IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

DSM IP ASSETS, B.V. & DSM BIO-BASED PRODUCTS & SERVICES B.V.,

Plaintiffs,

v.

LALLEMAND SPECIALTIES, INC. & MASCOMA LLC

Defendants.

Civil Action No. 16-cv-497

COMPLAINT AND DEMAND FOR JURY TRIAL

Plaintiffs DSM IP Assets, B.V. and DSM Bio-Based Products & Services B.V. (collectively, "DSM" or "Plaintiffs") allege as follows against Defendants Lallemand Specialties, Inc. ("Lallemand") and Mascoma LLC ("Mascoma") (collectively, "Defendants"):

NATURE OF THE ACTION

1. This is an action by DSM for patent infringement against Defendants arising out of Defendants' manufacture, use, sale, offer for sale, and/or importation of their TransFerm Yield+ product in this district and throughout the United States.

PARTIES

2. Plaintiff DSM IP Assets, B.V. is a Netherlands corporation with a registered place of business at Het Overloon 1, 6411 TE Heerlen, The Netherlands.

3. Plaintiff DSM Bio-Based Products & Services B.V. is a Netherlands corporation with a registered place of business at Alexander Fleminglaan 1, 2613 AX Delft, The Netherlands.

4. On information and belief, Defendant Lallemand Specialties, Inc. is a Minnesota corporation with a principal place of business located at 6120 West Douglas Avenue, Milwaukee, Wisconsin 53218.

5. On information and belief, Defendant Mascoma LLC is a Delaware limited liability company with a principal place of business located at 610 Lincoln Street, Suite 100, Waltham, Massachusetts 02451.

JURISDICTION AND VENUE

6. The Court has subject matter jurisdiction over this action.

7. This patent infringement action raises a federal question under the patent laws of the United States, Title 35 of the United States Code, § 1 *et seq*.

8. The Court has diversity jurisdiction over the parties under 28 U.S.C. § 1332 because the parties are diverse and the amount in controversy exceeds $75,000.

9. The Court has personal jurisdiction over Defendants.

10. On information and belief, Defendants Lallemand, through its Biofuels & Distilled Spirits unit, and Mascoma commercialize their transgenic yeast products, including TransFerm Yield+, in partnership with one another.

11. On information and belief, Defendants have entered into an agreement with one another affecting substantial business transactions that have occurred in this District and that might occur in this District in the future.

12. On information and belief, Defendants have conducted and currently conduct business within the State of Wisconsin, including in this District.

13. On information and belief, Defendants directly or through intermediaries (including distributors, retailers, and others) ship, distribute, offer for sale, sell, and advertise

(including through an interactive web page) their yeast products, including TransFerm Yield+, in the State of Wisconsin and the Western District of Wisconsin.

14. On information and belief, Defendants have purposefully and voluntarily placed their yeast products, including TransFerm Yield+, into the stream of commerce with the expectation that they will be purchased and used by customers located in the State of Wisconsin and the Western District of Wisconsin. On information and belief, Defendants' customers in the Western District of Wisconsin, including at least Ace Ethanol located at 815 West Maple Street, Stanley, Wisconsin, 54768 and Didion Milling located at 520 Hartwig Boulevard, P.O. Box 400, Johnson Creek, Wisconsin, 53038, have purchased and used and continue to purchase and use Defendants' yeast products, including TransFerm Yield+.

15. On information and belief, Defendants have purposefully and voluntarily placed their yeast products, including TransFerm Yield+, into the stream of commerce with full knowledge and an expectation that ethanol manufactured using those yeast products will be incorporated into fuels shipped into and purchased and used by consumers located in the State of Wisconsin and the Western District of Wisconsin. On information and belief, consumers in the Western District of Wisconsin have purchased and used and continue to purchase and use fuels containing ethanol manufactured using Defendants' yeast products, including TransFerm Yield+.

16. Venue is proper in this district under 28 U.S.C. § 1391 because, on information and belief, a substantial part of the events giving rise to the patent infringement claims asserted herein occurred in this district.

BACKGROUND

17. U.S. Patent No. 8,795,998 (the "'998 patent," attached hereto at Exhibit 1) duly issued on August 5, 2014, and is entitled *Fermentative Glycerol-Free Ethanol Production*.

18. Ethanol can be produced from glucose through a biological fermentation process using yeast.

19. In non-mutant yeast cells, glycerol is typically formed as a by-product during the fermentation process.

20. When fermentation is performed on an industrial scale, glycerol production can be substantial, thereby lowering the yield of ethanol and ultimately raising the cost of manufacturing.

21. The inventors of the ’998 patent engineered transgenic yeast cells that reduce or eliminate the production of glycerol during fermentation.

22. The transgenic yeast cells claimed in the ’998 patent exhibit NAD^+-dependent acetylating acetaldehyde dehydrogenase activity (EC 1.2.1.10), acetyl-Coenzyme A synthetase activity (EC 6.2.1.1), and NAD^+-dependent alcohol dehydrogenase activity (EC 1.1.1.1).

23. The ’998 patent discloses that the NAD+-dependent acetylating acetaldehyde dehydrogenase can be a bifunctional protein that catalyzes the reversible conversion of acetyl-Coenzyme A to acetaldehyde as well as the subsequent reversible conversion of acetaldehyde to ethanol. The ’998 patent discloses the AdhE protein as one such bifunctional protein.

24. The claimed transgenic yeast cells also comprise a genomic mutation in at least one of the GPD1, GPD2, GPP1, and GPP2 genes, which reduces or eliminates the pathway responsible for glycerol production.

25. The ’998 patent is enforceable and presumed valid.

26. Plaintiffs jointly own all right, title, and interest in and to the ’998 patent, including the right to collect damages for past, present, and future infringement. Plaintiff DSM

IP Assets, B.V. has granted an exclusive license to its rights under the '998 patent to Plaintiff DSM Bio-Based Products & Services B.V.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 8,795,998

27. DSM re-alleges and incorporates by reference the allegations of Paragraphs 1 through 26 above as though fully set forth herein.

28. On information and belief, Defendants have been, are continuing to, and will continue to infringe claims 1, 4-6, and 11 of the '998 patent by, among other things, making, using, selling, offering for sale, and/or importing into the United States transgenic yeast cells, including their TransFerm Yield+ product.

29. On information and belief, Defendants have sold more than 7,500 commercial fermentation batches of TransFerm Yield+ to its customers, who thereby have produced over 800 millions gallons of ethanol using TransFerm Yield+.

30. According to Defendants' product literature, fuel ethanol production facilities using its TransFerm Yield+ product may experience a yield gain of up to 4% in ethanol and a reduction in glycerol production of approximately 30%. (Exhibit 2 attached hereto).

31. On information and belief, TransFerm Yield+ is a strain of *Saccharomyces cerevisiae* yeast engineered to reduce the production of glycerol during ethanol fermentation via a genomic mutation in at least one of the GPD1, GPD2, GPP1, and GPP2 genes.

32. On information and belief, the TransFerm Yield+ yeast cells comprise one or more nucleic acid sequences encoding for the protein AdhE.

33. The protein AdhE is a bifunctional enzyme having both NAD^+-dependent acetylating acetaldehyde dehydrogenase activity (EC 1.2.1.10) and NAD^+-dependent alcohol dehydrogenase activity (EC 1.1.1.1).

34. On information and belief, the TransFerm Yield+ yeast cells comprise one or more nucleic acid sequences encoding for acetyl-Coenzyme A synthetase activity (EC 6.2.1.1).

35. Because the TransFerm Yield+ yeast cells meet the requirements of the transgenic yeast cells of at least claim 1 of the ’998 patent and the ’998 patent is valid and enforceable, Defendants, on information and belief, had discussions with Delft University of Technology, the predecessor owner of the ’998 patent, regarding licensing the ’998 patent.

36. On information and belief, Defendants have had actual notice of the ’998 patent since before July 2015.

37. Defendants have refused to take a license to the ’998 patent because, *inter alia*, according to Lallemand, the TransFerm Yield+ yeast cells do not encode for separate proteins having NAD^+-dependent acetylating acetaldehyde dehydrogenase (EC 1.2.1.10) and NAD^+-dependent alcohol dehydrogenase (EC 1.1.1.1) activities and therefore do not infringe the ’998 patent.

38. Defendants’ interpretation of the claims of the ’998 patent, which limits the claimed yeast cells to those that encode one protein with NAD^+-dependent acetylating acetaldehyde dehydrogenase activity (EC 1.2.1.10) and a separate protein with NAD^+-dependent alcohol dehydrogenase activity (EC 1.1.1.1), is not objectively reasonable given that the ’998 patent discloses in column 10, lines 21-38 that a single, bifunctional enzyme, such as Defendants’ AdhE enzyme, can be used in accordance with the claims.

39. Defendants have also refused to take a license to the ’998 patent because, *inter alia*, according to Lallemand, the TransFerm Yield+ yeast cells do not use exogenous acetate during fermentation.

40. On information and belief, the fermentation processes carried out using the TransFerm Yield+ yeast cells include amounts of acetate that are converted into ethanol.

41. Moreover, Defendants' interpretation of the claims of the '998 patent, which attempts to limit the claimed yeast cells by the process in which they are used, is not objectively reasonable given that the '998 patent claims yeast cells comprising a nucleic acid sequence that encodes for, among others, acetyl-CoA synthetase activity.

42. Defendants have also refused to take a license to the '998 patent because, *inter alia*, according to Lallemand, the TransFerm Yield+ yeast cells produce acetyl-CoA from pyruvate using pflA/B enzymes.

43. Defendants' interpretation of the claims of the '998 patent is not objectively reasonable because the plain language of the claims do not exclude yeast cells that produce acetyl-CoA from pyruvate using pflA/B enzymes.

44. On information and belief, Defendants have no objectively reasonable basis for believing that its TransFerm Yield+ product does not meet each of the elements of at least claims 1, 4-6, and 11 of the '998 patent.

45. At the time Defendants began making and selling their TransFerm Yield+ product, Defendants had no objectively reasonable basis for believing that its TransFerm Yield+ product does not meet each of the elements of at least claims 1, 4-6, and 11 of the '998 patent.

46. Despite an objectively high likelihood that its conduct constitutes infringement of the '998 patent, Defendants continued to manufacture, sell, offer for sale, and use their TransFerm Yield+ product without a license to the '998 patent.

47. Defendants therefore do not have an objectively reasonable defense of noninfringement of the '998 patent.

48. Defendants' product literature states that its TransFerm Yield+ product is covered by U.S. Patent No. 8,956,851 (the "'851 patent," attached hereto as Exhibit 3).

49. In describing its invention, the '851 patent states that "the invention provides for a recombinant microorganism comprising a deletion of one or more native enzymes that function to produce glycerol and/or regulate glycerol synthesis and one or more native and/or heterologous enzymes that function in one or more engineered metabolic pathways to convert a carbohydrate source, such as lignocelluloses, to a product, such as ethanol, wherein the one or more native and/or heterologous enzymes is activated, upregulated, or downregulated." (Exhibit 3 at Abstract).

50. The '851 patent further states that "[t]he invention also provides for a recombinant microorganism comprising one or more heterologous enzymes that function to regulate glycerol synthesis and one or more native and/or heterologous enzymes that function in one or more engineered metabolic pathways to convert a carbohydrate source to ethanol, wherein said one or more native and/or heterologous enzymes is activate, upregulated, or downregulated." (Exhibit 3 at Abstract).

51. Given that the '851 patent describes the deletion of enzymes that regulate glycerol synthesis in combination with an engineered pathway to convert a carbohydrate source to ethanol as an "invention," Defendants do not have an objectively reasonable basis for believing that the '998 patent, which predates the '851 patent, is invalid.

52. Defendants' infringement of the '998 patent has therefore been, is, and will continue to be willful.

PRAYER FOR RELIEF

WHEREFORE, DSM prays for relief as follows:

1. A judgment declaring that Defendants have infringed and are infringing one or more claims of the ’998 patent;

2. A judgment awarding DSM compensatory damages as a result of Defendants' infringement of the ’998 patent, together with interest and costs, consistent with lost profits and in no event less than a reasonable royalty;

3. A judgment awarding DSM treble damages and pre-judgment interest under 35 U.S.C. § 284 as a result of Defendants' willful and deliberate infringement of the ’998 patent;

4. A judgment declaring that this case is exceptional and awarding DSM its expenses, costs, and attorneys’ fees in accordance with 35 U.S.C. §§ 284 and 285 and Rule 54(d) of the Federal Rules of Civil Procedure;

5. A grant of preliminary and permanent injunctions enjoining Defendants from further acts of infringement of the ’998 patent; and

6. Such other and further relief as the Court deems just and proper.

JURY TRIAL DEMANDED

DSM hereby demands a trial by jury.

Dated: July 13, 2016

By: *s/ Jennifer L. Gregor*

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