three experts, Drs. Labuza, Lechowich, and Woodward. Michael Food moves to strike their declarations, asserting that the timing of the declarations was improper, that declarations are incompetent under the standard of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993), that *Vitronics* precludes the court from considering the declarations, and that Dr. Labuza's declaration must be struck for an intractable conflict of interest. Based on a review of the file, record and proceedings herein, and after careful consideration of the parties' respective arguments, the court is unpersuaded by Michael Food's contentions. The court therefore denies Michael Food's motion to strike.

I. The Law of Claim Construction

[1] Claim construction involves ascertaining the true meaning and scope of each claim as a matter of law. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 386, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). "Claims are normally construed as they would be by those of ordinary skill in the art." *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565, 1571 (Fed.Cir.1983); *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed.Cir.1998)("It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed.").

[2] In determining the meaning of the terms of a claim, the court considers "intrinsic" evidence, which consists of the language of the claims, the specification of the patent and the prosecution history. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). If the meaning of the claim terms is unambiguous and can be determined from the intrinsic evidence, the court need not rely on extrinsic evidence in rendering its claim construction. *See id.* at 1583.

A. Intrinsic Evidence

In its analysis of intrinsic evidence, the court first must examine the language of the claims, then evaluate the specification of the patent and finally consider the prosecution history. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-89 (Fed.Cir.1996); *Markman*, 52 F.3d at 979-81.

1. The Claim

[3] [4] Because a patent claim defines the scope of the right to exclude, claim construction " 'begins and

ends in all cases with the actual words of the claim.' " *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1344 (Fed.Cir.2001)(quoting *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed.Cir.1998)). Courts should give the words of a claim their ordinary and accustomed meaning. *Vitronics*, 90 F.3d at 1582; *Transmatic, Inc. v. Gulton Indus., Inc.*, 53 F.3d 1270 (Fed.Cir.1995); *Gentex Corp. v. Donnelly Corp.*, 69 F.3d 527, 530 (Fed.Cir.1995); *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1579 (Fed.Cir.1988). However, "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." *Vitronics*, 90 F.3d at 1582.

2. Specification

[5] [6] "Claims must be read in view of the specification, of which they are a part." *Markman*, 52 F.3d at 979. The specification "may act as a sort of dictionary, which explains the invention and may define terms used in the claim." *Id.* at 979; *Autogiro Co. v. United States*, 181 Ct.Cl. 55, 384 F.2d 391, 397-398 (1967)("the specification aids in ascertaining the scope and meaning of the language employed in the claims inasmuch as words must be used in the same way in both the claims and the specification The use of the specification as a concordance for the claim is accepted by almost every court, and is a basic concept of patent law."). "However, claims are not to be interpreted by adding limitations appearing only in the specification." *Electro Medical Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed.Cir.1994).

3. The Prosecution History

[7] The prosecution history also provide relevant information about the scope and meaning of the claim. *Id.*; *Markman*, 52 F.3d at 980. "Arguments and amendments made during the prosecution of the patent application and other aspects of the prosecution history ... must be examined to determine the meaning of the terms in the claims." *Southwall Tech., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed.Cir.1995). One way the prosecution history can aid in the interpretation of a claim is by excluding an interpretation that was disclaimed during the prosecution. *Id.*

B. Extrinsic Evidence

[8] [9] [10] "Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. In its discretion, a court may receive extrinsic evidence in order to aid the court's understanding of the patent. *Id.* However, when an analysis of intrinsic evidence alone will resolve any genuine ambiguity in disputed claim terms, it is improper for the court to rely on extrinsic evidence. *Vitronics*, 90 F.3d at 1582; *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323 (Fed.Cir.2001); *Bell & Howell Document Mgmt. Prod. Co. v. Altek Sys.*, 132 F.3d 701 (Fed.Cir.1997). Moreover, extrinsic evidence cannot be used for the purpose of varying or contradicting the terms of the claims. *Markman*, 52 F.3d at 981.

C. Time Frame for Construction

[11] The time frame for construing claims should be the filing date of the application of the patents or the date of their amendment. *See Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 760 (Fed.Cir.1984)("The terms of the claims are best construed in light of the specification and the circumstances which surrounded the patent at its inception."); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1556 (Fed.Cir.1983)(stating that the patent-in-suit "speaks as of the application filing date, not as of the time of trial"); *Quantum Corp. v. Rodime PLC*, 851 F.Supp. 1382, 1385 (D.Minn.1994)("the meaning which the

inventor gives to his words can not be made to depend upon subsequent events, but should appear when the application is filed."); *Waterloo Furniture Components, Ltd. v. Haworth, Inc.*, 798 F.Supp. 489, 494 n. 4 (N.D.Ill.1992)("The critical time period of claim interpretation is the filing date of their amendment, not the trial date.")

II. The Disputed Claim Terms and Their Interpretation

The parties have identified the disputed claim terms, (Kempf Aff., Ex. 23-24), and their respective interpretations of the terms (Kempf Aff., Ex. 25-26). FN2 While this proceeding includes four patents, the parties agree that the court must construe the terms in each patent the same way. (Michael Foods' Initial *Markman* Br. at 5; Sunny Fresh's Resp. to Def.'s Initial *Markman* Br. at 8.) The court therefore relies primarily on the '225 patent as representative of the other patents-in-suit. (Kempf Aff., Ex. 1, '225 patent.) The court examines the disputed terms in turn.

FN2. Sunny Fresh asserts that the following terms must be interpreted: (1) liquid whole egg, (2) liquid whole egg product, (3) liquid whole egg product according to ['225] claim 21, (4) consisting essentially of liquid whole egg product, (5) said liquid whole egg product is liquid whole egg, (6) non-sterile pasteurized liquid whole egg, (7) shelf life, (8) shelf life of from about 16 to 36 weeks under refrigerated conditions, (9) shelf life of about eight weeks to about 36 weeks, (10) shelf life of about four weeks to about 36 weeks, (11) shelf life of about 16 weeks, (12) shelf life of about 16 weeks to 36 weeks under refrigerated conditions, (13) characterized by a refrigerated shelf life of about four weeks to 36 weeks, (14) extended refrigerated shelf life, (15) preselected, (16) preselected shelf life, (17) a preselected refrigerated shelf life of about four weeks to about 36 weeks, (18) predetermined, (19) predetermined holding temperature, (20) predetermined holding time, (21) heated to a predetermined real temperature, (22) the liquid whole egg product is heated to a predetermined real temperature by contacting said liquid whole egg product to a heated surface, (23) wherein said predetermined temperature and predetermined time are selected to impart said predetermined shelf life, (24) equivalent temperature and equivalent time, (25) the total thermal treatment received by the liquid whole egg product [or "liquid whole egg"] is defined by [or "described by"] an equivalent temperature and an equivalent time defining a point above the 5% SPL (Batch) line of Fig. 3, (26) heated for a predetermined time and to a predetermined temperature insufficient to cause more than a 5% soluble protein loss from said product, (27) wherein said holding temperature and holding time are selected to cause a soluble protein loss of not more than a 5% from the product, (28) pasteurizing apparatus, (29) heating unit, (30) sterilized, (31) pasteurizing apparatus is sterilized, (32) coagulation, (33) insufficient to cause coagulation of the liquid whole egg product [or "liquid whole egg"], (34) packaged or packaging, (35) aseptically packaged, aseptically packaging and aseptic packaging, (36) packaging the liquid whole egg product, (37) a packaged liquid whole egg product [or "liquid whole egg"], (38) subjected to turbulence for a major portion of the time said liquid whole egg product is heated, (39) a method of ultrapasteurizing, (40) a method of ultrapasteurizing liquid whole egg [or "liquid whole egg product"], (41) wherein every particle of liquid whole egg product [or "liquid whole egg"] is in contact with said heated surface for a total time less than the average residence time of each particle in the heating unit, (42) while periodically subjected said continuous stream of liquid whole egg product [or "liquid whole egg"] to turbulence, (43) liquid whole egg product is a liquid whole egg blend which is about 24-38% egg solids and about 12% or less of added non-egg ingredients, (44) wherein the liquid whole egg product contains not more than 12% of added non-egg ingredients. (Kempf Aff., Ex. 23.) Michael Foods provided eight terms to be construed by the Court: (1) aseptically packaged, (2) sterilize, (3) shelf life, (4) turbulence, (5) liquid whole egg, (6) liquid whole egg product (7) liquid whole egg blend and (8) ultrapasteurize. (Kempf Aff., Ex. 24.) In its *Markman* presentation, Michael Foods offers the following additional terms: (1) consisting essentially of, (2) about,

(3) equivalent point, (4) predetermine time/temperature and (5) packaging.

A. Liquid Whole Egg and Liquid Whole Egg Product

[12] The parties dispute the meaning of the terms "liquid whole egg" and "liquid whole egg product." FN3 The key disagreement between the parties is whether "liquid whole egg product" and "liquid whole egg" may contain preservatives. Based on a review of the intrinsic evidence, the court concludes that both may contain preservatives.

FN3. Michael Foods defines "liquid whole egg" as "Liquid whole egg includes Liquid Whole Egg or Liquid Whole Egg blends with less than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives." (Kempf Aff., Ex. 27.) Sunny Fresh defines "liquid whole egg" as "only liquid egg yolk and the egg whites in the natural proportions occurring in unbroken eggs." (Kempf Aff., Ex. 26.) Michael Foods defines "liquid whole egg product" as follows:

Whole egg, fortified whole egg (whole egg with added yolk), salt whole egg (e.g. salt 10%), sugar whole egg (e.g. sugar 10%), blends of whole egg with syrup which syrups, dextrose and dextrins and/or other gums and thickening agents, blends of whole egg with less than 1% sugar and/or salt, scrambled egg mixes for example, a mix of about 51% egg solids, 30% skim mil solids, 15% vegetable oil and 1.5% salt, reduced cholesterol egg product, and blend thereof, custard blends, and the like, liquid whole egg and blends thereof (less than 2% added ingredients), liquid whole egg blends which are 24-38% egg solids and 12% or less of added non-egg ingredients. (Kempf Aff., Ex. 27.)

According to Sunny Fresh, "liquid whole egg product" means a product primarily of liquid whole egg which also may contain other ingredients to the extent specified and permitted by USDA regulations, but not shelf life extending additives. (Kempf Aff., Ex. 26.)

Many claims in the '225 patent refer to "liquid whole egg products" and "liquid whole eggs." The claim language, however, does not define either term. The court therefore turns to the specification for clarification. *See Vitronics*, 90 F.3d at 1582.

The specification defines "liquid whole egg product" and "liquid whole egg" by stating that the terms in the patent have their "standard meaning in accordance with industry and regulatory usage." (Kempf Aff., Ex. 1, Col. 8, ll. 57-60.) Because the patent incorporates by reference regulatory usage, the court examines the regulations promulgated by the applicable regulatory agency, the USDA, at the relevant time. 7 C.F.R. s. 59.5 (1985) defines liquid egg products as "... any ... liquid eggs, with or without added ingredients..." 7 C.F.R. Part 59.411(d) (1985) states that "liquid whole eggs" can be blended to have different proportions than those directly from the shell. FN4 These regulations do not exclude preservatives from their definition of "liquid whole egg product" or "liquid whole egg."

FN4. It provides:

Liquid or frozen egg products identified as whole eggs and prepared other than in natural proportions, as so broken from the shell, shall have a total egg solids content of 24.70 per cent or greater. (*Id.*)

The specification also gives examples of "liquid whole egg product." It provides:

Examples of whole egg products which can be pasteurized in liquid form by the method of the present invention include whole egg, fortified whole egg (whole egg with added yolk), salt whole egg (e.g. salt 10%), sugar whole egg (e.g. sugar 10%), blends of whole egg with syrup solids, syrups, dextrose and dextrans and/or gums and thickening agents, blends of whole eggs with less than 1% sugar and/or salt, scrambled egg mixes (for example, a mix of about 51% egg solids, 30% skim milk solids, 15% vegetable oil and 1.5% salt), reduced cholesterol egg products and blends thereof, custard blends, and the like. Products which are extremely sensitive to thermal processing and which are particularly suitable for ultrapasteurization by the present invention include, for example, liquid whole eggs and blends thereof (less than 2% nonegg ingredients), fortified whole egg and blends thereof (24-38% egg solids, 2-12% added nonegg ingredients), liquid salt whole egg, liquid sugar whole egg, and other liquid whole egg blend which are 24-38% egg solids and 12% or less of added nonegg ingredients.

(Kempf Aff., Ex. 1, Col. 8, ll. 39-58.) Within those examples, the specification explains liquid whole eggs and blends thereof as containing less than 2% non-egg ingredients. (*Id.* at ll. 53-54.) None of these examples exclude preservatives from the definition of "liquid whole egg product" or "liquid whole egg." Thus, because the court cannot import a limitation into the specification that does not exist in the claim, the specification illustrates that "liquid whole egg" and "liquid whole egg product" may contain preservatives.

The prosecution history also supports that conclusion. During the course of the prosecution, Michael Foods argued that Dunn could be distinguished from its inventions because some of the Dunn examples used preservatives. (Stewart Decl. Ex. 12 at 159.) The Board of Appeals rejected that position because it found that Michael Food's claim did not exclude preservatives.FN5 The Board's holding emphasized that "liquid whole egg product" and "liquid whole egg" may include preservatives and that such an interpretation is consistent with agency regulations. (Kempf Aff., Ex. 20 at 13.)

FN5. The Board held:

However, claim 20 does not exclude a liquid whole egg product which may contain *preservatives* or have some egg yolk removed.... Dunn's liquid whole egg complies with the definition of liquid whole egg set forth in the appellants' specification and the egg solid requirements found in 7 C.F.R. s. 59.411(d).

(Kempf Aff., Ex. 20 at 13 (emphasis added).)

Sunny Fresh argues that because the Board rejected Claim 20 for including preservatives, the definitions of "liquid whole egg product" and "liquid egg product" necessarily must exclude preservatives or else they are invalid based upon the Board's analysis. (Sunny Fresh's Resp. to Def.'s Initial *Markman* Br. at 14.) This argument fails however because the Board never found that only narrowed claims that excluded preservatives would be allowable over Dunn. In fact, the Board stated that claims with a shelf life of 8 weeks or more were patentable over Dunn. (Kempf Aff. Ex. 20 at 19-20.) If the Board believed that the exclusion of preservatives was the only possible basis for patentability, then the Board could not have reversed the rejection of, for example, claim 22, as claim 22 primarily differed from claim 20 by including a shelf life from about 8 weeks to about 36 weeks.

Because intrinsic evidence unambiguously defines "liquid whole egg" and "liquid whole egg product," it is improper for the court to rely on extrinsic evidence in interpreting those disputed terms. *See Vitronics*, 90 F.3d at 1582; *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323 (Fed.Cir.2001); *Bell & Howell Document Mgmt. Prod. Co. v. Altek Sys.*, 132 F.3d 701 (Fed.Cir.1997). The court nevertheless notes that

the extrinsic evidence supports the court's interpretation.

Sunny Foods' own 30(b)(6) witness agreed that "liquid whole egg product" may contain preservatives. In his deposition, Dr. Efstathiou reviewed the definition of egg product provided in the Section 59.5 of Code of Federal Regulations and testified that egg product could include preservatives:

Q: Do you understand that to be the definition of egg products given by the Code of Federal Regulations at about that time?

A: Yes

Q: Does that definition exclude preservatives, in your understanding?

A: It doesn't say so.

Q: And do you have any different understanding from your personal basis on whether it excludes it?

A: Preservatives, my understanding is, was, that they need to be allowed for use for specific products.

Q: So the preservatives had to be approved, but the final product using them would still be a liquid egg product?

A: Yes.

(Second Kempf Aff., Ex. 43, at 24, l. 25; *Id.* at 25 ll. 1-14.) Moreover, while the testimony of Dr. Woodward, another 30(b)(6) witness, was inconsistent, he admitted that preservatives could be included in the definition of "liquid whole egg product" in some circumstances. (Kempf Aff., Ex. 15 at 45, ll. 19-23.) Thus, even though the court does not rely on those two opinions, the opinions do suggest that "liquid whole egg product" may contain preservatives.

Accordingly, the court construes the disputed terms as follows:

Liquid Whole Egg: "Liquid whole egg" refers to liquid whole egg or liquid whole egg blends containing less than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives.

Liquid Whole Egg Product: "Liquid whole egg product" refers to products which include liquid whole egg and may have more than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives.FN6· FN7

FN6. The court also construes the term "liquid whole egg blend" to include blends of whole egg with less than 1% sugar and/or salt, liquid whole egg blends which 24-38% egg solids and 12% or less of added non-egg ingredients. (*See* Kempf Aff., Ex. 1, Col. 8, ll. 41-60.)

Two additional terms require interpretation: (1) "liquid whole egg product is liquid whole egg blend which is about 24.38% egg solids and about 12% or less of added non-egg ingredients" and (2) "wherein the liquid whole egg product contains not more than 12% of added non-egg ingredients." In particular, the parties dispute the meaning of non-egg ingredients. Based upon a review of the file, record, proceedings and

relying upon the court's construction of the terms "liquid whole egg" and "liquid egg product," *supra*, the court construes the term non-egg ingredients to mean any ingredients not naturally found in the egg, including shelf life extending additives.

FN7. The court's definition of "liquid whole egg product" and "liquid whole egg" is consistent with the phrase "said liquid whole egg product is liquid whole egg" because liquid whole egg product is a category that includes the subcategory liquid whole eggs or blends thereof.

B. "Consisting Essentially of"

[13] Claim 21 of the '225 patent provides:

21. An aseptically packaged liquid whole egg product having a shelf life of from about 16 to 36 weeks under refrigerated conditions and consisting essentially of liquid whole egg product.

(Kempff Aff., Ex. 1, Col. 18, ll. 27-30.) The phrase "consisting essentially of" is a term of patent art that "limits the scope of a claim to the specified materials of step 'and those that do not materially affect the basic and novel characteristic(s).' " (Stewart Decl. Ex. 36.) Because the phrase "consisting essentially of" is a term of patent art and the patentee did not indicate that the phrase has an unaccustomed meaning, the court construes the phrase "consisting essentially of liquid whole egg product" to mean products that include liquid whole egg product as set forth above but not elements that could materially affect the basic and novel characteristics of the liquid whole egg product.

Sunny Fresh erroneously states that the phrase "consisting essentially of" appeared in the new claim 32 in order to avoid Dunn by excluding preservatives. The group of claims before the Board of Appeals included what was then numbered Claim 28, which had, at that time, the language "consisting essentially of liquid whole egg product." (Kempff Second Aff., Ex. 53.) Moreover, Michael Foods never argued that "consisting essentially of" was a basis for excluding preservatives but instead relied on the meaning of "liquid whole egg product." The Board rejected that interpretation and maintained the rejection of a claim that recited "consisting essentially of liquid whole egg product" based upon prior art containing preservatives. (Kempff Aff., Ex. 20 at 13.) Thus, Sunny Fresh's argument fails because "consisting essentially of" simply modifies the term "liquid egg product," which, as discussed, may contain preservatives.

C. Shelf Life

[14] Several claims refer to the term "shelf life." Michael Foods defines shelf life as "the period of time during which the product is not obviously spoiled per the criteria set forth in the patent under refrigerated (4 (deg.)C) conditions." (Michael Foods' Initial *Markman* Br. at 19-20.) Sunny Fresh defines the term to mean the USDA approved shelf life, for an approved process, under storage at about 40 (deg.)F (4 (deg.)C) based on the validation and verification procedures set forth in the USDA criteria for use of an expiration date for extended shelf life liquid egg products dated April 26, 1991 and February 3, 1992. (Kempff Aff., Ex. 26, App. at 2.)

The claim language does not define "shelf life." However, the specification offers a clear definition and explanation of the term. It provides: "Shelf Life. The times of spoilage of egg...." meaning the time the product can be stored before spoilage. (Kempff Aff., Ex. 1, Col. 15, l. 26.) Under the section titled "Refrigerated Storage Effect," the inventors explain what criteria should be used to judge whether or not the product is spoiled. It states that spoilage means "obviously spoiled, as indicated by organoleptic

evaluations." (*Id.*, Col. 13, ll. 57-61.) The patent gives the criteria for organoleptic evaluation:

The criteria for judgment were: (1) that the color was normal, i.e., within the expected range of color observed for eggs immediately post-processing, and (2) that there was no objectionable aromas or flavors.... Bright yellow colors, off-aromas, and pH values below seven were typical of samples judged to be spoiled.

(*Id.*, Col. 13, ll. 63-67; Col. 14, ll. 1-6.) The specification therefore acts as a dictionary, *Markman*, 52 F.3d at 979, defining the term "shelf life" to mean the period of time during which the product is not obviously spoiled using the organoleptic tests set forth in the patent under refrigerated (4 (deg.)C) conditions. The court therefore construes the term as such.

Sunny Fresh's argument that "shelf life" refers to the USDA criteria of 1991 and 1992 fails because one of ordinary skill in the art at the relevant time-1986-could not have understood the term "shelf life" to be referring to criteria that did not exist yet. Moreover, the *Papetti's* litigation did not define "shelf life" as the "USDA approved minimum shelf life," as Sunny Fresh asserts.FN8 (Sunny Fresh's Opening *Markman* Br. at 22.) In *Papetti's*, the parties disputed whether Papetti's "pre-selected" an actual shelf life. Papetti's argued that it was entitled to summary judgment because Michael Foods did not prove predetermination of actual shelf life. (Kempf Second Aff., Ex. 50 at 42-43.) In considering that argument, Judge Barry did not decide whether "shelf life" means "actual shelf life" or "the minimum shelf life necessary for U.S.D.A. approval." She found this distinction "unimportant." (*Id.*) Instead, she held that the U.S.D.A. shelf life applies regardless of how shelf life is defined, meaning under either definition of shelf life.FN9

FN8. Because both parties rely on *Papetti's* in their memoranda, and because the court refers to *Papetti's* throughout its opinion, the court discusses its precedential value. Decisions are mixed as to whether one district court should follow another co-equal district court's interpretation of a patent claim under the doctrine of collateral estoppel. *See, e.g.,* Graco Children's Prods. Inc. v. Regalo Intern., LLC, 77 F.Supp.2d 660, 664-665 (E.D.Pa.1999)(finding that patent owner was not bound by previous construction of claim in subsequent lawsuit against third party); TM Patents, L.P. v. Int'l Bus. Mach. Corp., 72 F.Supp.2d 370, 375 (S.D.N.Y.1999)(holding that construction given to claims in another district with another infringer has collateral estoppel effect in the present litigation). Here, *Papetti's* carries weight as part of the prosecution history and thus the intrinsic record. The court therefore does not reach the question of whether the *Papetti's* decision has collateral estoppel effect in the present action because the court instead relies on *Papetti's* as part of the intrinsic evidence.

FN9. Judge Barry stated:

Papetti's distinction between "actual shelf life" and the minimum shelf life necessary for U.S.D.A. approval is *unimportant*. Although the U.S.D.A. is unconcerned with the actual shelf life of a product so long as it lasts until the "pull date" Papetti's preselects a desired shelf life, albeit a minimum one, when it seeks to receive approval for that minimum duration. (Def. Opp. to Infr., at 34-38) Although there is a dispute over the meaning of [the] term "shelf life," it is clear that it is used and understood by those of "ordinary skill" in the art of *commercial* production as applying to a U.S.D.A. shelf life.

(Kempf Aff., Ex. 8 at 19 n. 18 (first emphasis added).)

[15] Moreover, contrary to Sunny Fresh's assertion, Michael Foods' reversal of their position from *Papetti's* is not barred by the doctrine of judicial estoppel. Judicial estoppel does not hinge on whether the party

previously argued a position, but instead hinges on whether that party was successful in having the court adopt that position. As the Supreme Court stated in *New Hampshire v. Maine*, 532 U.S. 742, 750-752, 121 S.Ct. 1808, 149 L.Ed.2d 968 (2001):

... courts regularly inquire whether the party has succeeded in persuading a court to accept that party's earlier position, so that judicial acceptance of an inconsistent position in a later proceeding would create "the perception that either the first or second court was misled."... Absent success in a prior proceeding, a party's later inconsistent position introduces no "risk of inconsistent court determinations"... *Id.* (citations omitted).

In *Papetti's*, Michael Foods was not successful in arguing its position because Judge Barry did not choose between the parties' competing definitions of "shelf life." Thus, based upon clear intrinsic evidence, the court construes the term "shelf life" to mean the period of time during which the product is not obviously spoiled using the organoleptic tests set forth in the patent under refrigerated (4 (deg.)C) conditions.

Sunny Fresh also requested that the court construe the term "extended refrigerated shelf life." Based upon a review of the file, record and proceedings, and relying upon the court's construction of the term "shelf life," the court construes the term "extended refrigerated shelf life" to mean a longer shelf life than the 7 to 14 day shelf life of refrigerated liquid whole egg products which have been conventionally pasteurized. (*See Kempf Aff.*, Ex. 1, Col. 1, ll. 38-40) (describing the conventional shelf life of liquid egg product as between 7 to 14 days.)

D. About

[16] Several of the claims discuss shelf life in terms of time limits. The dispute between the parties about the interpretation of those time limits centers on the word "about." Sunny Fresh claims that the word "about" means "not less than" (*Kempf Aff.*, Ex. 26), while Michael Foods claims that "about" means approximately, (*Kempf Aff.*, Ex. 27). The term "about" therefore requires construction.

The relevant claim language includes: "refrigerated shelf life of about four weeks to about 36 weeks," "a preselected shelf life of about eight weeks to about 36 weeks," "shelf life of about 16 to 36 weeks under refrigerated conditions," "shelf life of about 16 weeks," "shelf life of about 16 weeks to 36 weeks under refrigerated conditions," and "characterized by a refrigerated shelf life of about four weeks to 36 weeks." (*Kempf Aff.*, Ex. 23.)

As discussed, the words of a claim will be given their ordinary and accustomed meaning unless it appears that the inventor used them differently. *Vitronics*, 90 F.3d at 1582. According to the Federal Circuit, the ordinary and accustomed meaning of "about" is approximately. *See Conopco, Inc. v. May Dept. Stores Co.*, 46 F.3d 1556, 1561 n. 2 (Fed.Cir.1994)(quoting Webster's Third New International Dictionary (1986)); *see also* Blacks Law Dictionary (7th ed.1999)(defining about as "approximately"). The inventors in this case gave no indication in the claim language, specification or prosecution history that the word "about" means anything other than its ordinary and accustomed meaning. The court therefore construes the term "about" to mean "approximately." FN10

FN10. The exact boundaries of "about" in this case are a question fact for the trial court. As the Federal Circuit explained:

Such broadening usages as "about" must be given reasonable scope; they must be viewed by the

decisionmaker as they would be understood by persons experienced in the field of the invention. Although it is rarely feasible to attach a precise limit to "about," the usage can usually be understood in light of the technology embodied in the invention. When the claims are applied to an accused device, it is a question of technological fact whether the accused device meets a reasonable meeting of "about" in the particular circumstances.

Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1554 (Fed.Cir.1996) (citations omitted).

Sunny Fresh's definition of "about" ignores the ordinary and accustomed meaning of the term. Moreover, Sunny Fresh's definition of the term "about" renders language in the patent redundant and thus meaningless. For instance, Sunny Fresh claims that "about 8 weeks to about 36 weeks" means "a refrigerated shelf life of not less than 8 weeks to not less than 36 weeks." If a product has a shelf life of 12 weeks, it would meet the lower limitation—a shelf life of not less than 8 weeks—but would not meet the upper limitation—a shelf life of not less than 36 weeks. Because the only product that would meet Sunny Fresh's definition would be one with a greater than 36-week shelf life, the words "about 8 weeks" in the phrase "about 8 weeks to about 36 weeks" become meaningless. The court rejects such a definition. *See, e.g.,* Biagro Western Sales, Inc. v. Helena Chemical Co., 160 F.Supp.2d 1112 (E.D.Cal.2001)(stating that a patent claim should not be construed to render a language in patent meaningless). Moreover, if the inventors had intended such a result, surely the inventors simply would have excluded the language "about 8 weeks to" and succinctly provided for "a shelf life of about 36 weeks."

Accordingly, based upon clear intrinsic evidence, the court interprets the term "about" to mean "approximately" and, based upon that interpretation, construes the disputed elements as follows: "Shelf life of from about 16 to 36 weeks under refrigerated conditions" means shelf life of from approximately 16 to 36 weeks under refrigerated conditions, "Shelf life of about eight weeks to about 36 weeks" means shelf life of approximately eight weeks to approximately 36 weeks, "shelf life of about four weeks to about 36 weeks" means shelf life of approximately four weeks to approximately 36 weeks, "shelf life of about 16 weeks" means shelf life of approximately 16 weeks, "shelf life of about 16 weeks to 36 weeks under refrigerated conditions" means shelf life of approximately 16 weeks to 36 weeks under refrigerated conditions and "characterized by a refrigerated shelf of about four to 36 weeks" means characterized by a refrigerated shelf of approximately four to 36 weeks.

E. Equivalent Point and Equivalent Time/Temperature

[17] The parties further dispute the construction of the term "equivalent point," specifically the methodology used to calculate it. Michael Foods claims that the equivalent point should be interpreted as the equivalent time and equivalent temperature that represents the sum of all heat treatment according to the methodology given in the patent, while Sunny Fresh argues that the patent does not explain how to calculate the equivalent point and that the court must construe the equivalent point terminology to require use of mathematical techniques that provide the most accurate integrations. Sunny Fresh's argument fails because the patent clearly sets out a method for calculating the "equivalent point."

Claim 1 of the '225 patent provides in relevant part:

... wherein the total thermal treatment received by the liquid whole egg product is defined by an equivalent temperature and an equivalent time defining a point above the 5% SPL (Batch) line of FIG. 3...

The specification clearly sets out the method for calculating the equivalent point. (*See Kempf Aff.*, Ex. 1, Col. 4, ll 4-67; Col. 5, ll. 1-19.) It explicitly incorporates by reference two articles by Swartzel that outline the method for calculating the equivalent point:

Procedures for use of the equivalent point method for analyzing the thermal effects on products during continuous flow heating have been previously outlined (Swartzel, 1982, *J. Food Sci.* 47:1886 and Swartzel 1986, *J. Agric. Good Cem* 34:397) and are known to those skilled in the art

(*Kempf Aff.*, Ex. 1, Col. 4, ll. 24-37.) Because those articles are incorporated by reference, they are treated as if they were set out verbatim in the patent. *See Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1329 (Fed.Cir.2001)("When a document is 'incorporated by reference' into a host document, such as a patent, the referenced document becomes effectively part of the host document as if it were explicitly contained therein.") The court therefore construes the term "equivalent point" to require the method set out in the patent, including the 1982 and 1986 articles, rather than use of mathematical techniques that provide the most accurate integrations.

[18] Because the specification is clear, it is improper for the court to consider expert testimony in construing the term "equivalent point." *Vitronics*, 90 F.3d at 1582; *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323 (Fed.Cir.2001); *Bell & Howell Document Mgmt. Prod. Co. v. Altek Sys.*, 132 F.3d 701 (Fed.Cir.1997). However, if the court were to consider the extrinsic evidence, Dr. Labuza's deposition testimony would support the court's construction of "equivalent point" as requiring the methodology referred to in the patent and that is outlined in the Swartzel articles:

Q: Okay. But there was a method that Dr. Swartzel used.

A: Yes.

Q: Would one of ordinary skill in the art in 1986 understand that the method discussed in the patent for equivalent points is the method discussed in those '82 and '86 articles?

A: I presume so, yes.

(*Kempf Aff.*, Ex. 59 at 60, ll. 8-18.)

The parties also dispute whether the calculation should be done by reference to the fastest moving particle in the pasteurization process, as Sunny Fresh asserts, or by reference to the mean velocity, as Michael Foods suggests. Here, again, the patent language is clear. It requires use of the mean velocity: "Time is calculated by correlating means [sic., mean] residence time with location of the temperature probe." (*Kempf Aff.*, Ex. 1, Col. 4, ll. 48-59.) Additionally, one of ordinary skill in the art would understand that the calculations and time and temperatures discussed are referring to average speed based upon C.F.R. 7, Chapter 1, Part 55, Section 55.101, which governs the Grading and Inspection of Egg Products and provides, in relevant part, that "[u]nless otherwise indicated all subsequent references to hold time will refer to the *average* time." (*Stewart Decl.*, Ex. 30 at 14-15 (emphasis added).)

While Sunny Fresh argues that the patent discusses mean residence time (and hence average speed) only during the heating stage, the patent also describes a method for determining the residence time in the

holding section because the heating section and the holding section are the same for the apparatus used in the patent. (*See* Kempf Aff., Col. 9, ll. 19-28.) Moreover, the incorporated reference provides for mean residence time when focusing on product quality considerations during the holding stage. (*See* Stewart Decl., Ex. 85.) Thus, the court construes the patent to require mean velocity during both the heating and holding stages.

[19] The patent also refers to "equivalent temperature" and "equivalent time." These terms describe the total thermal treatment received by the liquid whole egg product during processing. The patent specification clearly describes the application and use of those two terms. (*See* Kempf Aff., Col. 3, ll. 11-16; Col. 4, ll. 4-67; Col. 5, ll. 1-19.) Contrary to Sunny Fresh's assertion, (*see* Kempf Aff., Ex. 26 at 7), nothing in the patent defines the equivalent time and equivalent temperature to mean the equivalent point for the fastest moving particle of egg which must be above previously known actual time/temperature egg pasteurization conditions.

F. 5% Soluble Protein Loss ("SPL") and 5% SPL Lines of Figure 3

[20] Michael Foods contends that "heated for a predetermined time and to a predetermined temperature insufficient to cause more than a 5% soluble protein loss from said product means testing the product to determine the difference in SPL prevs. post-pasteurization." (Michael Foods' Initial *Markman* Br. at 30.) Sunny Fresh claims that "soluble protein loss" includes the cumulative losses of natural proteins in an egg product caused by thermal treatment and mechanical effects during the pasteurization and packaging of the product. (Kempf Aff., Ex. 26 at 7.) Sunny Fresh argues that the "loss" is measured from raw egg to packaged egg product.(*Id.*) The court therefore must construe the term "5% SPL."

The specification makes clear that "5% SPL" refers to an actual measurement calculated "by determining the loss of soluble protein as described by Hammid-Samimi et al., supra." (Kempf Aff., Col. 10, ll. 28-29.) The patent provides various industry-recognized tests for measuring the SPL in Table 3 of the patent. The court therefore construes the term "5% SPL" to refer to actual test results on product based on the test methods referenced in the patent.

While the parties appear to agree that the measurement begins from the raw product, (Michael Foods' Initial *Markman* Br. at 30; Kempf Aff., Ex. 26 at 7), the parties disagree on the measurement's ending point. The claim element refers to heating, not packaging. (*See, e.g.*, Kempf Aff., Ex. 3, Col. 15 43-67; Col. 16 ll. 1-8.) If the court were to adopt Sunny Fresh's suggestion that the SPL is the difference between raw product and post-packaging, the court would erroneously read the requirement of packaging into the claim. *See* *Markman*, 52 F.3d at 980 (stating that it is the "function and purpose of the claims" to "delimit the right to exclude."). Instead, because the patent expressly mentions heating, the court construes the term "5% SPL" to mean testing the product to determine the difference in the SPL pre- and post-pasteurization based upon the methods described in the patent.

The court notes that certain claim elements also discuss whether the equivalent point calculation results in a point about the "5% SPL (Batch) line of Figure 3." For instance, Claim 1 of the '225 patent states that "the total thermal treatment received by the liquid whole egg product is defined by an equivalent temperature and an equivalent time defining a point about the 5% SPL (Batch) line of Fig. 3..." (Kempf Aff., Ex. 1, Col. 15, ll. 59-62.) The total thermal treatment a product receives in a continuous processing system includes any impact on product constituents caused by the heating, holding and cooling steps of the process. (*Id.*, Col. 4, ll. 4-23.) In continuous flow processing equipment, the thermal treatment is described by a point in Figure 3

of the '225 patent defining an equivalent time and an equivalent temperature. Under the desired processing conditions, the equivalent point is above the 5% SPL (Batch) line shown in Figure 3.FN11

FN11. The court notes that the 5% SPL (Batch) line was mislabeled in Figure 3 as the 15% SPL (Batch) and is the lower of the 15% SPL (Batch) lines in Figure 3.

G. Predetermined Time/Temperature

[21] The parties agree that the word predetermined means "established in advance." (Sunny Fresh Opening *Markman* Br. at 39-40; Michael Foods Resp. at 33.) Yet the parties disagree on whether "predetermined" is based upon USDA preapproval requirements and/or is limited to commercial runs.FN12 The patent states that "[t]erms used herein have their standard meaning in accordance with industry and regulatory usage." (*See* Kempf Aff., Ex. 1, Col. 8, ll. 58-60). The patent also incorporates by reference USDA regulation 7 C.F.R. 59.570(b)(1985), which sets forth pasteurization requirements. (Kempf Aff., Ex. 1, Col. 8, ll. 58-60). Moreover, the patent does not indicate an intention to define the term "predetermined" other than according to industry and regulatory usage. The court therefore construes the term "predetermined" to be based upon relevant USDA requirements because the patent specifically incorporates USDA regulations.FN13

FN12. The parties disputes the construction of the term "predetermined" in the following claim terms: "predetermined holding temperature," "predetermined holding time," "heated to a predetermined real temperature," "the liquid whole egg product is heated to a predetermined real temperature by contacting said liquid whole egg product to a heated surface," and "wherein said predetermined temperature and predetermined time are selected to impart said predetermined shelf life."

FN13. In its initial *Markman* brief, Michael Foods correctly asserts that the court should look to the relevant Code of Federal Regulations to define "liquid egg product" and "sterilize." (*See, e.g.*, Michael Foods Initial *Markman* Br. at 14, 39.) For the same reason that the Michael Foods asserts that the court should consider those regulations in defining those terms, Michael Foods errs in arguing that the court should not consider those regulations to define "predetermined."

However, the court's construction of the term "predetermined" does not include the additional limitation of "commercial" as the Patent Office has previously stated that the claims are not limited to commercial process. (*See, e.g.*, Kempf Aff., Ex. 46 at 45, 51, 77-78.) Moreover, the court's construction of "predetermined" in no way allows Sunny Fresh to let its process drift either intentionally or unintentionally. *See* Rite-Hite Corp. v. Kelley Co., Inc., 56 F.3d 1538, 1574 (Fed.Cir.1995)("[A] finding of infringement is not dependent on a finding of negligence or culpable intent by the wrongdoer. An infringement, like a trespass, may be committed unknowingly."). The court therefore construes the term predetermined to mean established in advanced based upon USDA pre-approval requirements but not limited to commercial runs.

H. A Preselected Refrigerated Shelf Life

[22] The parties disagree upon the construction of the term "preselected." Michael Foods contends that a "preselected refrigerated shelf life" means a refrigerated shelf life known ahead of time, (Michael Foods' Initial *Markman* Br. at 25), while Sunny Fresh asserts that the term means a desired shelf life chosen by (1) selecting a point on a line or in a region of Figure 4 of the patents which will provide the desired shelf life,

(2) specifying a total thermal treatment based on an equivalent time and equivalent temperature in advance of the start of the pasteurization process, (3) establishing the operating conditions of the particular pasteurizing apparatus being used that will provide the selected thermal treatment and (4) obtaining USDA pre-approval of a process for commercial use and product labeling. (*See Kempf Aff. Ex. 26 at 2.*)

Contrary to Sunny Fresh's assertion, the claims do not require use of Figure 4. For instance, Claim 15 of the '225 patent provides, in relevant part:

A method of making a packaged liquid whole egg product characterized by a preselected refrigerated shelf life of about four weeks to about 36 weeks...

Claim 15 does not even mention Figure 4.

The specification discusses Figure 4 and the term "preselected shelf life" as follows:

A liquid whole egg product having a preselected shelf life of from about 4-36 weeks is made by selecting a point on a line or in a region which will provide the desired shelf life, determining the equivalent time and equivalent temperature which correspond to the point selected, and-preferably through the use of the equivalent point method-establishing the operating conditions on the particular pasteurizing apparatus being used that will provide the selected thermal treatment. Products have shelf lives not depicted in FIG. 4 are made by extrapolating the teachings of the figure in light of the teachings above.

(*Kempf Aff., Ex. 1, Col. 6 l. 67; Col. 7 ll. 1-11.*) While this portion of the specification provides a guide as to how to establish "preselected shelf life," the specification does not require use of Figure 4 to determine "preselected shelf life." The specification emphasizes that the patent does not require use of Figure 4 when stating that the graphs, including Figure 4, "are ... not to be taken as limiting the present invention, as departures could be made therefrom while still capturing and benefitting from the teachings of the invention." (*Kempf Aff., Ex. 1, Col. 7, ll. 32-35.*) To read such a limitation into the claims would violate the canon of claim construction that the court cannot import a limitation from the specification's general discussion. *See, e.g., Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1278 (Fed.Cir.1995)*(finding the district court "erred by importing unnecessary functional limitations into the claim.").

The prosecution history supports the court's analysis. In *Papetti's*, Judge Barry found that "preselected shelf life" does not incorporate or refer to Figure 4 of the patents, using similar analysis:

Moreover, the claims do not require reference to Figure 4. For example, claim 15 of the '408 patent provides that what is claim is:

A method of making a package liquid whole egg product characterized by a preselected shelf life of about four weeks to about 36 weeks ... wherein said holding temperature and holding time are selected to impart said preselected shelf life.

Clearly the language of this claim does not require one to use Figure 4, which is not even mentioned (only Figure 3 is mentioned here), to choose time and temperature operating conditions. The language merely requires that operating conditions be established so as to produce an extended shelf life product. Even if the claim language itself were unclear, the specification states that the graphs are not to be taken as limiting the invention. ('425 Patent, Col. 7, Lines 33-36; '425 Patent, Col. 15, Lines 39-43.) *See Cabot, 845 F.2d at 987*

("[w]here a specification does not *require* a limitation, that limitation should not be read from the specification into the claims.")

Plaintiffs correctly argue that the "preselection methodology" Papetti's interprets the claim to require is not, in fact, required. The language "heated to a predetermined real temperature" of claim 4 of the '408 patent, for example, simply means that the temperature must be known ahead of time.

fn17 Neither Official Action issued by the PTO in the reissue proceeding, to be discussed infra, suggests that use of any of the graphs is required.

(Kempf Aff., Ex. 8 at 17-18.) Thus, based upon the intrinsic evidence, the court construes the term "preselected" to mean known ahead of time.FN14

FN14. In contrast to Sunny Food's discussion of the term "predetermined," Sunny Fresh has given no explanation of why the requirement of USDA pre-approval of a process for commercial use and product labeling should be incorporated into the patent. The court finds that an ordinary person skilled in the industry at the relevant time would not have understood the patent to include such a requirement.

I. Aseptically Packaged, Aseptically Packaging, Aseptic Packaging

[23] The parties dispute the meaning of the terms "aseptically packaged," "aseptically packaging" and "aseptic packaging." Michael Foods claims that "aseptically packaged" means "packaged to the exclusion of microorganisms other than those carried by the liquid whole egg product." (Michael Foods' Initial *Markman* Br. at 40.) Sunny Fresh asserts that "aseptically packaged" means "a sterile packaging environment, sterile packaging materials and sterile (hermetic) sealing." (Sunny Fresh's Resp. at 19.)

The specification clearly defines aseptically packaged. It states that "[a]septically packaged means packaged to the exclusion of microorganisms other than those carried by the liquid whole egg product." (Kempf Aff., Ex. 1, Col. 6, ll. 57-59.) Sunny Fresh argues that such a construction does not give the term its ordinary meaning. However, a patentee is free to be his own lexicographer, so long as the patentee makes his intentions clear in the patent, *Vitronics*, 90 F.3d at 1582; *Chisum on Patents*, s. 18.03[3](1999), and the patentee in this case has done just that by clearly defining the term "aseptically packaged" in the specification.FN15

FN15. Sunny Fresh asserts several other arguments as to why its construction of the term is clear. However, each of these arguments fails to account for the clear definition of the term in the patent. That definition controls.

The court looks to extrinsic evidence to determine whether the patent's aseptic packaging includes extended shelf life packaging ("ESL") because the intrinsic evidence does not answer this question. Sunny Fresh's 30(b)(6) witness testified:

Q: Aseptic packaging, in your understanding in the context of non-egg food products, is introducing an aseptic product into an aseptic package?

A: Not necessarily. Aseptic packaging by itself is aseptic packaging, aseptic filling environment. Now what comes into the system dictates what would be the storage requirements for the finished product. Sometimes they would-in the food industry they would introduce nonsterile product into a nonaseptic-into an aseptic packaging system to get more of a shelf life under refrigerated conditions of this product. Most frequently it would be, as you indicated before, sterile product into sterile package-sterile packaging environment to get the shelf stable product.

Q: Can you give me an example of what you meant by "they would introduce a nonaseptic product"?

A: In the dairy business they would pasteurize product that-in a way that will result in a nonsterile stream, and then they will introduce it into-into an aseptic packaging system and *that would result to, as it's called now, I didn't know the term before, an extended shelf life product.* (Kempf Aff., Ex. 21 at 102, ll. 18-103, ll. 19) (emphasis added).

This testimony shows that one of ordinary skill in the art reading the patent would understand that taking a nonsterile stream of product and introducing it into an aseptic packaging system "... would result to [sic], as it's called now, I didn't know the term before, an extended shelf life product." *Id.* The court therefore construes the terms "aseptically packaged," "aseptically packaging" and "aseptic packaging" to mean packaged to the exclusion of microorganisms other than those carried by the liquid whole egg product and notes that those terms may include ESL.

J. Packaging/Packaged

[24] The parties also dispute the construction of the term "packaging" and "packaged." Michael Foods contends that the terms means placed or placing in a container, (Michael Foods' Initial *Markman* Br. at 43), while Sunny Fresh argues that the term means aseptically packaged or packaging (Sunny Fresh's Resp. at 25-26).

Some claims terms use "aseptically packaged," (*see, e.g.*, Kempf Aff., Ex. 1, Col. 15, l. 65; Claim 4, Col. 16, l. 21), and some use just "packaged," (*see, e.g.*, *Id.*, Col. 16, l. 3; Col. 16, l. 33). Interpreting the terms identically erroneously would read the additional limitation of "aseptic" into the claim element "packaging." *See Texas Co. v. Globe Oil & Ref. Co.*, 112 F.Supp. 455, 467 (7th Cir.1953)("the presence of an express limitation in one claim negatives an intent similarly to limit by implication a claim in which the limitation is not expressed...."). It also would render the term "aseptic" redundant and thus the phrase "aseptic packaging" nonsensical. FN16 *See, e.g.*, *Biagro Western Sales v. Helena Chemical Co.*, 2001 WL 980961 (E.D.Cal.2001)(stating that a patent claim should not be construed to render language in patent meaningless). Thus, the court construes the terms "packaging" and "packaged" to mean placed or placing in a container.

FN16. Based upon Sunny Fresh's interpretation of "packaging" as "aseptic packaging," the term "aseptic packaging" when written in the claim literally would be interpreted to mean "aseptic packaging packaging." The court cannot adopt such a meaningless interpretation of the claim language. *See Biagro Western Sales v. Helena Chemical Co.*, 160 F.Supp.2d 1112 (E.D.Cal.2001)

K. Sterilize

[25] The patent also includes the term "sterilized." Michael Foods interprets the term to mean "clean to

reduce the level of microorganisms on a surface or in an environment equivalent to the sanitization and cleaning described in the Egg Pasteurization Manual." (Michael Foods' Initial *Markman* Br. at 38.) Sunny Fresh interprets the term to mean "subjected to conditions that will eliminate all microorganisms." (Kempf Aff., Ex. 26 at 10.) The term therefore requires construction.

While the claim language and specification do not help explain the term "sterilized," the prosecution history shows that "sterilize" means to make free of all viable microorganisms. In the reissue/reexamination proceedings, the examiner confirmed that definition of "sterilization," stating:

It would have been obvious to one having ordinary skill in the art at the time of the invention to have *pre-sterilized said equipment to make same free of all viable microorganisms* and, therefore, avoid contamination via the equipment used to treat said liquid egg *such is the basic definition of sterilization*, and this is the reason used by Padley et al to pre-treat their equipment in such a way prior to the egg pasteurization process.

(Stewart Decl., Ex. 101 at 61-62 (emphasis added).) Here, the Examiner explicitly defined "sterilization" to mean "to make free of all viable microorganisms." (*Id.*)

Michael Foods argues that because the Board of Appeals equated sterilized and sanitized the two terms are synonymous. The Board of Appeals stated: "The Egg Pasteurization Manual teaches (pp. 35-39) to sanitize/clean/sterilize the pasteurization apparatus before passing the next run of liquid egg material to the pasteurization apparatus." (Kempf Aff., Ex. 20 at 32.) While the Board may have intended to equate sanitize and sterilize in that opinion, the court cannot rely upon the Board's statement because the relevant portion of the Egg Pasteurization Manual does not equate sterilization and sanitization. In fact, it does not even mention sterilization; it only teaches sanitization.

Michael Foods also relies on 7 C.F.R. s. 59.5, which defines sanitization. However, that definition only describes treatments that may be used in cleaning pasteurizing equipment, not the severity of that treatment or the thoroughness of the treatment necessary to achieve "sterility." The regulation never mentions "sterilized," let alone defines the term.

Additionally, even though the court does not rely upon extrinsic evidence because the prosecution history is clear, *Vitronics*, 90 F.3d at 1582 (stating it is improper for the court to rely on extrinsic evidence when intrinsic evidence is clear); *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323 (Fed.Cir.2001); *Bell & Howell Document Mgmt. Prod. Co. v. Altek Sys.*, 132 F.3d 701 (Fed.Cir.1997), the court notes that the extrinsic evidence shows that distinction between "sanitize" and "sterilize" exists within the industry. Michael Foods' packaging supplier Elopak testified that there is "absolutely" a distinction recognized in the packaging industry between "sanitizing" and "sterilizing:"

Q: (Mr. Schroer) Is there a distinction in the packaging industry between sterilization and sanitation?

A: (Elopak) Absolutely.

MR. VITEK: Objection, foundation.

Q: (By Mr. Schroer) I'm sorry. Your answer was?

A: Absolutely.

Q: And would you explain the difference between sanitizing and sterilizing?

A: From my vantage point, sanitation will minimize contamination on a surface, but not totally eliminate it.

Sterilization, simply stated, is to eliminate contamination. (See Stewart Decl., Ex. 93 at 24, ll. 13-25) (emphasis added.)

Accordingly, the court construes the term "sterilize" to mean to make same free of all viable microorganisms.FN17

FN17. Relying on the court's construction of "sterilized" and "liquid whole egg," the court construes the term "non-sterile pasteurized liquid whole egg" to mean liquid whole egg that has been pasteurized but not made free of all viable microorganisms.

L. Contact to a Heated Surface

[26] Some claims include heating the unpasteurized egg by contact to a heated surface. Sunny Fresh claims that the court must read "heated surface" to mean heated surface of the heat exchanger. (Kempf Aff., Ex. 26 at 4.) Michael Foods argues that the "heated surface" does not need to be part of the heat exchanger.

The patent language is clear. It provides that "[t]he liquid whole egg product is preferably heated by contacting the product to a heated surface." (Kempf Aff., Ex. 1, Col. 6, ll. 40-41.) The patent does not require the "heated surface of the heat exchanger." As Michael Foods correctly suggests, (Michael Foods' Initial *Markman* Br. at 29), the court should not incorporate the further limitation of the heat exchanger into the claim element where it is not expressed in the claim. *See Markman*, 52 F.3d at 980 (stating that it is the "function and purpose of the claims" to "delimit the right to exclude."). Sunny Food does not dispute this suggestion in its response memorandum. The court therefore adopts Michael Food's construction of the term "contact to heated surface." (See Kempf Aff., Ex. 27 at 7.)

M. Turbulence

[27] Some elements refer to "turbulence." For instance, Claim 4 of the '225 patent provides, in relevant part: "contacting said liquid whole egg product to a heated surface while at least periodically subjecting said continuous stream of liquid whole egg product to turbulence..." (Kempf Aff., Ex. 1, Col. 16, ll. 14-16.) Claim 9 provides that "said liquid whole egg product is subjected to turbulence for a major portion of the time said liquid whole egg product is heated." Because the parties dispute the construction of the term "turbulence," the court examines this term.FN18

FN18. Michael Foods defines "turbulence" as the mixing of particles over the cross-section of the product stream, while Sunny Fresh argues that "subjecting said continuous stream of liquid whole egg product to turbulence" means the heated surfaces of the heat exchanger are intentionally designed to impart a "complete" mixing of the stream of egg product during heating.

The patent unambiguously defines "turbulence." It states that "turbulence ... is the mixing of particles over

the cross-section of the product stream...." (Kempf Aff., Ex. 1, Col. 8, ll. 18-20.) The patent also refers to the Egg Pasteurization Manual at pages 6-8. (*Id.* at l. 20.) The Egg Pasteurization Manual explains turbulent flow as "continuous mixing over the entire cross-section of flow." (Stewart Decl., Ex. 30 at 6.) Moreover, while the court does not rely upon extrinsic evidence because the patent clearly defines the term, the court notes that Sunny Fresh's witness agrees that turbulence means mixing. (*See* Kempf Aff., Ex. 15 at 97, ll. 5-17 ("Turbulence is, in the real sense, it's mixing....").) The court rejects Sunny Fresh's additional limitation that mixing means complete mixing because neither the patent does not teach such an understanding of the term.FN19 *See* Markman, 52 F.3d at 980 (stating that it is the "function and purpose of the claims" to "delimit the right to exclude.").

FN19. The court also construes "major portion of the time heated" to mean greater than 50% of the time the product is heated and "periodically" to mean from time to time. The parties do not appear to dispute those definitions. (*See* Kempf Aff. Ex. 26-27.)

N. Ultrapasteurizing

The parties dispute the meaning of the term "ultrapasteurizing." Michael Foods argues that "ultrapasteurizing is to decrease the number of spoilage organisms beyond that obtained with conventional pasteurization without sacrificing functional performance." (Michael Foods' Initial *Markman* Br. at 35.) Sunny Fresh contends that ultrapasteurization means (1) using higher than previously known actual time/temperature pasteurization conditions and (b) which decrease the number of spoilage microorganisms to levels lower than obtained by the previously-known conditions. (Kempf Aff., Ex. 26 at 2.)

Claim 8 discusses "a method of ultrapasteurizing a liquid whole egg product." (Kempf Aff., Ex. 1, Col. 16, ll. 36-37.) The specification explicitly defines "ultrapasteurize" as "decrease the number of spoilage microorganisms to levels lower than obtained with a pasteurization procedure." (*Id.*, Col. 1, ll. 67; Col. 2 l. 1.) "Pasteurize" means "to cause a nine log cycle (9D) or 99.9999999% reduction in Salmonella in the product being treated." (*Id.*, Col. 5, ll. 28-31.) The specification does not say ultrapasteurization means reduction below any previously known treatment, but only below the pasteurization treatment defined as a 9 log reduction in salmonella.

Adopting Sunny Fresh's construction of the term would add the additional limitation that ultrapasteurization can only refer to using higher than previously known actual time/temperature pasteurization conditions. The additional limitation is not found in the language of the claim, the specification or the prosecution history. As discussed, to import such a limitation into the claim language would be a mistake of claim construction. *See* Markman, 52 F.3d at 980. Instead, based upon the claim language and the specification, the court construes the term "ultrapasteurization" to mean to decrease the number of spoilage organisms beyond that obtained with conventional pasteurization without sacrificing functional performance.

O. Coagulate

Claim 1 of the '225 Patent provides that the thermal treatment is "insufficient to cause coagulation of the liquid whole egg product...." (Kempf Aff., Ex. 1, Col. 15, ll. 63-64.) However, the intrinsic evidence does not define the term "coagulation." The court therefore evaluates extrinsic evidence in construing the term. *See* Markman, 52 F.3d at 980. The common understanding of "coagulate" means to cause transformation into a soft, semi-solid or solid mass. The American Heritage Dictionary, Second College Edition, at 285 (1985); *see also* Webster's 3rd Edition at 432 (1986)(stating that coagulation means to become soft, semi-

solid mass). Expert testimony shows that coagulation relates to whether the egg product is still a liquid:

Q: The next term, (gg), quote, "insufficient to cause coagulation of the liquid whole egg product," unquote, what would one of ordinary skill in the art understand that to mean?

A: He would understand that to mean that the egg is still in a liquid state and, as it says, insufficiently coagulated, or in other words it would remain in the same state as before treated.

.....

Q: Would one of ordinary skill in the art understand the extended shelf life liquid whole eggs to be uncoagulated?

A: He would understand that that would certainly be the expected outcome because the liquid product should perform as a liquid instead of as a cooked product, so it should still have the same properties, same properties. Primarily you are looking at viscosity would be one way of measuring, has it changed.

(Kempf Aff., Ex. 15 at 93, ll. 23-25; *Id.* at 94, ll. 1-5; *Id.* at 94, ll. 23-25; *Id.* at 95, ll. 1-7.) Because the patent did not indicate that anything other than the ordinary and accustomed meaning of the term "coagulate" applies, the court adopts the ordinary meaning of the term, construing "coagulate" to mean to become a soft, semi-solid mass.FN20

FN20. The phrase "insufficient to cause coagulation of the liquid whole egg product" refers to processing which provides a product which is not coagulated by thermal treatment the product receives.

P. Remaining Terms

The parties have not briefed the remaining disputed terms that require construction. Nevertheless, based upon a review of the file, record and proceedings herein, the court construes the terms as follows.

1. Pasteurizing Apparatus

[28] The "pasteurizing apparatus" is the equipment used to pasteurize the liquid egg product. (*See* Stewart Decl. Ex. 30.) The phrase "pasteurizing apparatus is sterilized" must be interpreted based upon the court's construction of the terms "pasteurizing apparatus" and "sterilized." Relying upon the court's construction of those terms, the court construes the phrase "pasteurizing apparatus is sterilized" to mean that the equipment used to pasteurize the liquid egg product is made free of all viable microorganisms.

2. Heating Unit

[29] Based upon the language of the specification, the court construes "the heating unit" as the heating section of the pasteurization apparatus. (*See* Kempf Aff., Ex. 1, Col. 9, ll. 9-35.)

3. Wherein every Particle of Liquid Whole Egg Product is in Contact with said Heated Surface for a Total Time Less than the Average Residence Time of Each Particle in the Heating Unit.

While Michael Foods offers a proposed construction of this phrase in its preliminary *Markman* disclosures,

(Kempff Aff., Ex. 27), Sunny Fresh neglects to do so. It therefore appears that this term is undisputed. Nevertheless, based upon the claim, the specification, the record and the proceedings, the court notes that the terms in this phrase have their ordinary and accustomed meaning.

CONCLUSION

Accordingly, **IT IS HEREBY ORDERED** that:

A. The contested terms of the patent are interpreted to mean:

1. "Liquid whole egg" refers to liquid whole egg or liquid whole egg blends containing less than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives.
2. "Liquid whole egg product" refers to products which include liquid whole egg and may have more than 2% added non-egg ingredients. Such non-egg ingredients may include preservatives.
3. "Liquid whole egg blend" means blends of whole egg with less than 1% sugar and/or salt, liquid whole egg blends with 24 to 38% egg solids and 12% or less of added non-egg ingredients.
4. "Liquid whole egg product is liquid whole egg blend which is about 24.38% egg solids and about 12% or less of added non-egg ingredients," includes the term non-egg ingredients, which means any ingredients not naturally found in egg including shelf life extending additives.
5. "Where a liquid egg product contains not more than 12% of added non-egg ingredients" includes the term non-egg ingredients, which means any ingredients not naturally found in the egg including shelf life extending additives.
6. "Consisting essentially of liquid whole egg product" refers to products that include liquid whole egg product as set forth above but not elements that could materially affect the basic and novel characteristics of the liquid whole egg.
7. "Shelf life" means the period of time during which the product is not obviously spoiled using the organoleptic tests set forth in the patent under refrigerated (4 degrees Celsius) conditions.
8. "Extended refrigerated shelf life" means a shelf life longer than the 7 to 14 day shelf life of refrigerated liquid whole egg products which have been conventionally pasteurized.
9. "About" means approximately.
10. "Shelf life of from about 16 to 36 weeks under refrigerated conditions" means shelf life of approximately 16 to 36 weeks under refrigerated conditions.
11. "Shelf life of about 8 weeks to about 36 weeks" means shelf life of approximately 8 weeks to approximately 36 weeks.
12. "Shelf life of about 4 weeks to about 36 weeks" means shelf life of approximately 4 weeks to approximately 36 weeks.

13. "Shelf life of about 16 weeks" means shelf life of approximately 16 weeks.
14. "Shelf life of about 16 weeks to 36 weeks under refrigerated conditions" means shelf life of approximately 16 weeks to 36 weeks under refrigerated conditions.
15. "Characterized by refrigerated shelf life of about 4 to 36 weeks" means characterized by refrigerated shelf life of approximately 4 to 36 weeks.
16. "Equivalent point" requires the methods set out in the patent, including the 1982 and 1986 articles by Swartzel.
17. "Equivalent temperature" and "equivalent time" describe the total thermal treatment received by the liquid whole egg product during processing.
18. "Heated for a predetermined time and to a predetermined temperature insufficient to cause more than a 5% soluble protein loss (SPL) from said product" means testing a product to determine the difference in the soluble protein loss pre- and post-pasteurization based on the methods described in the patent.
19. "The total thermal treatment received by the liquid whole egg product [or "liquid whole egg"] is defined by [or "described by"] an equivalent temperature and an equivalent time defining a point about the 5% SPL (Batch) line of FIG. 3" means modeling the total thermal treatment received by the product according to the equivalent point calculation referred to in the patent specification and comparing the resultant equivalent point with the 5% SPL (Batch) line of Figure 3.
20. "Predetermined time/temperature" means established in advance based upon USDA preapproval requirements but not limited to commercial runs
21. "Preselected" means known ahead of time.
22. "A preselected refrigerated shelf life" means a refrigerated shelf life that is known ahead of time.
23. "Aseptically packaged," "aseptically packaging," and "aseptic packaging" mean packaged to the exclusion of microorganisms other than those carried by the liquid whole egg product.
24. "Packaging/packaged" means placed or placing in a container.
25. "Sterilize" means to make free of all viable microorganisms.
26. "Non-sterile pasteurized liquid whole egg" means liquid whole egg that has been pasteurized but not made free of all viable microorganisms.
27. "Contacting said liquid whole egg product to a heated surface" means the product is heated in contact with a higher temperature surface that does not need to be part of the heat exchanger.
28. "Turbulence" means the mixing of particles over the cross-section of the product stream. "Major portion of the time heated" means greater than 50% of the time the product is heated. "Periodically" means from

time to time.

29. "Ultrapasteurizing" means to decrease the number of spoilage organisms below that obtained with conventional pasteurization without sacrificing functional performance.
30. "Coagulate" means to become a soft or semi-solid mass.
31. "Pasteurizing apparatus" means the equipment used to pasteurize the liquid egg product.
32. "Pasteurizing apparatus is sterilized" means that the equipment used to pasteurize the liquid egg product is made free of all viable microorganisms.
33. "Heating unit" means the heating section of the pasteurizing apparatus.
34. "Wherein every particle of liquid whole egg product is in contact with said heated surface for a total time less than the average resonance time of each particle in the heating unit" has its ordinary and accustomed meaning.

B. Defendant's motion to strike expert declarations [Docket No. 113] is denied.

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