United States District Court,
N.D. Texas, Abilene Division.

MONSANTO COMPANY,
Plaintiff.
v.
Mike ROMAN, a/k/a J.M. Roman,
Defendant.

No. Civ.A. 103CV068-C

May 17, 2004.

Matthew E. Ritchie, Asbury & Asbury, Abilene, TX, Joel E. Cape, Miles P. Clements, Wayne K. McNeil, Frilot Partridge Kohnke & Clements, New Orleans, LA, for Plaintiff.

Mike Roman, Big Spring, TX, pro se.H. Grady Terrill, Craig Terrill Hale & Grantham, Janna K. Fulfer, Craig Terrill & Hale, Lubbock, TX, Joel E. Cape, Frilot Partridge Kohnke & Clements, New Orleans, LA, for Defendant.

MEMORANDUM OPINION AND ORDER

CUMMINGS**, J.**

BEFORE THE COURT FOR CONSIDERATION is Defendant MONSANTO COMPANY's ("Monsanto") Motion for Partial Summary Judgment and Brief in Support with Appendix, filed with this Court on February 17, 2004. The Court also has before it for consideration Defendant MIKE ROMAN's ("Roman") Response and Brief in Support with Appendix, filed on April 12, 2004. Although Monsanto filed a Reply and Brief in Support on April 23, 2003, without leave of the Court as required by this Court, the Court nevertheless finds that the Reply raises important issues and for that reason the Court herewith grants leave to file the Reply and has taken the Reply into consideration in its opinion. After careful consideration of the papers, pleadings, and evidence filed in this case, together with the arguments and authorities, the Court is of the opinion that Plaintiff's Motion should be GRANTED for the following reasons:

I.

BACKGROUND

In 1996 and 1997, Monsanto and its seed partner, Delta and Pine Land Company, first commercially introduced patented Bollgard and Roundup Ready crop biotechnologies they had developed to help increase agricultural productivity in plants grown from seed utilizing that technology. FN1 In essence, these biotechnologies are genetic events that result from the insertion of a man-made, or "chimeric," gene into seed that causes the resultant plant to "express" a protein or form of a protein that it would not otherwise produce. FN2 This non-naturally occurring protein produces agriculturally desirable traits; i.e., it enables plants grown from the treated seed to be resistant to certain pests and herbicides.

FN1. "Bollgard" and "Roundup Ready" are registered trademarks for products of the Monsanto Company bearing the patented biotechnology at issue in this case.

FN2. In this sentence, the word "express" is a genetics term of art meaning the cellular production of the protein encoded by a particular gene. The process includes the reading or "transcription" of DNA that produces a resultant messenger RNA product which is then translated into an active protein. *http://www.genomicglossaries.com/content/ex bio.asp* (site visited May 6, 2004).

The particular trait present in Roundup Ready seed is produced by inserting into the seed a chimeric gene that expresses a protein in resultant plants that makes them resistant to the herbicidal effects of glyphosate-based herbicides such as Roundup.FN3 Since Roundup is a non-selective herbicide designed to kill a broad range of plants, crops grown using the Roundup Ready biotechnology are capable of surviving the application of Roundup to the field while targeted weeds do not, thereby greatly facilitating weed control. The Roundup Ready trait is protected by patent number 5,352,605 ("the '605 patent").

FN3. "Roundup" is a registered trademark for Monsanto's glyphosate-based herbicide.

The trait present in Bollgard seed is also produced by means of an inserted chimeric gene. This gene expresses a protein in resultant plants that kills the larvae of certain target insects such as bollworms that feed on those plants, thereby reducing the use of chemical insecticides on the crop. The Bollgard trait is protected by patent number 5,196,525 ("the '525 patent"). Certain seed product, labeled Bollgard with Roundup Ready, may be "stacked" to combine both biotechnologies. Monsanto, and its seed partners, market these technologies to growers, who must pay Monsanto a technology fee based on the technology or combination of technologies present in their purchased seed product. Payment of the appropriate fee grants growers a restricted-use license that authorizes them to produce a single commercial crop but prohibits them from saving or planting seed harvested from that crop.

On December 2, 2002, Monsanto agents inspected and took 63 cotton samples from Roman's cotton acreage and 31 samples from unplanted brown-bagged cottonseed in his possession.FN4 These samples were subjected to analysis by Biolab Solutions, which tested for the presence of a particular protein, CP4 EPSPS, present in product containing the Roundup Ready genetic trait, and a particular endotoxin, Bt Cry 1Ac, present in product containing the Bollgard trait. All 63 field samples and the 16 bag samples marked "L-42-01" tested positive for the presence of the Bollgard and Roundup Ready traits, while the remaining 15 bag samples tested positive for one or both of the traits.

FN4. Cottonseed saved from a ginned crop is customarily placed into brown seed bags once it has been processed and delinted and is ready to be delivered back to the grower. Sixteen samples were taken from bags in Roman's shop marked "L-42-01," and the remaining 15 samples were taken from bags marked "L-16," "L-52," "L-122-97," and "L-24-98."

On April 25, 2003, Monsanto filed suit against Roman seeking damages for infringement of its patented product and a permanent injunction enjoining Roman from future unauthorized use of its patented technology. On August 5, 2003, Monsanto filed its First Amended Complaint in which it alleges that Roman planted his cotton crop during the 2002 growing season with seed utilizing the patented Bollgard and/or Roundup Ready biotechnologies without a license from Monsanto to use that particular crop technology during that season or any other crop season. Monsanto now moves for partial summary judgment on the issue of liability for infringement of the '605 and '525 patents and its entitlement to injunctive relief, leaving the issue of damages for trial. Monsanto contends that its evidence conclusively establishes infringement.

In his Response, Roman argues that summary judgment is not proper because Monsanto has produced no

evidence that he knowingly infringed Monsanto's patents and further that a question of fact exists as to whether the seed he planted had been abandoned by Monsanto and whether Monsanto marked its patented product with adequate notice as required by law, thereby preventing it from raising the patent infringement claim. Monsanto contends that neither knowledge nor intent is an element in a claim for patent infringement. Monsanto further argues that Roman's claim of abandonment is an affirmative defense which he did not raise in his first responsive pleading and has therefore waived, and that in any event Roman has produced no evidence that Monsanto abandoned any of its patented product. Additionally, Monsanto argues that Roman has himself produced evidence that contradicts his claims to have planted any abandoned cottonseed. Finally, Monsanto argues that patent marking for the purpose of notice is relevant only to the issue of damages and does not preclude summary judgment on the issue of infringement.

II.

STANDARD

Summary judgment is appropriate only if "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any," when viewed in the light most favorable to the non-moving party, "show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986) (internal quotes omitted). A dispute about a material fact is "genuine" if the evidence is such that a reasonable jury could return a verdict for the non-moving party. Id. at 248. In making its determination, the court must draw all justifiable inferences in favor of the non-moving party. Id. at 255. Once the moving party has initially shown "that there is an absence of evidence to support the non-moving party's case," Celotex Corp. v. Catrett, 477 U.S. 317, 325, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986), the non-movant must come forward, after adequate time for discovery, with significant probative evidence showing a triable issue of fact. FED.R.CIV.P. 56(e); State Farm Life Ins. Co. v. Gutterman, 896 F.2d 116, 118 (5th Cir.1990). Conclusory allegations and denials, speculation, improbable inferences, unsubstantiated assertions, and legalistic argumentation are not adequate substitutes for specific facts showing that there is a genuine issue for trial. Douglass v. United Servs. Auto. Ass'n, 79 F.3d 1415, 1429 (5th Cir.1996) (en banc); SEC v. Recile, 10 F.3d 1093, 1097 (5th Cir.1993).

To defeat a properly supported motion for summary judgment, the non-movant must present more than a mere scintilla of evidence. *See* Anderson, 477 U.S. at 251. Rather, the non-movant must present sufficient evidence upon which a jury could reasonably find in the non-movant's favor. *Id*. The pleadings are not summary judgment evidence. Little v. Liquid Air Corp., 37 F.3d 1069, 1075 (5th Cir.1994). The nonmoving party must "go beyond the pleadings and by [his] own affidavits, or by the depositions, answers to interrogatories, and admissions on file, designate specific facts showing that there is a genuine issue for trial." Giles v. General Elec. Co., 245 F.3d 474, 493 (5th Cir.2001) (quoting Celotex, 477 U.S. at 324). Absent a showing that there is a genuine issue for trial, a properly supported motion for summary judgment should be granted. *See* Eversley v. MBank Dallas, 843 F.2d 172, 173-74 (5th Cir.1988); Resolution Trust Corp. v. Starkey, 41 F.3d 1018, 1022-23 (5th Cir.1995).

If no factual showing is made in opposition to a motion for summary judgment, the district court is not required to search the record *sua sponte* for some genuine issue of material fact. It may rely entirely on the evidence designated by the moving party showing no such triable issue. Guarino v. Brookfield Township Trustees, 980 F.2d 399, 403 (6th Cir.1992). A party moving for summary judgment may support that motion with appropriate evidence in an attempt to negate an essential element of the non-movant's claim or defense, but summary judgment is also appropriate when the movant shows that there is no evidence to support an essential element of the non-movant's claim or defense. *See* Celotex, 477 U .S. at 322 (1986). In order to withstand a no-evidence motion for summary judgment, the non-movant must present evidence sufficient to establish the existence of each element of his claim as to which he will have the burden of proof at trial. *Id*. The purpose of summary judgment, as the Supreme Court has instructed, is to "enable a party who believes

there is no genuine dispute as to a specific fact essential to the other side's case to demand at least one sworn averment of that fact before the lengthy process of litigation continues." Lujan v. National Wildlife Federation, 497 U.S. 871, 888, 110 S.Ct. 3177, 3189, 111 L.Ed.2d 695 (1990); Liquid Air Corp., 37 F.3d at 1075. A court is to resolve all factual controversies in favor of the non-movant, who is the Plaintiff here, "but only when there is an actual controversy, that is, when both parties have submitted evidence of contradictory facts. We do not, however, in the absence of any proof, assume that the nonmoving party could or would prove the necessary facts." Liquid Air, 37 F.3d at 1075. Summary judgment is appropriate when a party fails to establish the existence of an essential element of its case on which that party will bear the burden of proof at trial. Celotex, 477 U.S. at 322 (1986).

III.

DISCUSSION

Monsanto moves for partial summary judgment as a matter of law on the issue of liability for infringement of the '605 and '525 patents and for a permanent injunction against future infringement, leaving the issue of damages to be determined at trial. Patent infringement occurs where a party "without authority makes, uses, offers to sell, or sells any patented invention, within the United States ... during the term of the patent." 35 U.S.C. s. 271(a). Determining whether patent infringement has occurred is a two-step procedure. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The first step, commonly referred to as claim construction or interpretation, involves "determining the meaning and scope of the patent claims asserted to be infringed." *Id*. This step is purely a matter of law that is determined by the court upon consideration of the language of the claims of the patent itself, the specification, and the prosecution history. Id. at 979. The specification is a written description of the invention that explains how the invention is to be made and used and which may define the terms used in any claims. *See id*.FN5 The language of the claims, however, is what defines an invention, *see* Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1565 (Fed.Cir.1991), and the claim language must define the invention in such a way that it describes the novelty of the invention while adequately disclosing its definable limitations. *See* Harrington Mfg. Co., Inc. v. White, 475 F.2d 788, 800 (5th Cir.1973). The claims language delimits the right of the patent holder to exclude. *See* Markman, 52 F.3d at 980. Claim terms are to be given "their ordinary and accustomed meaning as understood by one of ordinary skill in the art ." Bell Atlantic Network Servs. v. Covad Communications Group, 262 F.3d 1258, 1267 (Fed.Cir.2001). If the meaning of a claim or limitation is not apparent from the intrinsic evidence, a court may look to extrinsic evidence, such as expert testimony, to assist it in determining the proper meaning of asserted claims and limitations. *See* id. at 1269.

FN5. Though not in evidence before this Court, the prosecution history of the patent in other courts may also be used to assist the court in ascertaining the meaning of terms in the patent claims. *See* Markman, 52 F.3d at 980.

The second step, referred to as infringement analysis, is a question of fact. Stryker Corp. v. Davol Inc., 234 F.3d 1252, 1258 (Fed.Cir.2000). Here, the court must compare the properly construed claims alleged to be infringed against the characteristics of the accused device, product, or process. *See* Markman, 52 F.3d at 976; Insituform Tech., Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1105 (Fed.Cir.1996), *cert. denied,* 520 U.S. 1198, 117 S.Ct. 1555, 137 L.Ed.2d 703 (1997). Literal infringement occurs where the limitations in the patent claims alleged to have been infringed are present in the accused device, process, or product. *See* Hormone Research Foundation, Inc. v. Genentech, Inc., 904 F.2d 1558, 1562 (Fed.Cir.1990). Infringement of even a single claim constitutes patent infringement. Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1055 (Fed.Cir.1989).

A. Claim Construction of the '605 Patent

Monsanto alleges that Roman's unauthorized use in 2002 of saved cottonseed containing its patented Roundup Ready biotechnology constituted an infringement of its '605 patent. This patent was issued to Monsanto in 1994 for its invention of a chimeric gene that transforms plant cells using a viral-promoting agent. Monsanto describes the patent infringement by listing and describing the meaning and scope of the claims of the relevant patent that are alleged to have been infringed.FN6 Particularly, Monsanto refers to Claims 1, 2, 4, and 5 of its '605 patent, which are described as follows:

FN6. For purposes of claim construction, the Court depends on its own reading of the relevant claims as set forth in the patent documents submitted to the Court. (Pl's.App. to Mot. Summ. J., Ex. 1 and Ex. 2.) Because of the highly technical nature of the intrinsic evidence, the Court has also relied on the affidavit testimony of expert witness Dr. L. Curtis Hannah provided by Monsanto (Ex. 4, Hannah Aff.) in order to assist it in determining the proper meaning of asserted claims and limitations. The Court finds that Hannah qualifies as an expert in plant molecular biology and that his testimony is helpful in assisting the Court to understand the claims of the patents at issue. Roman does not make any argument to the Court regarding the proper construction of the claims or provide any extrinsic evidence relating to the claims.

Claim 1. A chimeric gene which is expressed in plant cells comprising a promoter from a cauliflower mosaic virus, said promoter selected from the group consisting of a CaMV (35S) promoter isolated from CaMV protein-encoding DNA sequences and a CaMV (19S) promoter isolated from CaMV protein-encoding DNA sequences, and a structural sequence which is heterologous with respect to the promoter.
Claim 2. A chimeric gene of Claim 1 in which the promoter is the CaMV (35S) promoter.

Claim 4. A plant cell which comprises a chimeric gene that contains a promoter from a cauliflower mosaic virus, said promoter selected from the group consisting of a CaMV (35S) promoter and a CaMV (19S) promoter, wherein said promoter is isolated from a CaMV protein-encoding DNA sequence, and a structural sequence which is heterologous with respect to the promoter.

Claim 5. A plant cell of Claim 4 in which the promoter is the CaMV (35S) promoter.

(Pl's.App. to Mot. Summ. J., Ex. 1 at 20, ln. 15:52-16:6; Ex. 4, Hannah Aff. para. 26.) FN7
FN7. Monsanto's expert witness also expresses his opinion that Claim 11 of the '605 patent is likewise infringed by Roman's cottonseed (Ex. 4, Hannah Aff. para. 28), but since Monsanto's summary judgment motion makes no mention of this claim, the Court will not consider that evidence or engage in any claim construction with regard to it.

These claims, as outlined in the '605 patent document's "Summary of the Invention," describe both (1) a chimeric gene FN8 that is expressed in plant cells, and (2) the plant cells or tissue, including seeds, that contain this particular man-made gene. (Ex. 1 at 14, ln. 3:20-38.) This gene consists of components that do not occur together in nature, but when this man-made gene is introduced into a plant cell, it causes the cell mechanism to express a protein that it would not express otherwise. (Ex. 4, Hannah Aff. para. 12.) The components of this man-made gene are (1) a promoter element, and (2) a structural sequence that is heterologous with respect to the promoter. FN9 (Hannah Aff. para. 27.) The promoter elements, referred to in the claim as CaMV (35S) and CaMV (19S), are derived from the cauliflower mosaic virus. (Hannah Aff. para. 9.) The promoter is a site on the DNA to which the enzyme RNA polymerase will bind and initiate (or promote) the transcription (or reading) of the DNA to produce a messenger RNA ("mRNA"). (Hannah Aff. para. 6.) The mRNA, as the name implies, then "translates" its message to the ribosomes inside the cell to produce a specific protein. (Hannah Aff. para. 8.)

FN8. A gene is a sequence of DNA that occupies a specific location on a chromosome and determines a particular characteristic in an organism. THE AMERICAN HERITAGE DICTIONARY OF THE

ENGLISH LANGUAGE (4th ed.2000) (hereafter "AHDEL").

FN9. In this sentence, the word "heterologous" means "not normally occurring." *See* AHDEL.

In the case of these chimeric genes, the promoter has been "isolated" or artificially detached from its normal protein-encoding DNA sequences and attached to a different structural sequence of interest.FN10 This sequence of interest is heterologous to that of the promoter, meaning that it is not the protein-encoding DNA sequence naturally occurring in the cauliflower mosaic virus, which is not resistant to the herbicidal effects of glyphosate-based herbicides such as Roundup. Instead, it is a protein-encoding sequence designed to express a protein enabling a plant to resist those effects. FN11 This resistant protein is referred to as the CP4 EPSPS enzyme. FN12 (Hannah Aff. para.para. 11, 12.) The promoter and the structural sequence of interest together comprise Monsanto's patented Roundup Ready man-made gene, referred to as the "CaMV 35S CP4 construct," and it is this non-naturally occurring gene which, when present in a plant cell, causes the cell mechanism to express the desired herbicide-resistant protein that it would not express otherwise. (Hannah Aff. para. 12.)

FN10. "Structural sequence of interest" is a term of art describing genetic structural sequence that encodes a specific, desirable protein, in this case, the CP4 EPSPS protein. (Hannah Aff. para. 27.)

FN11. The structural sequence of interest consists of a chloroplast transit peptide coding sequence, a CP4 EPSPS coding sequence, and a NOS 3' non-translated region. The CP4 EPSPS coding sequence facilitates the expression of the desirable but not-natural protein, and is derived from a soil bacterium strain called *Agrobacterium tumefaciens* CP4. The chloroplast transit peptide coding sequence is necessary to facilitate that protein's transverse of the plant cell's cholorplast membrane, which it otherwise would be unable to do. Hannah Aff. para. 11. The NOS 3' region prevents the mRNA from being broken down by enzymes in the plant cell by adding nucleotides to the end of the mRNA in a process called polyadenylation. Hannah Aff. para.para. 7, 10. This part of the sequence comes from the nopaline synthase (NOS) gene also derived from *Agrobacterium tumefaciens* and it does not naturally occur in cotton. Hannah Aff. para. 7.

FN12. An "enzyme" is a protein that is produced by a living organism and that functions as biochemical catalyst. *See* AHDEL.

B. Claim Construction of the '525 Patent

Monsanto also alleges that Roman's unauthorized use in 2002 of saved cottonseed containing its patented Bollgard and its patented Bollgard with Roundup Ready biotechnology constituted an infringement of its '525 patent. This patent was issued to Monsanto in 1993 for its invention of a chimeric DNA construct that enhances the efficiency of transcription in a plant cell. Ex. 2 at 22. Monsanto claims infringement of Claims 1, 2, 4, and 5 of its '525 patent, which are described as follows:

Claim 1: A DNA construct having as components, (a) a transcription initiation region including (i) a tandemly duplicated CaMV 35S enhancer sequence comprising an AluI-EcoRV fragment of a CaMV 35 upstream region; and (ii) a promoter comprising an RNA polymerase binding site and an mRNA initiation site, (b) a nucleotide sequence of interest for transcription of mRNA; and (c) a termination region; wherein said components are operably joined.

Claim 2: The DNA construct according to claim 1, wherein said promoter is a T-DNA gene 7 or gene 5

promoter of a CaMV 35S promoter.

Claim 4: The DNA construct according to claim 1 wherein said sequence of interest is an open reading frame with an initiation codon for expressing a polypeptide of interest.

Claim 5: The DNA construct according to claim 1, wherein said promoter is a CaMV 35S promoter.

(Ex. 2 at 32-33, ln. 12:65-14:8; Hannah Aff. para. 30.)

These claims, as outlined in the '525 patent document's "Summary of the Invention," describe a novel transcription initiation region, i.e., a promoter, that is composed of an RNA polymerase binding site and an mRNA initiation site that provides for "an enhanced transcription efficiency as compared to the promoter in the absence of the enhancer domain." (Ex. 2 at 27, ln. 2:5-19.) This "enhanced" 35S CaMV promoter in this instance is referred to as P-e35s. (Hannah Aff. para. 9.) Seed sold under the name Bollgard utilizes this particular biotechnology, while seed sold under the name Bollgard with Roundup Ready utilizes both the patented '525 and '605 biotechnologies. Without reiterating all the details of this biotechnology, as they have been generally set forth *supra,* it is sufficient to note that in these particular products (Bollgard and Bollgard with Roundup Ready), the enhanced promoter is attached to a structural sequence of interest that includes a coding region derived from the bacterium *Bacillus thuringiensis* protein, which is a sequence that does not naturally occur in plants. (Hannah Aff. para. 13.) This man-made construct enhances the expression in a plant cell of a protein referred to as Bt Cry 1 Ac that improves a plant's insect resistance. (Hannah Aff. para.para. 13, 24, 31.)

C. Infringement Analysis

Having construed the claims, with the assistance of expert advice, the Court must now compare the claims alleged to be infringed against the characteristics of the accused device, product, or process, in this case, the cotton samples taken from Roman's fields and the seed samples taken from the brown-bagged seed in his workshop. If the limitations in the patent claims alleged to have been infringed are present in the accused cotton samples and seed samples, then literal infringement has been established. As a preliminary matter, the Court notes that in its Original Complaint, Monsanto alleges that

laboratory testing confirmed the presence of both the CP4 EPSPS protein associated with the Roundup Ready(R) gene and the Bt Cry 1 Ac associated with the Bollgard(R) gene in every field sampled. Accordingly, all 1505.7 acres were planted with Bollgard(R) with Roundup Ready(R) cottonseed.

(Pl's.Orig.Compl.para. 17.) Monsanto retains this allegation in this exact form in its First Amended Complaint. (Pl's. First Am. Compl. para. 17.) In his Original Answer, Roman, "in regard to paragraph 17, admits the presence of said genetic markers in all fields tested, but denies the assumption that 'all acres were planted with Bollgard(R) with Roundup Ready(R) cottonseed." ' (Def's.Ans.para. 9.) Monsanto's expert witness, Dr. Hannah, cites this admission in his affidavit (Hannah Aff. para. 32). However, because Monsanto does not refer to it in its summary judgment motion, and because Roman uses the term "genetic markers" rather than referring to the specific claims of the patented processes, this Court will proceed to analyze the evidence submitted by Monsanto to establish that the limitations in the patented '605 and '525 claims at issue are present in the accused cotton samples and seed samples taken from Roman's field crops and saved seed.

The accused products were inspected and sampled by Mid-South Ag Research. That sampling involved cotton samples collected at random from each of Roman's fields in a pattern to represent all areas of the field, and 31 seed samples from approximately 334 brown bags of seed. (Ex. 6, Harlan Aff. para. 3). Some of the samples were tested by Monsanto and others were shipped to Biolab Solutions for testing. The results of those tests were provided to Monsanto's experts, Dr. Harlan of Mid-South Ag Research, and Dr. Hannah,

for analysis. (Harlan Aff. para. 3; Hannah Aff. para. 14). The data provided to Hannah for review were of three sorts: (1) polymerase chain reaction ("PCR") data to detect the engineered CaMV 35S-CP4 and Bt Cry 1 Ac constructs, (2) DNA sequence data of the PCR reaction products, and (3) enzyme linked immunosorbent antibody ("ELISA") data to detect the CP4 EPSPS enzyme and Bt Cry 1 Ac protein. (Harlan Aff. para. 4; Hannah Aff. para. 14). The first two sets of data were provided by Monsanto and the last set was submitted by Biolab Solutions. The tests used to acquire this data were all independent tests. The PCR and DNA sequencing tests detect the presence of the gene constructs in question, while the ELISA test detects the proteins expressed by those genes. (Hannah Aff. para.para. 14-15).

The PCR test was conducted on ten separate samples from five of Roman's fields totaling 1505.7 acres and on nine samples from Roman's brown-bagged seed. (Hannah Aff. para. 17). In this test, if the Bt Cry 1 Ac construct or CaMV 35S-CP4 construct is present, the primers will anneal, or hybridize, with the constructs, which are then amplified through subsequent cycles until the constructs being tested for are detectable by a technique called gel electrophoresis. Three sets were used to test for the presence of the Bt Cry 1 Ac construct and one set was used to test for the CaMV 35S-CP4 construct. (Hannah Aff. para. 16). The test utilized positive and negative controls. The data from this test showed that all the field samples and five of the nine brown-bagged seed samples indicated the presence of the Bt Cry 1 Ac construct (indicating they contained the Bollgard trait) and the CaMV 35S-CP4 construct (indicating they contained the Roundup Ready trait). (Hannah Aff. para.para. 17-18).

The second test involved actually analyzing the DNA sequence of selected products of the previous PCR tests. The data from this test showed the presence of the Bt Cry 1 Ac construct.FN13 (Hannah Aff. para. 19). The ELISA test detects the presence of the Bt Cry 1 Ac protein expressed by the Bt Cry 1 Ac construct and the CP4 EPSPS enzyme expressed by the CaMV 35S-CP4 construct, This test is extremely sensitive and requires that two separate antibodies recognize the expressed proteins in order to obtain a positive signal. (Hannah Aff. para. 20). Dr. Hannah's analysis of the data provided to him from this test showed the same results as the PCR test data. (Hannah Aff. para. 21). Dr. Harlan's analysis of the data submitted to him by Biolab Solutions led him to conclude that all the field samples and 16 of the seed samples from lot L-42-01 tested positive for the presence of the Bt Cry 1 Ac protein and the CP4 EPSPS enzyme. In addition, 15 of the seed samples from lots L-16, L-52, L-122-97, and L-24-98 tested positive for the presence of the Bt Cry 1 Ac protein and/or the CP4 EPSPS enzyme. (Harlan Aff. para.para. 7-8).

FN13. The affidavit of Dr. Hannah does not indicate in which field or brown-bagged samples the Bt Cry 1 Ac construct were found utilizing the second test. For the issue of liability alone, however, a determination of the extent of the presence of the accused process or product is not necessary, although it is necessary for the determination of damages.

In order to be considered for summary judgment, Monsanto's proffered expert witnesses' affidavits "must include materials upon which the expert based his opinion, as well as an indication of the reasoning process underlying the opinion." Boyd v. State Farm Ins. Cos., 158 F.3d 326, 331 (5th Cir.1998). In this instance, the data described above led one of Monsanto's experts to conclude that

the engineered Bt Cry 1 Ac coding region under the control of the cauliflower mosaic virus 35S promoter is present in all field cotton samples and the majority of the bagged cotton samples isolated from Roman.... Since these DNA sequences would only be present in cotton containing biotechnology engineered by Monsanto, it is my opinion, therefore, that the cotton seeds sampled from Roman contain Monsanto's BT Cry 1 Ac (Bollgard) gene technology.

...

[I]t is my conclusion that Roman cotton samples contain Monsanto's construct with the engineered CP4

EPSPS coding region.... Since these DNA sequences would only be present in cotton plants engineered by Monsanto, it is my opinion, therefore, that the cotton seeds obtained from land farmed by Roman contain Monsanto's Roundup Ready(R) gene.

(Hannah Aff. para.para. 22-23).

Monsanto's expert witnesses' review of the data and each one's statement regarding the reasoning process that led each one's conclusions, even when viewed in the light most favorable to Roman, together with the absence of any controverting evidence on Roman's behalf, establish for this Court the basis for finding that some portion of Roman's field crop and brown-bagged seed did contain Monsanto's patented Bollgard and Roundup Ready biotechnologies. FN14 Further, Roman does not argue that he signed the required technology license, paid the necessary licensing fee, or was otherwise authorized by Monsanto to utilize its patented products in the 2002 crop year.FN15 Rather, Roman argues in his defense that he did not knowingly infringe on Monsanto's patented product, that Monsanto's product was not marked with notice as required by federal law, and that Monsanto abandoned the product in question, thereby precluding Monsanto from asserting its patent rights.

FN14. Although Roman disputes the testing methodology employed by Monsanto and its expert witnesses, he offers no evidence to rebut that evidence. In a patent case, "[w]ith respect to whether there is a genuine issue, the court may not simply accept a party's statement that a fact is challenged. The party opposing the motion must point to an evidentiary conflict created on the record at least by a counter statement of a fact or facts set forth in detail in an affidavit by a knowledgeable affiant. Mere denials or conclusory statements are insufficient." Barmag Barmer Maschinengabrik AG v. Murata Machinery, Ltd., 731 F.2d 831, 835-36 (Fed.Cir.1984) (internal citation omitted).

FN15. Roman does claim in his Response to have signed a license agreement in 1996, although there is evidence from his own deposition testimony that he never signed any such agreement. However, as noted *supra,* any such license would have been good for one growing season only, and would have prohibited the saving of any seed from that crop or planting of any saved seed.

As to Roman's first argument, the Court notes that the issue of his intentional or willful infringement is relevant solely to the issue of damages, which are not the subject of this partial summary judgment motion limited to the issue of liability alone. *See* Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512, 1519 (Fed.Cir.1995) (en banc), *rev'd on other grounds,* 520 U.S. 17, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). As to Roman's second argument, again, the Court notes that the issue of Monsanto's notice of its patent rights through adequate marking of the product is not relevant to the issue of liability for infringement, but only to the question of damages. *See* 35 U.S.C. s. 287(a); Afros S.P.A. v. Krauss-Maffei Corp., 671 F.Supp. 1458, (D.Del.1987) (determining when alleged infringer had notice was question for damage phase rather than liability phase of litigation).

Lastly, with regard to Roman's third argument that Monsanto is precluded from asserting its patent rights because of abandonment, the Court notes that Federal Rule of Civil Procedure 8(c) requires that "any ... matter constituting an avoidance or affirmative defense" must be affirmatively pleaded. FED.R.CIV.P. 8(c). Abandonment is an affirmative defense under Texas law and must be pleaded. France v. American Indem. Co., 648 S.W.2d 283, 285 (Tex.1983). Roman has neither pleaded abandonment in his Answer nor sought to amend his Answer to include it as an affirmative defense, even though the deadline to amend pleadings was September 15, 2003. At all times, from the date of his first responsive pleading up until the deadline for amending his Answer, Roman was in possession of all facts necessary to plead abandonment as an affirmative defense. Furthermore, the deadline for discovery was April 15, 2004, and the time is now appropriate for this Court to rule on a motion for summary judgment. *See* Celotex Corp. v. Catrett, 477 U.S.

317, 322, 106 S.Ct. 2548, 2552, 91 L.Ed. 265 (1986). Therefore, this Court will not permit Roman to assert abandonment as an affirmative defense at this late date in an attempt to defeat Monsanto's Motion for Partial Summary Judgment on the issue of liability for patent infringement. Accordingly, this Court finds, as a matter of law, that some portion of Roman's field crop and brown-bagged seed did infringe on Monsanto's patented Bollgard and Roundup Ready biotechnologies.FN16

FN16. This finding is not determinative of the number of acres involved or extent of the infringement. Romans disputes the amount of cotton actually planted and/or harvested claimed by Monsanto. Def's. Resp. para. 7. This is an issue to be determined at trial for purposes of calculating what, if any, damages are appropriate.

D. Injunctive Relief

Pursuant to 35 U.S.C. s. 283, this Court finds that Roman's infringement of Monsanto's patent rights entitles Monsanto to a permanent injunction prohibiting Roman from acquiring or using Monsanto's patented crop biotechnology in any form, without its authorization. *See* DuBois v. Kirk, 158 U.S. 58, 66-67, 15 S.Ct. 729, 732, 39 L.Ed. 895 (1895) (finding complainant entitled to injunction in a case of clear infringement regardless of amount of damages); Carborundum Co. v. Molten Metal Equip. Innovations, Inc., 72 F.3d 872, 881 (Fed.Cir.1995) (noting that granting of injunctive relief is appropriate on a finding of infringement). Monsanto's rights to the patented product and Roman's infringement of same are equally clear. Any relief at law to which Monsanto might be entitled would be for past use in any event and would not adequately protect Monsanto against any future use Roman might make of any patented saved seed still in his possession. Roman would not be entitled to use of any patented saved seed even were he a licensed user of Monsanto's product, having paid the appropriate technology fee. Furthermore, Monsanto's entitlement to injunctive relief exists independently of any determination of intent or willfulness on the part of Roman. *See* C.F. Mueller Co. v. A. Zeregas Sons, 12 F.2d 517, 519 (2d Cir.1926) (noting injunctive relief proper even against accidental infringer).

IV.

CONCLUSION

After considering all the relevant arguments and evidence, the Court finds that Plaintiff Monsanto Company is entitled to partial summary judgment as a matter of law on the issue of Defendant Mike Roman's patent infringement of Monsanto's patented Bollgard and Roundup Ready biotechnologies. Specifically, the Court finds that Roman infringed Claims 1, 2, 4, and 5 of Monsanto's United States Patent number 5,352,605, and Claims 1, 2, 4, and 5 of Monsanto's United States Patent number 5,196,525. The issue of damages remains for trial on the merits. Further, the Court finds that Plaintiff Monsanto Company is entitled to injunctive relief.

The Court therefore ORDERS that Plaintiff Monsanto Company's Motion for Partial Summary Judgment is hereby GRANTED on the issue of liability. The Court further ORDERS that Defendant Mike Roman is permanently enjoined from acquiring or using Monsanto's patented crop biotechnology, without Monsanto's authorization.

SO ORDERED.

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