

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

SYNGENTA SEEDS, INC., )  
 )  
 Plaintiff, )  
 )  
 v. ) Civ. No. 02-1331-SLR  
 )  
 MONSANTO COMPANY, DEKALB )  
 GENETICS CORP., PIONEER HI- )  
 BRED INTERNATIONAL, INC., )  
 DOW AGROSCIENCES, LLC, and )  
 MYCOGEN PLANT SCIENCE, INC. )  
 and AGRIGENETICS, INC., )  
 collectively d.b.a. MYCOGEN )  
 SEEDS, )  
 )  
 Defendants. )

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MEMORANDUM OPINION

Dated: December 8, 2005  
Wilmington, Delaware

  
ROBINSON, Chief Judge

## I. INTRODUCTION

On July 25, 2002, plaintiff Syngenta Seeds, Inc. ("plaintiff") filed this action alleging Monsanto Company, DeKalb Genetics Corp, Dow Agrosiences, LLC and Mycogen Plant Science Inc. and Agrigenetics, Inc. (collectively called "defendants") sold certain *Bacillus thuringiensis* ("Bt") corn products infringing U.S. Patent Nos. 6,403,865 (the "'865 patent"), 6,075,185 (the "'185 patent"), and 6,320,100 (the "'100 patent"). This case was tried to a jury from November 29, 2004 through December 10, 2004. On December 9, 2004, the court granted defendants' motion as a matter of law that the asserted claims from the '100 patent and '185 patent were not infringed. The '865 patent claims at issue for the jury were: claim 11, depending from claim 1; claim 19, depending from claims 11 and 1 (claim "19/11"); claim 19, depending from claims 16 and 1 (claim "19/16"); claim 20, depending from claims 11 and 1 (claim "20/11"); claim 20, depending from claims 16 and 1 (claim "20/16"); and claim 21, depending from claim 1. On December 14, 2004, the jury returned a verdict, finding that: (1) the asserted claims were infringed by defendants' MON810 YieldGard Bt corn, Herculex 1 Bt corn, and TC6275 non-commercial Bt corn; (2) claims 19/16, 20/16 and 21/1 were invalid as anticipated by the Lundquist patent, the prior invention of Monsanto scientists, and the prior invention of Bt11 by Sandoz; (3) claims 11, 19/11,

19/16, 20/11 and 21 were invalid as obvious in view of the prior art; (4) asserted claims 11, 19/11 and 20/11 were invalid for failure to comply with the written description requirement of 35 U.S.C. § 112, ¶ 1; (5) claims 19/16, 20/16 and 21 were not invalid for failure to comply with the written description requirement of 35 U.S.C. § 112, ¶ 1; and (6) claims 19/16, 20/16 and 21 were not invalid as indefinite. (D.I. 487 at 1-8)

Defendants filed a consolidated renewed motion for judgment as a matter of law for: non-infringement of the asserted claims of the '865 patent;<sup>1</sup> the invalidity of claims 19/16, 20/16, and 21 of the '865 patent for failure to satisfy the written description requirement of 35 U.S.C. § 112, ¶ 1; and the invalidity of claim 21 of the '865 patent as indefinite for failure to comply with 35 U.S.C. § 112, ¶ 2. (D.I. 517)

## II. BACKGROUND

The '865 patent relates generally to fertile transgenic corn plants that express a gene encoding a Bt insecticidal protein so as to cause mortality to European corn borers ("ECB"). (D.I. 293 at 2) Bt is a soil bacteria that produces proteins toxic to certain insect pests, but is not harmful to humans. (D.I. 303 at 1) For many years, farmers sprayed formulations of Bt bacteria onto crops as pesticides but, with the advances in the field of

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<sup>1</sup>Defendants Monsanto Co. and Dekalb Genetics Corp. do not join the non-infringement portion of the renewed motion for judgment as a matter of law.

plant biotechnology, expression of genes encoding the production of the Bt insecticidal protein in plants began.<sup>2</sup> (Id.)

The '865 patent is entitled "Method of Producing Transgenic Maize Using Direct Transformation of Commercially Important Genotypes." The claims at issue are generally directed to fertile transgenic corn plants containing a modified Bt gene that expresses Bt protein in an amount sufficient to cause mortality to ECB.

### III. STANDARD OF REVIEW

#### A. Motion for Judgment as a Matter of Law

To prevail on a renewed motion for judgment as a matter of law following a jury trial, the moving party "'must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied [by] the jury's verdict cannot in law be supported by those findings.'" Pannu v. Iolab Corp., 155 F.3d 1344, 1348 (Fed. Cir. 1998) (quoting Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984)). "'Substantial' evidence is such relevant evidence from the record taken as a whole as might be accepted by a reasonable mind as adequate to support the finding under review." Perkin-Elmer

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<sup>2</sup>The Federal Circuit address the technology involved in making codon modifications to a Bt gene to increase its expression in plants in great length in Mycogen Plant Science, Inc. v. Monsanto Co., 243 F.3d 1316 (Fed. Cir. 2001).

Corp., 732 F.2d at 893. In assessing the sufficiency of the evidence, the court must give the non-moving party, "as [the] verdict winner, the benefit of all logical inferences that could be drawn from the evidence presented, resolve all conflicts in the evidence in his favor and, in general, view the record in the light most favorable to him." Williamson v. Consol. Rail Corp., 926 F.2d 1344, 1348 (3d Cir. 1991); Perkin-Elmer Corp., 732 F.2d at 893. When considering the sufficiency of evidence, the court must also take into account the required quantum of proof; for a patent invalidity verdict, the quantum of proof is clear and convincing evidence, because a patent is presumed valid. Juicy Whip, Inc. v. Orange Bang, Inc., 292 F.3d 728, 736 (Fed. Cir. 2002). In addition, the court may not determine the credibility of the witnesses nor "substitute its choice for that of the jury between conflicting elements of the evidence." Perkin-Elmer Corp., 732 F.2d at 893. In sum, the court must determine whether the evidence reasonably supports the jury's verdict. See Dawn Equip. Co. v. Ky. Farms Inc., 140 F.3d 1009, 1014 (Fed. Cir. 1998).

#### IV. DISCUSSION

##### A. JMOL on Infringement

In the motion at bar, defendants challenge the jury verdict finding that defendants infringed the asserted claims of the '865 patent.

"A patent infringement analysis involves two steps: claim construction and application of the properly construed claim to the accused product." KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1355 (Fed. Cir. 2000). Claim construction is a question of law while infringement is a question of fact. Id. The patentee must establish infringement by a preponderance of the evidence. See, e.g., Braun Inc. v. Dynamics Corp., 975 F.2d 815, 819 (Fed. Cir. 1992). "To establish literal infringement, every limitation set forth in a claim must be found in an accused product, exactly." Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1575 (Fed. Cir. 1995). In considering the relevant motion, the court evaluates whether substantial evidence supports the jury's determination that at least one of the limitations in each of the asserted claims is not found in the accused products, "exactly."

Claim 1 of the '865 patent reads:

1. A fertile transgenic maize plant comprising:
  - a foreign DNA sequence encoding a *Bacillus thuringiensis* insecticidal protein toxic to European corn borer stably incorporated into the plant's genome, the foreign DNA comprising a nucleic acid coding sequence modified from the nucleic acid coding sequence of the native *Bacillus thuringiensis* gene encoding the insecticidal protein to increase expression of the insecticidal protein in the transgenic plant;
  - wherein the transgenic plant expresses the insecticidal protein in plant leaf tissue at greater than about 1-5 ng insecticidal protein per mg soluble leaf

protein, and the leaf tissue causes mortality to European corn borer.

In the jury instructions, the court charged the jury that claim 1 means "[a] corn plant in which a foreign nucleic acid coding sequence that encodes a *Bacillus thuringiensis* protein is incorporated into the corn plant's genome . . . ." At several points during the trial, the defendants requested, as they do in this JMOL, that the claim construction be limited to a Bt protein made in nature. The court again refuses to so limit the claim. Substantial evidence exists on which the jury could base a decision that defendants' products incorporate a Bt protein as required by claim 1, as properly construed.

Defendants argue that, because the jury verdict finding literal infringement cannot be sustained, the jury verdict of contributory infringement must also be overturned. As stated above, the court concludes that the jury verdict for literal infringement is supported by substantial evidence and, because defendants cite no other argument in support of JMOL, the jury verdict of contributory infringement is upheld.

#### **B. JMOL on Invalidity**

Defendants challenge the jury verdict finding claims 19/16, 20/16 and 21 are not invalid for lack of written description and that claim 21 is not invalid as indefinite.

An issued patent is presumed valid. See 35 U.S.C. § 282. To overcome this presumption, the party challenging validity



bears the burden of proving by clear and convincing evidence that the invention fails to meet the requirements of patentability. See Hewlett-Packard Co. v. Bausch & Lomb, Inc., 909 F.2d 1464, 1467 (Fed. Cir. 1990). Clear and convincing evidence is evidence that "could place in the ultimate fact finder an abiding conviction that the truth of [the] factual contentions are 'highly probable.'" Colorado v. New Mexico, 467 U.S. 310, 316 (1984). In seeking to overturn a jury's verdict of invalidity, the movant needs to show "an absence of substantial evidence on the underlying facts supporting the jury's verdict," taking the clear and convincing quantum of proof into account. Juicy Whip, Inc., 292 F.3d at 736, 737.

#### **1. Written Description Requirement**

The statutory basis for the written description requirement is found in 35 U.S.C. § 112, ¶ 1, which provides in relevant part:

The specification shall contain a written description of the invention and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.

The written description requirement is separate and distinct from the enablement requirement. See Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). The written description requirement is "broader than to merely explain how to 'make and use'; the applicant must also convey with reasonable clarity to

those skilled in the art that, as of the filing date sought, he or she was in possession of the invention." Id. (emphasis in original). In other words, a patent must "'clearly allow persons of ordinary skill in the art to recognize that [the patentee] invented what is claimed.'" In re Alton, 76 F.3d 1168, 1172 (Fed. Cir. 1996) (quoting In re Gosteli, 872 F.2d 1008, 1012 (Fed. Cir. 1989)). A challenger must provide clear and convincing evidence that persons skilled in the art would not recognize in the disclosure a description of the claimed invention. See id. 76 F.3d at 1175. Defendants fail to show a lack of substantial evidence supporting the jury's conclusion that claims 19/16, 20/16 and 21 are not invalid for lack of written description.

Defendants assert that claims 19/16, 20/16 and 21, all depending from claim 1 of the '865 patent, are invalid because the claims recite "a fertile transgenic maize plant" without reference to the target tissue from which the plant is obtained or the genotype transformed, and the specification describes only fertile transgenic maize plant obtained from immature embryos or Type I callus and transformation of elite corn lines. (D.I. 578 at 18-19)

The written description inquiry "focuses on a comparison between the specification and the invention referenced by the terms of the claim--not comparison between how the product was

made as disclosed in the patent and future developments of this process that might alter or even improve how the same product is made." Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1331 (Fed. Cir. 2003). The court construed claim 1 (on which the asserted claims depend) to read:

A corn plant in which a foreign nucleic acid coding sequence that encodes a *Bacillus thuringiensis* protein is incorporated into the corn plant's genome such that: (1) the foreign nucleic acid coding sequence is capable of being passed along to the corn plant's progeny; and (2) the corn plant expresses greater than about 1-5 ng of the toxic protein in its leaf tissue such that the leaf tissue kills European corn borer.

The court, in its claim construction, rejected incorporating limitations of target tissue or transformation method. (D.I. 443) As admitted by Dr. Messing, claim 1 says nothing about bombardment or the nature of the target tissue bombarded. (D.I. 495 at 1603-4) The specification indicates that the claimed invention is not limited to elite corn lines. (See '865 patent, col. 2, ll. 56-57; col. 14, l. 34 - col. 15, l. 56)

Furthermore, the jury heard testimony from three inventors who stated the '865 patent was not limited to generating Bt corn by shooting Type I callus or immature zygotic embryos and is not limited to direct transformation of elite maize genotypes.

Evidence in the patent specification, testimony of witnesses and the presumption of validity of an issued patent, provide substantial evidence on which a jury verdict of validity is properly based. Abbott Laboratories v. Syntron Bioresearch,

Inc., 334 F.3d 1343, 1356 (Fed. Cir. 2003).

## 2. Indefiniteness

A patent specification shall conclude with one or more claims that "particularly [point] out and distinctly [claim] subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P 2 (2003). The Federal Circuit has explained that a claim satisfies section 112 paragraph 2 if one skilled in the art would understand the bounds of the claim when read in light of the specification. See Miles Labs., Inc. v. Shandon, Inc., 997 F.2d 870, 875 (Fed. Cir. 1993). In determining whether this standard is met, the Federal Circuit has advised that a claim is not indefinite merely because it poses a difficult issue of claim construction. Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1376 (Fed. Cir. 2001). Rather, the Federal Circuit has held a claim sufficiently clear to avoid invalidity on indefiniteness grounds "[i]f the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree." Id.

Defendants assert that claim 21 is invalid under 35 U.S.C. § 112, ¶ 2 as vague. Claim 21<sup>3</sup> of the '865 patent was construed by

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<sup>3</sup>Claim 21 provides  
A method of controlling infestation of maize plants by European corn borer, the method comprising:  
providing a transgenic maize plant according to claim 1; and

the court to mean: "A method of keeping the field population of European corn borer at levels low enough to make corn plant growth economical where a corn plant of claim 1 comes into contact with European corn borers." (D.I. 443) Defendants argue substantial evidence does not support the jury's conclusion that claim 21 "would allow one of ordinary skill in the art to know in advance whether particular conduct would infringe the claim or not." (D.I. 578 at 24) However, "[t]he test for indefiniteness does not depend on a potential infringer's ability to ascertain the nature of its own accused product to determine patent infringement, but instead it depends on whether the claim delineates to a skilled artisan the bounds of the invention." SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1340 (Fed. Cir. 2005). The jury had substantial evidence, consisting of the testimony of Dr. Shelton and Dr. Hutchison,<sup>4</sup> to conclude that the term "economical" is definable and delineates to a

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contacting said European corn borer with the plant.

<sup>4</sup>Dr. Shelton, defendant Mycogen's expert entomologist, demonstrated the ability of one skilled in the art to determine whether the control provided was "economical." Dr. Shelton testified, "where I am in Upstate New York, for example . . . many of our growers do not use Bt corn simply because the pest pressure is not high enough and it's not worth their while to buy the - spend the \$35 for the technology fee." (D.I. 493 at 1213) This indicates that farmers can, in fact, determine whether using the product is economical for them. Furthermore, Dr. Hutchison, plaintiff's expert entomologist, testified as to the ability to determine the economic control and infringement. (D.I. 491 at 605-08; 612-13)

skilled artisan the bounds of the invention. The jury's verdict that claim 21 of the '865 patent is not invalid as indefinite is supported by substantial evidence.

**V. CONCLUSION**

For the reasons discussed above, defendants' motions for JMOL and new trial are denied. An order consistent with this memorandum opinion shall issue.