

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AGROFRESH INC.,)	
)	
Plaintiff,)	
v.)	
)	
ESSENTIV LLC, DECCO U.S. POST-)	C.A. No. 16-662 (MN)
HARVEST, INC., CEREXAGRI, INC. d/b/a)	
DECCO POST-HARVEST and UPL, LTD.,)	
)	
Defendants.)	

MEMORANDUM OPINION

Chad S.C. Stover, Regina S.E. Murphy, BARNES & THORNBURG LLP, Wilmington, DE; Robert D. MacGill, Matthew Ciulla, MACGILL PC, Indianapolis, IN; Lynn C. Tyler, Joseph T. Wendt, Jessica M. Lindemann, BARNES & THORNBURG LLP, Indianapolis, IN – Attorneys for Plaintiff

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November 30, 2020
Wilmington, Delaware


NOREIKA, U.S. DISTRICT JUDGE:

The Court presided over a five-day jury trial from October 7, 2019 to October 11, 2019. (See D.I. 537 ¶ 2; see also D.I. 632, 633, 634, 635 & 636). At the end, the jury found Defendants Essentiv LLC (“Essentiv”), Decco U.S. Post-Harvest, Inc. (“Decco U.S. Post-Harvest”), Cerexagri, Inc. d/b/a Decco Post-Harvest (“Cerexagri”)¹ and UPL, Ltd. (“UPL”) (collectively “Defendants”) to have willfully misappropriated four of Plaintiff AgroFresh Inc.’s (“Plaintiff” or “AgroFresh”) trade secrets, willfully infringed an AgroFresh patent and engaged in unfair competition, intentional interference with contracts and a business relationship, conversion and conspiracy. Presently before the Court are Defendants’ renewed motion for judgment as a matter of law (D.I. 596) and Plaintiff’s motions for enhanced damages (D.I. 587) and pre- and post-judgment interest (D.I. 589). For the reasons set forth below, the Court will grant-in-part and deny-in-part Defendants’ motion for judgment as a matter of law, deny Plaintiff’s motion for enhanced damages and grant Plaintiff’s motion for pre- and post-judgment interest.

I. BACKGROUND

Now in its fifth year, this case represents a fiercely contested fight, filled with animosity and acrimony. Plaintiff and Defendants are in the agriculture business and provide products that preserve the freshness of certain produce. Plaintiff’s SmartFresh, which has been marketed in the United States since 2002, contains 1-methylcyclopropene (“1-MCP”), a compound that delays ripening by inhibiting produce response to ethylene (a natural byproduct that causes ripening). (See D.I. 519, Ex. 1 ¶¶ 6-7). For a limited time in 2016-2017, Defendants marketed their own 1-

¹ Essentiv, Decco U.S. Post-Harvest and Cerexagri are sometimes referred to collectively as “Decco.” (See D.I. 575 at 11).

MCP containing product, TruPick. It is TruPick and its development that are at the heart of this case.

Plaintiff originally filed this case against MirTech, Inc., Nazir Mir, Essentiv, Decco U.S. Post-Harvest and Cerexagri, seeking declarations of ownership over certain intellectual property rights and asserting claims of breach of contract, tortious conduct and patent infringement. (*See generally* D.I. 2). Dr. Mir had been AgroFresh’s technical consultant on 1-MCP for years but, in 2014, while still working with AgroFresh, he began working with Decco U.S. Post-Harvest and Essentiv to help them develop their own 1-MCP product (*i.e.*, TruPick).² Many of the allegations in the original Complaint (and the resulting causes of action) related to the failed relationship between Plaintiff and Dr. Mir and MirTech, Inc. (“the MirTech Defendants”). (*See, e.g., id.* ¶¶ 3-4; *see also id.* at Counts I & IV). Pursuant to the parties’ joint request (D.I. 18), on October 12, 2016, Judge Robinson³ bifurcated the claims relating to ownership of U.S. Patent No. 9,394,216 (“the ’216 Patent”) and fraudulent inducement based on the parties’ representation that addressing those claims first would simplify and clarify the disputed issues.

In March 2017, Judge Robinson held a bench trial on Counts I and IV. (*See* D.I. 94, 95 & 96). The court’s post-trial opinion issued on June 30, 2017. (D.I. 97). In that opinion, Judge Robinson concluded that the ’216 Patent, which claims 1-MCP complexes with metal-organic frameworks (“MOFs”), had been automatically assigned to Plaintiff pursuant to its agreement with Dr. Mir⁴ and that Dr. Mir had fraudulently induced Plaintiff into an extension of that agreement.

² Essentiv was a joint venture between Decco U.S. Post-Harvest and MirTech to pursue 1-MCP products. (*See* D.I. 519, Ex. 1 ¶ 5; *see also* DTXb-491).

³ This case was assigned to the undersigned judge on August 27, 2018.

⁴ The agreement provided that improvements to certain products (including 1-MCP related products) would automatically be assigned to Plaintiff. (*See, e.g.,* D.I. 97 at 18-20).

(*See* D.I. 97 at 33-34; *see also* D.I. 98 (judgment on Counts I and IV to be entered at the conclusion of the case)). The ruling meant that Decco U.S. Post-Harvest and Essentiv had no ownership in or rights to the '216 Patent or related 1-MCP technology despite their own contracts with the MirTech Defendants.

On August 18, 2017, Plaintiff filed its First Amended Complaint, asserting claims against the original defendants as well as an additional defendant, UPL. (*See* D.I. 106). In the First Amended Complaint, Plaintiff added claims arising under the Defend Trade Secrets Act (“DTSA”) and the Pennsylvania Uniform Trade Secrets Act (“PUTSA”), as well as a number of other causes of action for tortious interference with Plaintiff’s contracts or business relationships. (*See generally id.*). On September 15, 2017, Plaintiff and the MirTech Defendants entered into a settlement agreement (D.I. 178, Ex. A) and a consent judgment, which “establish[ed] liability” for all counts asserted against the MirTech Defendants in the First Amended Complaint (D.I. 115). The MirTech Defendants were dismissed on January 2, 2019, leaving the current Defendants in the case. On February 18, 2019, Plaintiff filed a Second Amended Complaint that asserted unfair competition, unjust enrichment, DTSA and PUTSA violations, various acts of tortious interference, conversion and civil conspiracy, as well as direct, indirect and willful infringement of the '216 Patent and U.S. Patent Nos. 6,017,849 (“the '849 Patent”) and 6,313,068 (“the '068 Patent”). (*See generally* D.I. 412; *see also* D.I. 519 ¶ 10).

From October 7, 2019 to October 11, 2019, the Court presided over a jury trial. (*See* D.I. 537 ¶ 2; *see also* D.I. 632, 633, 634, 635 & 636). The jury found that Plaintiff held trade secrets in four technologies (its gas generator, gas sampler, testing protocols and treatment parameters), but Plaintiff did not possess trade secrets in its treatment tents or information relating to the '216 Patent. (D.I. 578 at 2). The jury further found that Defendants willfully and maliciously

misappropriated the trade secrets Plaintiff held in its gas generator, gas sampler, testing protocols and treatment parameters. (*Id.* at 3). The jury also found that Defendants were liable for unfair competition, intentional interference with the MirTech agreements and business relationship, intentional interference with Plaintiff's customer contracts and conversion. (*Id.* at 4-5). Defendants were found not liable for intentional interference with prospective business relationships. (*Id.* at 4). As to civil conspiracy, the jury found that Decco was liable for civil conspiracy (with UPL and/or Dr. Mir) as to trade secret misappropriation, unfair competition, intentional interference with the MirTech agreements and business relationship and intentional interference with customer contracts, as well as conversion. (*Id.* at 5). As to the same claims, the jury found that UPL was liable for civil conspiracy with Decco (and/or Dr. Mir) only as to intentional interference with the MirTech agreements and business relationship and intentional interference with customer contracts. (*Id.*). Finally, the jury found that Decco willfully infringed claim 1 of the '849 Patent and that claim 1 was not invalid.⁵ (*Id.* at 6).

The jury awarded Plaintiff \$6,000,000 in compensatory damages for actual loss caused by Defendants' patent infringement, trade secret misappropriation, unfair competition, intentional interference with the MirTech agreements and business relationship and intentional interference with customer contracts, conversion and civil conspiracy. (D.I. 578 at 7). The jury found that Defendants had been unjustly enriched by the trade secret misappropriation and awarded Plaintiff \$1,013,000 for that unjust enrichment. (*Id.*). The jury also awarded \$24,000,000 in punitive damages against Defendants based on unfair competition, intentional interference with the

⁵ Prior to trial, the issue of infringement of the '216 Patent was stayed pending resolution of *inter partes* review proceedings. (D.I. 467). Plaintiff also dropped all claims of infringement for the '068 Patent and all but one asserted claim (*i.e.*, claim 1) of the '849 Patent. (*See* D.I. 567).

MirTech agreements and business relationship and intentional interference with customer contracts, conversion and/or civil conspiracy. (*Id.*).

On October 30, 2019, the Court entered judgment on the jury verdict under Rule 58(b) of the Federal Rules of Civil Procedure. (*See* D.I. 586). On November 8, 2019, Plaintiff moved for enhanced damages (*see* D.I. 587 & 588) and, on November 11, 2019, Plaintiff moved for pre- and post-judgment interest (*see* D.I. 589, 590 & 591). On November 27, 2019, Defendants renewed their motion for judgment as a matter of law. (*See* D.I. 596 & 597). Briefing on post-trial motions was completed on January 7, 2020. (*See* D.I. 594, 598, 602, 603, 605, 606, 612 & 616).⁶ On May 27, 2020, the Court heard oral argument on the post-trial motions.

II. LEGAL STANDARDS

Judgment as a matter of law may be entered against a non-moving party if the Court “finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on [an] issue.” FED. R. CIV. P. 50(a)(1). Judgment as a matter of law is appropriate “only if, viewing the evidence in the light most favorable to the nonmovant and giving it the advantage of every fair and reasonable inference, there is insufficient evidence from which a jury reasonably could find liability.” *Lightning Lube, Inc. v. Witco Corp.*, 4 F.3d 1153, 1166 (3d Cir. 1993). Entry of judgment as a matter of law is a remedy to be invoked only “sparingly.” *CGB Occupational Therapy, Inc. v. RHA Health Servs. Inc.*, 357 F.3d 375, 383 (3d Cir. 2004).

Following a jury trial, a renewed motion for judgment as a matter of law under Rule 50(b) may be granted only if the movant demonstrates “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]

⁶ Plaintiff also filed a motion for a permanent injunction (D.I. 599) that it later withdrew (D.I. 622).

the jury’s verdict cannot in law be supported by those findings.” *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (alteration in original) (internal quotation marks omitted). Substantial evidence is such relevant evidence that a reasonable mind might accept as adequate to support the finding under review. *See Enplas Display Device Corp. v. Seoul Semiconductor Co.*, 909 F.3d 398, 407 (Fed. Cir. 2018). In determining whether substantial evidence supports the jury verdict, the Court may not make credibility determinations, weigh the evidence or substitute its own conclusions for that of the jury where the record evidence supports multiple inferences. *See Lightning Lube*, 4 F.3d at 1166.

III. DISCUSSION

A. Trade Secret Misappropriation

As noted above, the jury found that Plaintiff possessed trade secrets in its gas generator, gas sampler, testing protocols and treatment parameters and that Defendants willfully and maliciously misappropriated each of those trade secrets. (*See* D.I. 578 at 2-3). To prevail on a claim of trade secret misappropriation, Plaintiff must prove “acquisition of a trade secret of another by a person who knows or has reason to know that the trade secret was acquired by improper means” or the “disclosure or use” of the trade secret by “improper means” or other statutorily proscribed conduct. *See* 18 U.S.C. § 1893(5); 12 PA. CON. STAT. ANN. § 5302.⁷ A necessary

⁷ Plaintiff asserted claims of trade secret misappropriation under both PUTSA and the DTSA. Given the overlap between state-adopted versions of the Uniform Trade Secrets Act and the DTSA, courts often analyze parallel state and federal claims of trade secret misappropriation together. *See, e.g., Freedom Med. Inc. v. Whitman*, 343 F. Supp. 3d 509, 518 n.6 (E.D. Pa. 2018); *Teva Pharm. USA, Inc. v. Sandhu*, 291 F. Supp. 3d 659, 675 (E.D. Pa. 2018); *see also Veronica Foods Co. v. Ecklin*, No. 16-07223-JCS, 2017 WL 2806706, at *13 (N.D. Cal. June 29, 2017). Although the DTSA adds an additional requirement – use in interstate or foreign commerce – the parties stipulated that that element was met. (D.I. 553). The jury rendered its verdict based on the language of DTSA, but neither party argues that PUTSA would lead to a different result (whether for or against Defendants).

predicate is a showing that Plaintiff possessed a trade secret, *i.e.*, information that the owner has taken reasonable measures to keep secret and that derives independent economic value from not being generally known or readily ascertainable by proper means (and can provide economic value to the misappropriator through use or disclosure). *See* 18 U.S.C. § 1839(3); 12 PA. CON. STAT. ANN. § 5302.

Defendants move for judgment as a matter of law that Plaintiff failed to prove that it possessed trade secrets in its gas generator, gas sampler, testing protocols and treatment parameters and, further, that Plaintiff failed to prove that Defendants misappropriated any of these trade secrets. (*See* D.I. 597 at 2-10). The Court addresses each trade secret in turn.

1. Gas Generator

The gas generator is a three-foot tall container developed by Plaintiff that uses an “air infusion mechanism” to facilitate the release of 1-MCP into a room containing produce. (Tr. at 452:17-454:12). In particular, when Plaintiff’s SmartFresh product is placed into the generator, the air infusion mechanism generates bubbles that force 1-MCP out of water and into the air in the room. (Tr. at 452:20-23 & 453:23-454:12). Plaintiff offered testimony that the air infusion mechanism was hidden from public view. (Tr. at 453:19-25). Nevertheless, Defendants argue that the mechanism was generally known in the industry and therefore cannot be a protectable trade secret. (D.I. 597 at 2-3).⁸ In support, Defendants point to a presentation describing “[a]n air

(*Compare* D.I. 575 at 13 & 17, *with* 18 U.S.C. §§ 1839(3) & (5)). That is, the parties agree that the DTSA and PUTSA claims rise and fall together.

⁸ As to the elements of whether a trade secret exists, Defendants do not challenge any aspect other than the “generally known or readily ascertainable [by or through] proper means.” *See* 18 U.S.C. § 1839(3); 12 PA. CON. STAT. ANN. § 5302. Unless otherwise noted, Defendants’ challenge to the existence of Plaintiff’s trade secrets always focuses on this issue alone – *i.e.*, on whether the technology was generally known or readily ascertainable through proper means.

bubbler in the water [that] carries the 1-MCP from solution into the atmosphere of the sealed room” (DTXb-556 at RMB-25634) and to their expert’s testimony that he saw “AgroFresh’s gas generator with authorization as early as 2002” and later described its operation to Decco (Tr. at 1112:1-12 & 1114:12-21). Defendants also argue that the “air infusion mechanism” was disclosed in the ’849 Patent and therefore cannot be a trade secret. (D.I. 597 at 3; *see also* ’849 Patent at 8:12-15 (“A more specific feature of this methylcyclopropene method of delivery embodiment comprises bubbling a gas through the solvent while it is in contact with the complex.”))).

The jury was presented with the evidence Defendants now rely on and found it not credible or insufficient to overcome Plaintiff’s evidence that the “air infusion mechanism” was hidden from view and entitled to trade secret protection. The Court sees no basis to disturb that finding. The purportedly revealing photograph in Dr. Beaudry’s presentation does not reveal the specific “air infusion mechanism” used by Plaintiff, but simply shows a container sitting in a hole in a door. (*Compare* DTXb-556 at RMB-25634; *with* Tr. at 454:4-12 (Dr. Beaulieu, Plaintiff’s vice president of research and development, describing the “air infusion mechanism” as something that “enables the right amount of 1-MCP to come out of the water at the right time and farley [sic] so that what’s left is sugar water and its’ easy to save to dispose of. . . . It is designed to completely push the 1-MCP out of the generator.”); *see also* Tr. at 1114:3-9 (Defendants’ expert, Dr. Beaudry, discussing the photograph and explaining that “also on the other side of the door is one of these gas generators that we’re talking about here.”)). As to Dr. Beaudry’s testimony that he had access to the system and air infusion mechanism in 2002 (without confidentiality restrictions), thereby suggesting it was not hidden, the jury was free to make credibility determinations or reject that testimony.

Finally, that the ’849 Patent discloses bubbling gas through a solvent does not render the gas generator trade secret generally known. Indeed, that disclosure simply states that gas may be

bubbled through a solvent with no specifics as to what mechanism to use or any other details related to the bubbling or its effect on the 1-MCP. *See Texas Advanced Optoelectronic Sols., Inc. v. Renesas Elecs. Am., Inc.*, 895 F.3d 1304, 1313 (Fed. Cir. 2018) (patent must disclose combination of elements that comprises trade secret to render it “generally known”), *cert. denied*, 139 S. Ct. 2741 (2019). The Court will not disturb the jury’s findings.

The Court likewise finds that there was substantial evidence to support the jury’s finding that Defendants misappropriated the gas generator trade secret. Defendants argue that application of TruPick employed a “bait bucket” that “consisted of publicly available technology, *e.g.*, a container with an air bubbler.” (D.I. 597 at 3). Defendants presented evidence supporting this theory to the jury. (*See, e.g.*, Tr. at 605:13-19; Tr. at 1115:11-1116:9; DTXb-168). But the jury was also presented with evidence that supported the finding that Defendants acquired Plaintiff’s “air infusion mechanism” by improper means. (*See, e.g.*, PTXa-462 at MIR_22568 (Dr. Mir had access to Plaintiff’s gas generator); Tr. at 604:5-12 (Dr. Mir was tasked with developing Defendants’ gas generator); Tr. at 1112:10-14 (Dr. Beaudry discussing the photograph he took of Plaintiff’s gas generator and provided to Decco employees at MirTech’s request)). Indeed, Dr. Mir admitted to misappropriating trade secrets held by Plaintiff (Tr. at 551:11-13), and he worked closely with Defendants on developing their TruPick product. And there was evidence that Defendants knew of Dr. Mir’s relationship and work with Plaintiff and took pains to keep their own work with Dr. Mir hidden, particularly given the 1-MCP knowledge he brought to Defendants. (*See, e.g.*, Tr. at 127:9-10 (Court reading to the jury the stipulated fact that “Dr. Mir and Decco took pains to keep both the M-O-F technology and their relationship a secret from AgroFresh”); *see also* PTXa-23 (“[Dr. Mir] is nervous that AgroFresh will learn about his work with Decco We definitely need [Dr. Mir] and his 1-MCP patents/technology”); PTXa-24; PTXa-26). A

jury could reasonably infer from this evidence that Defendants acquired (*i.e.*, misappropriated) the trade secret Plaintiff held in its gas generator. Thus, substantial evidence supports the jury's findings that Defendants misappropriated Plaintiff's gas generator trade secret.

2. Gas Sampler

The gas sampler is a piece of equipment that samples gas in a produce room undergoing treatment. As Dr. Beaulieu explained, the gas sampler "takes a sample of the air inside the room so that we can then take it back to the laboratory and measure to know what's going on inside that room." (Tr. at 455:8-11). Plaintiff's gas sampler was the product of research to determine the best time for sampling after SmartFresh treatment and it involves specialized technology to prevent the air from being changed while sampled. (Tr. at 455:19-456:12). The gas sampler uses miniaturization technology to obtain a sample of a desired size. (Tr. at 456:13-22). And, further, Dr. Beaulieu testified that no one else in the industry provided gas sampling service and that the gas sampler was under secrecy protections. (Tr. at 457:3-8).

Defendants argue that Plaintiff's gas sampler was not a trade secret because "features of the gas sampler" were generally known and commercially available (D.I. 597 at 4), pointing to their expert's testimony that a commercially available sample bag could be attached to a commercially available pump to achieve a gas sampler that could be programmed to sample gas at any time (*see* Tr. at 1120:20-25; *see also* DTXb-168 at DECCO-168054; DTXb-156 at DECCO-168066). This dispute is one that turns on the credibility of Plaintiff's witness versus Defendants' expert, and that credibility determination falls to the jury.⁹ The Court will not disturb the jury's finding that Plaintiff's gas sampler was a trade secret.

⁹ As to Defendants' argument that Plaintiff disclosed the details of its gas sampler to the EPA (D.I. 597 at 4-5), the jury was presented with evidence that did not occur (*see* Tr. at 534:18-21 & 535:5-8).

The jury was also presented with substantial evidence that Defendants misappropriated Plaintiff's gas sampler. Dr. Mir knew how Plaintiff's gas sampler worked and had been provided a prototype of the gas sampler. (*See* Tr. at 226:18-227:23 (AgroFresh scientist explaining Dr. Mir's access to gas sampling knowledge); *see also* PTXb-817 (Dr. Mir discussing sampling with AgroFresh scientists); PTXa-180 (“[Dr. Mir] has an understanding of the air sampling procedure used by [AgroFresh] using GC/FID and has been brainstorming how we/Decco can sample/analyze”); PTXa-159 at pg. 7 of 12 (Dr. Mir presentation depicting 1-MCP sampler for bananas)). Dr. Mir also was responsible for designing and creating Defendants' gas samplers. (Tr. at 606:20-22). And the jury was presented with evidence that Defendants had access to Plaintiff's gas sampler and that access was not authorized. (*See* PTXa-181 at slide 21; *see also* Tr. at 458:3-459:5). The jury could reasonably infer from this evidence that Defendants acquired Plaintiff's gas sampler technology by improper means (including through Dr. Mir, who admitted to misappropriating Plaintiff's trade secrets). This is sufficient to support the finding that Defendants misappropriated Plaintiff's gas sampler trade secret.

3. Testing Protocols

At trial, Plaintiff asserted that its “testing protocols” were trade secrets. In Dr. Beaulieu's words, testing protocols are instructions that indicated a certain procedure to follow – “almost like a recipe.” (Tr. at 462:11-463:1). Defendants argue that Plaintiff has failed to show that it possessed a trade secret in its testing protocols. (*See* D.I. 597 at 6). The Court agrees.

The entirety of Dr. Beaulieu's testimony on “testing protocols” being a trade secret is presented below:

Q. Okay. Now, with respect to other technologies associated with the trade secret – pardon me – with respect to the other technologies associated with the SmartFresh product, is there – are there testing protocols that are also associated with the product?

A. Yes, there are.

Q. All right. Now, on this subject of testing protocols, could you tell the Court and jury what you mean by testing protocols?

A. The word protocol is essentially a set of instructions, almost like a recipe. What's the first thing the scientist or technician will do, the second, the third, the fourth, et cetera, and documented to say exactly how to do the study. We call them studies or tests, but it's to figure out how SmartFresh can best help the fruit stay fresh.

Q. Now, with respect to the testing protocols that you used to conduct the test – well, first, are the testing protocols something that you developed over a period of years?

A. We have been developing and refining our protocols, yes.

Q. When did you first begin in the SmartFresh context developing protocols?

A. 1999.

Q. And under your supervision, has that been a subject of your work personally during those years?

A. Yes, it was.

Q. And the information associated with these testing protocols that you've described to the jury, was that publicly available?

A. No.

Q. How does AgroFresh, if at all, derive any economic value from those testing protocols associated with SmartFresh, the SmartFresh product?

A. The testing protocols is what we use to figure out how to get the most value out of SmartFresh on the apples and that's part of the value we give to our customers. It's part of our total service to them.

Q. And with respect to this testing – pardon me. With respect to these testing protocols you've described, based on your work at AgroFresh, have they provided your company with a competitive advantage?

A. Absolutely.

(Tr. at 462:11-464:4). Despite Dr. Beaulieu testifying that the unspecified protocols were documented, Plaintiff did not offer a single one into evidence. In fact, Plaintiff introduced no other

evidence regarding these protocols – *i.e.*, there is nothing in the record as to any steps, sequence of steps, materials to use, timing, interpretation of results, etc. for these testing protocols.¹⁰ There is not even any evidence as to what the “testing protocols” actually test.¹¹ There is thus insufficient evidence to support the jury’s findings.

The above testimony (*i.e.*, the only evidence on “testing protocols”) is conclusory, asserting that Plaintiff regarded some unspecified and undefined testing protocols as economically valuable because they were secret. This testimony fails to articulate what the trade secret is with any specificity and instead relies on handwaving about a generic category of protocols. Without knowing specifics about what the protocols are, there is no way the jury could determine whether those protocols were generally known or readily ascertainable by proper means. Thus, Plaintiff did not prove that it possessed the “testing protocols” as a trade secret, and the jury’s finding to the contrary must be vacated, as must its finding that Defendants misappropriated the testing protocols trade secret.

4. Treatment Parameters

Plaintiff offered evidence that its treatment parameters were trade secrets. (*See* Tr. at 464:5-467:7). Dr. Beaulieu began working to develop treatment parameters in 1999 and has continued working on those parameters through at least the time of trial. (Tr. at 464:18-465:1). As she explained, treatment parameters measure various aspects related to SmartFresh treatments

¹⁰ Furthermore, without knowing what the protocols at issue actually are, Plaintiff cannot show that Defendants acquired, disclosed or used those protocols.

¹¹ In addition to Dr. Beaulieu’s testimony, Plaintiff cites to a few lines of testimony from Mr. McCaskey and Dr. Mir, a stipulation and two exhibits (*i.e.*, PTXa-23 & PTXa-462). (*See* D.I. 612 at 6-7). Of these citations, the stipulation mentions “protocols” (quoting PTXa-23) and PTXa-462 refers to “Standard Protocols” as a “Major Challenge.” None of the cited support refers to protocols as “testing protocols” or identifies anything about the protocols (*e.g.*, what they test or how they test it).

– *e.g.*, type of apples treated. (Tr. at 464:5-17). The treatment parameters are determined by numerous studies and result in an understanding of “the best conditions to use SmartFresh.” (Tr. at 465:2-18). One manifestation of the treatment parameters is a dosage chart, which indicates how much product to apply and at what rate. (*See id.* 466:19-22; *see also* PTXa-54 at MIR_5920). Dr. Beaulieu testified that Plaintiff kept its dosage charts secret. (Tr. at 466:23-467:6). Defendants argue that Plaintiff has failed to demonstrate it possessed any trade secrets in its treatment parameters because there is no description of the specific treatment parameters and no evidence that its treatment parameters were different from “general or specialized knowledge” in the industry. (*See* D.I. 597 at 7-8). The Court disagrees.

Plaintiff offered testimony from Dr. Beaulieu that the dosage charts were confidential and there is at least one such dosage chart that was presented to the jury. (*See* Tr. at 466:19-467:6; *see also* PTXa-54). Dr. Beaulieu explained that dosage charts were one example of Plaintiff’s treatment parameters. (Tr. at 466:19-22). The dosage chart, which is marked “DOW CONFIDENTIAL,”¹² contains data indicating how and how much SmartFresh is applied (*e.g.*, many different pouches with certain minimum and maximum volumes). (PTXa-54 at MIR_5920). This is sufficient evidence for the jury to reasonably determine that the dosage charts were, in fact, trade secrets. Defendants argue that there was evidence that SmartFresh dosage charts are publicly available (D.I. 597 at 9-10), but the jury was entitled to weigh that evidence against the testimony of Dr. Beaulieu and the dosage chart marked confidential. The Court will not disturb the jury’s finding that Plaintiff held trade secrets in its treatment parameters, more specifically dosage charts.

There is also substantial evidence to support the jury’s finding that Defendants misappropriated at least the confidential dosage chart admitted into evidence. Hasan Isik is the

¹² AgroFresh used to be a division of Dow AgroSciences. (*See, e.g.*, Tr. at 576:9-12).

individual who sent that dosage chart to Defendants. Mr. Isik was a former AgroFresh employee who was recruited by Dr. Oakes, a former Dow employee and later Decco employee. (See PTXa-54 at MIR_5918 (“I have attached Agrofresh’s dosage chart.”); see also PTXb-284; PTXa-181 at slide 9; Tr. at 575:11-576:8). The jury also heard evidence that Mr. Isik would have signed a confidentiality agreement with Plaintiff. (See Tr. at 231:2-10). And Dr. Oakes testified that he found portions of this dosage chart useful and it was “of some benefit.” (See Tr. at 641:24-642:4). Although Dr. Oakes testified that the chart was not marked Dow confidential when he read it, the jury was allowed to make its own credibility assessments as to that testimony. (See Tr. at 641:24-25). Based on the evidence, the jury could reasonably find that Defendants misappropriated Plaintiff’s dosage chart trade secret (*i.e.*, Plaintiff’s treatment parameters).

5. Willful Trade Secret Misappropriation

Defendants argue that there is insufficient evidence to support the jury’s findings as to willful and malicious misappropriation of Plaintiff’s trade secrets. The Court disagrees. PUTSA defines “willful and malicious” to mean “intentional acts or gross neglect of duty as to evince a reckless indifference of the rights of others on the part of the wrongdoer, and an entire want of care so as to raise the presumption that the person at fault is conscious of the consequences of his carelessness.” 12 PA. CON. STAT. ANN. § 5302; (*see also* D.I. 575 at 20 (jury instruction based on PUTSA)).¹³ Defendants argue that the jury was provided evidence that “Defendants took specific steps to avoid infringing the rights of others.” (D.I. 597 at 11). That is true. (*See, e.g.*, Tr. at 743:11-753:15 (Decco CEO explaining that they sought assurance from Dr. Mir that he was bringing technology “free and clear”); DTXb-491 § 19 (Essentiv agreement with Decco and

¹³ The DTSA does not define “willful and malicious” but neither side asserts that the analysis would be different under the DTSA.

MirTech containing with provision that no other entity or person has right, title or interest in MirTech's technology); DTXb-493 § 6 (Essentiv-MirTech agreement with MirTech representation that it is sole owner of technology); DTXb-677 § 12 (Decco-MirTech confidential disclosure agreement with MirTech representing it has the right to disclose information); PTXa-71 § 7 (Essentiv-MirTech agreement with MirTech representing not to make improper disclosures of another party's information); *see also* DTXb-680 (Decco-MirTech letter of intent)). Defendants also produced evidence that they partnered with Dr. Mir because of his experience, not because they wanted to misappropriate Plaintiff's technology. (*See, e.g.*, Tr. at 553:23-555:1 (Dr. Mir testifying as to his experience); Tr. at 673:5-674:23 (Dr. Oakes testifying as to Dr. Mir's wealth of experience); *see also* Tr. at 126:9-10 (Court reading to the jury stipulated fact that "Dr. Mir is widely recognized as an inventor and expert in the field of post-harvest technology"). And Defendants offered some evidence that they believed Dr. Mir owned the 1-MCP technology and was free to work with Defendants. (*See* Tr. at 590:2-17, 591:4-24, 594:15-20, 611:24-612:16, 671:7-16, 673:12-674:3 & 676:1-6 (Dr. Oakes testifying as to his "good faith" belief that Dr. Mir was free to work with Defendants and provide them with 1-MCP technology); Tr. at 724:7-21, 744:5-20, 745:9-16, 746:7-14, 747:4-748:14, 749:22-751:16, 752:1-19, 753:8-10 & 768:6-11 (Decco CEO testifying as to his belief in Dr. Mir's assurances that he was able to work with Defendants "free and clear").

The jury, however, also heard evidence that Defendants knew (or were recklessly indifferent to the fact) that their actions violated Plaintiff's rights.¹⁴ Both Dr. Oakes and Mr. Girin

¹⁴ Plaintiff's brief devotes a single paragraph (citing two exhibits and no testimony) to defending the jury's willfulness finding and then suggests that the Court scavenge for more support. (*See* D.I. 612 at 8 ("as set forth more fully in AgroFresh's Motion for Enhanced Damages and associated briefing and elsewhere in this brief")). Defendants engaged in similar cross-referencing in their own briefing. (*See infra* § III.H.2). The Court notes that

were aware, as of 2014, that Dr. Mir had a consulting agreement with Plaintiff. (*See, e.g.*, Tr. at 589:1-19; Tr. at 724:7-21). Neither had access to the agreement itself at the time and at least Mr. Girin made clear that he “absolutely” would not have requested to see Dr. Mir’s consulting agreements. (*See, e.g.*, Tr. at 724:7-725:1 (when asked whether he requested to see Dr. Mir’s consulting agreements with Plaintiff, Decco’s CEO said “[a]bsolutely not”). There is no evidence that Dr. Oakes asked to see the agreements or inquired about the terms. This suggests that Defendants were avoiding any meaningful investigation into Dr. Mir’s obligations to Plaintiff. Then, before TruPick’s launch in September 2016, Defendants were provided copies of portions of Dr. Mir’s agreements with Plaintiff, which set forth Dr. Mir’s obligations to Plaintiff and the scope of Plaintiff’s ownership rights in certain 1-MCP technology. (*See* Tr. at 738:16-24 (Decco CEO) & 771:17-772:1 (UPL general counsel)). Defendants made the decision to launch TruPick in September 2016 despite knowledge of Dr. Mir’s obligations to Plaintiff. (*See* Tr. at 740:4-7 & 771:17-772:11). Defendants make much of the fact that the agreements were not deemed “clear and unambiguous” until Judge Robinson issued her ruling (D.I. 597 at 11), but this is not dispositive. Given the above evidence, the jury could reasonably conclude that Defendants were at least recklessly indifferent to the rights of Plaintiff given that they knew Dr. Mir had obligations to Plaintiff but Defendants decided not to investigate the scope of those obligations.¹⁵

such tactics are unhelpful and largely ineffective, suggesting that arguments worth only a generic cross-reference (to an entire brief in some instances) are unimportant. Indeed, if the parties deem the effort of parsing through the record or their earlier submissions to identify support for their current positions unworthy, they can hardly expect the Court to do so. *See Hoffmann-La Roche Inc. v. Apotex Inc.*, 496 F. App’x 46, 52 (Fed. Cir. 2012) (“‘District judges are not archaeologists,’ and it was not the court’s burden to ‘excavate masses of papers in search of revealing tidbits’ to help Roche satisfy its burden . . .”).

¹⁵ Similarly, that Defendants pulled TruPick from the market after the court’s ruling in the first trial does not mean that their behavior prior to the ruling was innocent.

Moreover, the jury was also presented with evidence that Dr. Mir and Defendants were nervous about Dr. Mir's exposure and worried that Plaintiff would find out about Defendants' work with Dr. Mir. (*See, e.g.*, PTXa-24 ("One key consideration for meeting away from a Decco location was to protect [Dr. Mir] from exposure to more Decco folks (for now) than needed. Once AgroFresh learns of his work with Decco, they will certainly cut him off as a consultant even before [Essentiv] is formed."); *see also* PTXa-23 ("[Dr. Mir] is nervous that AgroFresh will learn about his work with Decco We definitely need [Dr. Mir] and his 1-MCP patents/technology so we don't want him to be tempted by the AF checkbook."); PTXa-26 ("[Dr. Mir] is becoming very nervous of his exposure. . . . Decco is also at risk.")). And the jury heard Defendants' admission that they undertook efforts to keep Dr. Mir's work with them a secret. (*See* Tr. at 127:9-10 (Court reading to the jury the stipulated fact that "Dr. Mir and Decco took pains to keep both the M-O-F technology and their relationship a secret from AgroFresh")). All this, coupled with the evidence set forth above that Defendants misappropriated some of Plaintiff's trade secrets through Dr. Mir (and others), reasonably supports a finding that Defendants were at least recklessly indifferent to Plaintiff's rights. There may be evidence to suggest Defendants attempted to respect Plaintiff's rights but assessing credibility and weighing evidence is squarely within the province of the jury. *See Lightning Lube*, 4 F.3d at 1166. There is substantial evidence to support the jury's finding of willful and malicious trade secret misappropriation.

B. Unfair Competition

The jury found that Defendants were liable for unfair competition (*see* D.I. 578 at 4), a common law claim that Plaintiff brought under Pennsylvania law. "[T]he Pennsylvania common law tort of unfair competition is coextensive with the definition set forth in the Restatement (Third) of Unfair Competition." *Giordano v. Claudio*, 714 F. Supp. 2d 508, 521 (E.D. Pa. 2010); *see also Acumed LLC v. Advanced Surgical Servs., Inc.*, 561 F.3d 199, 227 (3d Cir. 2009) (assuming

without deciding that Pennsylvania courts would follow the Restatement (Third) of Unfair Competition). To prove unfair competition, Plaintiff must show that (1) Defendants caused harm to the commercial relations of Plaintiff by engaging in a business or trade, (2) the harm resulted from acts or practices by Defendants relating to trade secret misappropriation, other acts or practices by Defendants determined to be actionable as an unfair method of competition (taking into account the nature of the conduct and its likely effect on Plaintiff and the public), or other acts or practices by Defendants determined to be unlawful.¹⁶ See Restatement (Third) of Unfair Competition § 1; see also *Acumed*, 561 F.3d at 227; *Giordano*, 714 F. Supp. 2d at 521.

Defendants move for judgment as a matter of law of no unfair competition, arguing that there is “no evidence of any unlawful conduct by Defendants” and, instead, the evidence at trial shows Defendants “engaged in lawful competition” through sales of a product to their own existing customers pursuant to a license that Defendants believed to be valid. (D.I. 597 at 12). Defendants also argue that there was no substantial evidence of harm to Plaintiff’s commercial relations. (*Id.*). The Court disagrees.

As to unlawful conduct by Defendants, the jury was presented with substantial evidence that Defendants misappropriated at least some trade secrets held by Plaintiff. (*See supra* § III.A). Trade secret misappropriation is one type of unlawful conduct that may give rise to a claim of unfair competition. See Restatement (Third) of Unfair Competition § 1(a)(3). This is alone would be sufficient evidence that Defendants committed “unlawful conduct” within the meaning of unfair competition. In addition, Plaintiff also introduced evidence that Defendants were aware of Dr.

¹⁶ The instructions given to the jury were modeled on the Restatement (Third) of Unfair Competition. (*See* D.I. 575 at 21).

Mir's consultancy with Plaintiff, that Defendants needed his knowledge and attempted to conceal their own work with Dr. Mir. (*See, e.g.*, PTXa-24; PTXa-23; PTXa-26).

Defendants did introduce evidence to support their contention that they were engaging in "lawful competition." (*See, e.g.*, Tr. at 1048:21-1050:1 (Decco employee testifying that AgroFresh's customers were well known); Tr. at 1060:9-1061:9 (Decco customers could possibly qualify for discount based on total sales); Tr. at 1062:10-1063:7 (pricing below AgroFresh was not designed to destroy AgroFresh price market); *see also* Tr. at 611:24-612:16, 630:22-631:4 & 633:6-634:1 (Dr. Oakes testifying that Dr. Mir would provide assurances he was fulfilling all his obligations to AgroFresh, that some TruPick customer calls were made to previous Decco customers and that Decco would not sell to AgroFresh customers if it violated the AgroFresh contract); DTXb-974 (Decco email stating that there are very few customers in the West who do not do business with Decco)). And Defendants presented evidence as to their belief that they were doing business pursuant to a "valid" license with MirTech. (*See* DTXb-493 (license agreement); *see also* Tr. at 743:11-753:15 (Decco CEO testifying that Dr. Mir represented he was bringing technology "free and clear" and it was important for Defendants to have a license agreement related to the technology)). Presented with evidence of both unlawful and lawful conduct, the jury was entitled to make credibility determinations and weigh the evidence to reach the conclusion that Defendants engaged in "unlawful conduct" as required for Plaintiff's unfair competition claim. The Court will not disturb that.

As to harm to Plaintiff's commercial relations, Defendants argue that there is no substantial evidence to support the jury finding that Defendants caused the harm as opposed to competitive harm by other parties (*e.g.*, Pace). (D.I. 597 at 12). Specifically, Defendants assert that the jury was provided with evidence that Pace's FYSIUM product captured more of the 1-MCP market

than Defendants' TruPick product. (*Id.*; *see also* Tr. at 1208:11-1210:2 (Defendants' financial expert testifying that FYSIUM captured 14% of the market in 2016 compared to TruPick capturing 1%); Tr. at 810:2-815:12 (AgroFresh employee from 2007 to end of 2016 testifying that AgroFresh expected competition – including from Pace – after the main 1-MCP patent expired in 2014); Tr. at 761:22-762:13 (Decco CEO testifying that Defendants' product represented 1% of the market in 2016 and 0% (no sales) in 2017)). The jury, however, also heard evidence that Pace's effect on the market was minimal and that Plaintiff's customers were willing to pay more for Plaintiff's product than Pace's. (*See* Tr. at 792:4-19, 792:21-793:15, 793:19-25 & 794:24-794:4 (Pace's entry in 2015 had "very minimal" effect on market, AgroFresh had a "strong following in the market," FYSIUM product took longer to apply and customer surveys showed minimal risk in losing customers to FYSIUM); *see also* PTXb-442). And Plaintiff adduced evidence that the TruPick product changed the market and caused harm to Plaintiff's business relations as a result. (*See, e.g.*, Tr. at 802:1-804:12). There was also evidence that Defendants were attempting to undercut Plaintiff's pricing and disrupt or prevent long-term contracts with Plaintiff. (*See* PTXb-353; PTXb-305 & PTXb-309; *see also* Tr. at 941:1-12 & 942:23-18 (Plaintiff's financial expert testifying on market disruption from TruPick pricing)). And Plaintiff presented some evidence that that harm continued even after TruPick left the market. (*See* Tr. at 807:18-23; Tr. at 870:1-8; Tr. at 945:17-946:10). Based on this evidence, the jury could reasonably infer that Defendants' unlawful conduct (and resultant TruPick launch) caused harm to Plaintiff's commercial relations. The Court will not disturb that finding either.

Because substantial evidence supports the jury's findings, the Court will deny Defendants' motion as it relates to unfair competition.

C. Intentional Interference with Customer Contracts

The jury found that Defendants were liable for intentionally interfering with Plaintiff's existing customer contracts (*see* D.I. 578 at 4), another common law claim brought under Pennsylvania law. To prove intentional interference with its customer contract's, Plaintiff must prove: (1) a contractual relationship existed between Plaintiff and customer, (2) purposeful action by Defendants specifically intended to harm the contractual relationship, (3) there was no privilege or justification on the part of Defendants and (4) Defendants' conduct harmed Plaintiff. *See Burton v. Teleflex Inc.*, 707 F.3d 417, 433 (3d Cir. 2013).

Defendants assert the jury's finding of liability cannot stand for two reasons. First, according to Defendants, Plaintiff failed to prove the existence of a contractual relationship because it never identified any specific existing contract that Defendants interfered with. (D.I. 597 at 13). Second, Defendants argue that Plaintiff failed to prove that Defendants specifically intended to harm any customer contractual relationship. (*Id.*)¹⁷ The Court disagrees.

As an initial matter, Plaintiff offered evidence that it had contractual relationships with its 1-MCP customers. (*See, e.g.*, Tr. at 799:1-4 (former AgroFresh commercial manager and later vice president testifying that "[AgroFresh] had a contract with every customer every year that we [did] business with. Sometimes they were multi-year contract[s]"); *see also* PTXb-1067, PTXb-1069, PTXb-1071, PTXb-1073, PTXb-1075, PTXb-1077, PTXb-1080, PTXb-1082, PTXb-1084 & PTXb-1085 (contracts between Plaintiff and different customers for 2016 season and relating to Plaintiff's SmartFresh product)). The jury was also presented with evidence that, during the 2016 season, Defendants sold their 1-MCP TruPick product to some of these customers. (*See* DTXb-

¹⁷ Defendants do not challenge the sufficiency of the evidence as to the other elements of Plaintiff's claim of intentional interference with customer contracts.

512; *see also* Tr. at 1019:9-1020:12 (explaining that DTXb-512 represents 2016 season sales)). For example, one of those contracts is between Plaintiff and a customer named Broetje Orchards, and that customer also appears as a customer that purchased Decco's 1-MCP product in the 2016 season. (*Compare* PTXb-1069 at AF00051347, *with* DTXb-512). Indeed, a comparison of Plaintiff's customer contracts for the 2016 season and DTXb-512 shows there is overlap between Plaintiff's customers and those Defendants were targeting for TruPick. And Plaintiff did offer some evidence that it was forced to renegotiate terms of its yearly contracts to address TruPick's presence in the marketplace. (*See, e.g.*, Tr. at 802:15-804:12). Based on this evidence, the jury could reasonably infer that Plaintiff had contractual relationships with its 1-MCP customers that Defendants interfered with.

The Court also rejects Defendants' argument that there was insubstantial evidence to support the jury finding that Defendants specifically intended to harm Plaintiff's existing customer contracts. Plaintiff introduced evidence that Defendants targeted "exclusive AgroFresh customers" with substantially discounted pricing for their TruPick product and, further, that Defendants were aware customers were subject to contracts with Plaintiff. (*See, e.g.*, PTXb-305 "AgroFresh will respond to the threat from Decco now that they are aware of our TruPick® registration. . . . (we know some customers already have 3 to 7-year contracts) . . . [W]e should make a special effort to contact . . . all exclusive AgroFresh customers."); PTXb-309 ("[T]he Decco team has started to contact the 21-customers on the WA customer contact list to make [sic] provide our proposal of purchasing 3 to 5-rooms this season with an expected 15% to 25% discount."); PTXb-1089 (Decco salesperson discussing discounted pricing given to a customer because "these people had solid contracts with Agrofresh already in place that required them to treat 100% of their forecasted rooms . . . [and] [i]t was like squeezing blood from a rock to get the

rooms [we] did”); *see also* PTXa-31; PTXb-346; PTXb-353; Tr. at 1067:19-24 (Decco had no 1-MCP customers before TruPick, suggesting that none of the targeted customers came from Decco’s own customer base)). From this evidence, the jury could reasonably infer that Defendants did, in fact, specifically intend to harm contractual relationships between Plaintiff and its existing customers. To the extent that Defendants argue there was countervailing evidence of legitimate business reasons for Defendants to approach Plaintiff’s customers or evidence that Defendants would not sell to a customer if doing so “violated the[ir] contract” (Tr. at 632:22-634:2), the jury was entitled to give whatever weight it deemed appropriate to that evidence.¹⁸ The Court will not reweigh the evidence. Defendants’ motion for judgment as a matter of law of no intentional interference with Plaintiff’s customer contracts will be denied.

D. Intentional Interference with the MirTech Agreements and Business Relationship

The jury also found that Defendants were liable for intentionally interfering with the MirTech agreements and business relationship (between Plaintiff and the MirTech Defendants). (*See* D.I. 578 at 4). This claim, also brought under Pennsylvania law, requires proof of the same elements discussed in the preceding section. (*See supra* § III.C). Here, Defendants argue that there was not substantial evidence to support the jury finding that Plaintiff suffered actual damage resulting from Defendants’ conduct. (D.I. 597 at 14). Rather, in Defendants’ view, the evidence at trial showed Plaintiff was already moving away from its relationship and “there is no evidence that AgroFresh lost any benefits of the MirTech agreements.” (*Id.*).

¹⁸ To the extent Defendants assert there was justification for its conduct, there was similarly evidence that Defendants engaged in wrongful means – *e.g.*, converting confidential information relating to the ’216 Patent (*see infra*). *See Acumed LLC v. Advanced Surgical Servs., Inc.*, 561 F.3d 199, 215 (3d Cir. 2009) (as necessary part of the “absence of justification” requirement, defendant’s conduct must be considered “wrongful means,” which is interpreted to mean “conduct that was actionable on a basis independent of the interference claim”).

Defendants offer almost no evidence to support their argument. Defendants first point to testimony from an AgroFresh employee who purportedly said that the company was “transitioning away from Dr. Mir.” (*Id.* (quoting Tr. at 1072:20-1074:3)). But the employee was also asked if there was any effort “at AgroFresh to wean itself off reliance on Dr. Mir” and the witness testified that he did not know. (Tr. at 1073:16-21). Defendants then cite to Dr. Oakes’s testimony that Dr. Mir said he was fulfilling his obligations to Plaintiff to suggest there was no actual harm, but this testimony is clearly hearsay. (*See* D.I. 597 at 14 (quoting Tr. at 612:4-16)). This is the sum total of the evidence offered by Defendants to overturn the jury verdict. Defendants bear the burden of demonstrating that substantial evidence does not support the jury’s finding and the Court doubts that this barebones showing satisfies that burden, particularly where the Court is to view the evidence in the light most favorable to Plaintiff.

Plaintiff’s response, however, is similarly unhelpful. (*See* D.I. 612 at 15). Plaintiff, like Defendants, offers mostly attorney argument untethered to the elements of the cause of action. Nevertheless, the Court will not disturb the jury’s finding. Plaintiff’s agreements and business relationship with the MirTech Defendants included, *inter alia*, assignment, confidentiality and non-compete provisions. (*See* PTXa-82; PTXa-83). And the jury heard Dr. Mir admit that he misappropriated trade secrets, that he tortiously interfered with Plaintiff’s contracts, etc. (*See, e.g.*, Tr. at 551:11-23). A reasonable inference from this evidence is that Dr. Mir was not, in fact, fulfilling his contractual obligations to Plaintiff despite his purported representations to the contrary to Defendants. Plaintiff was deprived of benefits that it bargained for in contracting with Dr. Mir (*e.g.*, that Plaintiff’s information would be kept confidential). The jury also heard evidence regarding the financial harm that resulted from the launch of TruPick, which employed misappropriated trade secrets (that Dr. Mir admitted to misappropriating). A reasonable inference

from this is that Defendants' interference with the MirTech agreements and business relationship did, in fact, cause Plaintiff harm. Thus, there was substantial evidence to support a finding that Plaintiff suffered actual harm from the loss of the MirTech agreements and business relationship. Defendants' motion for judgment as a matter of law of no intentional interference with the MirTech Agreements and business relationship will be denied.

E. Civil Conspiracy

The jury also found that Defendants engaged in civil conspiracy. (D.I. 578 at 5). To prove civil conspiracy under Pennsylvania law, Plaintiff must show: (1) a combination of two or more persons acting with a common purpose to do an unlawful act or to do a lawful act by unlawful means or for an unlawful purpose; (2) an overt act done in pursuance of the common purpose; (3) malice (*i.e.*, an intent to injure); and (4) actual damage to Plaintiff caused by the conspiracy. *See Thompson Coal Co. v. Pike Coal Co.*, 412 A.2d 466, 472 (Pa. 1979).

Defendants argue that the jury's verdict of civil conspiracy must fall because there is not substantial evidence that Defendants acted with "malice" as required under Pennsylvania law. (D.I. 597 at 14-15). According to Defendants, "malice" requires that the Defendants acted with the "sole purpose" of injuring Plaintiff and there was insubstantial evidence for the jury to conclude that they acted with the sole purpose of injuring Plaintiff instead of legitimate business reasons. (*Id.*). Defendants also argue that there was insubstantial evidence that Defendants and Dr. Mir acted with a common purpose to commit an unlawful act with an understanding that the other had that same purpose. (*Id.* at 15).

One of the leading cases on civil conspiracy under Pennsylvania law supports Defendants' position. "Proof of malice, *i.e.*, an intent to injure, is essential in proof of a conspiracy. This unlawful intent must be absent justification." *Thompson Coal Co. v. Pike Coal Co.*, 412 A.2d 466,

472 (Pa. 1979); *see also id.* (“There are no facts of record which indicate that Johnston acted solely to injure appellants. To the contrary, there are many facts which indicate that Johnston acted solely to advance the legitimate business interests of his client and to advance his own interests.”). Many other cases have relied on *Thompson Coal* to find that civil conspiracy under Pennsylvania law requires evidence that the co-conspirators acted with the sole purpose of harming the plaintiff. *See, e.g., DePuy Synthes Sales, Inc. v. Globus Med., Inc.*, 259 F. Supp. 3d 225, 248 (E.D. Pa. 2017) (“[A] showing that a person acted for professional reasons, and not solely to injure the plaintiff, negates a finding of malice.”); *Arsenal, Inc. v. Ammons*, No. 14-1289, 2014 WL 6771673, at *4 (E.D. Pa. Dec. 2, 2014) (“Under Pennsylvania law, a defendant acts with malice only when the sole purpose of the agreement is to injure the plaintiff.”); *see also Liberty Mut. Ins. Co. v. Gemma*, 301 F. Supp. 3d 523, 544-45 (W.D. Pa. 2018); *Spear v. Fenkell*, No. 13-2391, 2016 WL 5661720, at *55-56 (E.D. Pa. Sept. 30, 2016), *clarified on denial of reconsideration*, 2016 WL 7475814 (E.D. Pa. Dec. 29, 2016); *Sarpolis v. Tereshko*, 26 F. Supp. 3d 407, 423-24 (E.D. Pa. 2014), *aff’d*, 625 F. App’x 594 (3d Cir. 2016).

In its brief, Plaintiff did not dispute the law of civil conspiracy in Pennsylvania. (*See* D.I. 612 at 16). In fact, Plaintiff’s response is limited to three sentences, citing only Dr. Mir’s trial testimony referring to his consent judgment. (*Id.*). Given the substantial evidence in the record of Defendants pursuing a business interest in the TruPick product, the Court finds that there is not substantial evidence to support a finding that Defendants acted with the *sole* purpose of injuring Plaintiff. (*See, e.g.,* DTX-291 (October 2015 email from Dr. Oakes saying “Let’s make money as fast as possible”); Tr. at 658:20-25; Tr. at 1057:21-24 (Decco employee, Mr. Mowry, testifying that TruPick fit into Decco’s storage product portfolio); PTXa-172 (commercial 1-MCP formulation was a top-5 priority for Decco in fiscal year 2016); PTXb-606 (commercial 1-MCP

formulation on Decco research and development wish list in October 2014); Tr. at 742:2-743:17 (Decco CEO testifying that Decco was interested in 1-MCP technologies as far back as 2008 and began investing in the technology in 2014); PTXa-143 (“The goal of [Essentiv] has to create value that both MirTech and Decco can enjoy in the coming years.”)). Therefore, the Court will grant judgment as a matter of law of no civil conspiracy in favor of Defendants.

F. Conversion

The jury found Defendants liable for conversion. (D.I. 578 at 5). Plaintiff’s conversion claim against Defendants was based on conversion of the “confidential, non-trade secret information disclosed” in the ’216 Patent. (D.I. 575 at 26). Under Pennsylvania law, conversion is defined the deprivation of another’s possession, use or right to use its property without the owner’s consent and without legal justification. *See Universal Premium Acceptance Corp. v. York Bank & Tr. Co.*, 69 F.3d 695, 704 (3d Cir. 1995). Pennsylvania courts recognize a cause of action for conversion of confidential information, but “[a] viable claim of conversion of confidential business information must allege that the defendant acquired the information through misconduct.” *Hill v. Best Med. Int’l, Inc.*, No. 07-1709, 2011 WL 5082208, at *15 (W.D. Pa. Oct. 25, 2011). To prevail on its conversion claim, Plaintiff must prove that Defendants procured confidential information in the ’216 Patent by improper means and for the purpose of advancing a rival business interest and, further, that harm to Plaintiff resulted from Defendants’ possession, disclosure or use of that information. *See* Restatement (Second) of Torts § 759; *see also Hill*, No. 07-1709, 2011 WL 5082208, at *15 (Pennsylvania follows the Restatement (Second) of Torts for conversion of confidential business information).

Defendants argue that there was insubstantial evidence to support the jury’s finding of conversion because Plaintiff failed to prove that the information in the ’216 Patent was confidential

(at the time of conversion).¹⁹ (*See* D.I. 597 at 15-16). In Defendants' view, Plaintiff was focused at trial on proving that the '216 Patent information was a trade secret, not simply confidential information, and therefore the jury does not have substantial evidence of the '216 Patent information being confidential at the time of conversion. (*Id.*; *see also* D.I. 616 at 6-7). That Plaintiff failed to prove that the information in the '216 Patent rose to the level of trade secret does not, however, necessarily mean that Plaintiff failed to prove that information was confidential. The jury could have found that Plaintiff failed to prove the '216 Patent information was a trade secret for any number of reasons – *e.g.*, because Plaintiff failed to prove that the information derived independent economic value.

Moreover, Plaintiff's patent expert, Dr. Walton, testified that the certain aspects of the claimed invention and examples ultimately set forth in the '216 Patent were not generally known or readily ascertainable before disclosed in the patent. (*See, e.g.*, Tr. at 317:13-341:18). Plaintiff also cites the Decco letter of intent with MirTech, which suggests that information in the application that led to the '216 Patent was confidential. (DTXb-680 at DECCO-364). Defendants offered evidence suggesting that the disclosed information was generally known or ascertainable. (*See, e.g.*, Tr. at 373:4-375:19 & 411:15-416:6; Tr. at 1143:15-1149:16; Tr. at 1184:4-1185:9). Based on this competing testimony, the jury could reasonably find that certain information in the '216 Patent was confidential at the time of conversion. The Court declines to make credibility determinations or weigh the evidence. *See Lightning Lube*, 4 F.3d at 1166. Because substantial

¹⁹ Defendants do not challenge any other element of Plaintiff's conversion claim – *i.e.*, the sole basis for the request for judgment as a matter of law is that Plaintiff failed to prove it possessed confidential information in the '216 Patent. Although somewhat counterintuitive because a patent is at issue, the basis for Plaintiff's claim is that its confidential information was taken and incorporated into the '216 Patent without Plaintiff's consent.

evidence supports Plaintiff's claim of conversion, Defendants' motion for judgment as a matter of law of no conversion will be denied.

G. Patent Infringement and Validity

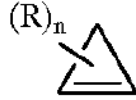
The jury found that Decco willfully infringed claim 1 of the '849 Patent and that claim 1 was not invalid.²⁰ (*See* D.I. 578 at 6). Defendants move for judgment as a matter of law that Decco did not infringe claim 1 of the '849 Patent, that any purported infringement was not willful and, further, that claim 1 is invalid as anticipated and as indefinite under 35 U.S.C. § 112. (*See* D.I. 597 at 5-9).

Starting with infringement of claim 1, the only infringement theory at issue is doctrine of equivalents. An accused device that does not literally infringe may still infringe under the doctrine of equivalents "if there is 'equivalence' between the elements of the accused product or process and the claimed elements of the patented invention." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997). Analysis under the doctrine of equivalents follows one of two tests endorsed by the Supreme Court – insubstantial differences or function-way-result – both of which are performed on an element-by-element basis. The insubstantial differences test asks whether the element in the accused product performs a substantially different role than the claimed element, and the function-way-result test evaluates whether the element in the accused product performs substantially the same function, in substantially the same way, to achieve substantially the same result as the claimed element. *Id.* at 39-40.

Claim 1 of the '849 Patent recites:

A complex formed from a molecular encapsulation agent and a compound having the following structure

²⁰ Only Decco was accused of infringement and only direct infringement was at issue when the case was submitted to the jury. (*See* Tr. at 1001:5-16).



wherein n is a number from 1 to 4 and R is selected from the group consisting of hydrogen, saturated or unsaturated C1 to C4 alkyl, hydroxy, halogen, C1 to C4 alkoxy, amino and carboxy.

(’849 Patent at Claim 1). Plaintiff’s expert testified that Decco’s TruPick product met each and every limitation of claim 1. (*See* Tr. at 344:21-358:12; *see also id.* at Tr. at 342:2-20 (TruPick uses 1-MCP as active ingredient, which is compound having formula depicted in claim with R being a methyl group (*i.e.*, C1 alkyl)); Tr. at 352:12-357:20 (TruPick uses magnesium formate, which is equivalent to the claimed molecular encapsulation agent); Tr. at 358:1-8 (TruPick contains a complex formed between the 1-MCP and molecular encapsulation agent magnesium formate); PTXa-453 (’849 Patent); PTXb-298 (TruPick label); PTXb-295 (confidential statement of TruPick formula); PTXb-292 (manufacturing process for TruPick)). As to the “molecular encapsulation agent,” Plaintiff’s expert testified that TruPick’s magnesium formate MOF was equivalent under both the function-way-result and insubstantial differences tests. (*See* Tr. at 354:14-357:12 (function-way-result); Tr. at 357:13-20 (insubstantial differences)). Based on this evidence, the jury found that Decco’s TruPick product infringed claim 1 under the doctrine of equivalents.

Defendants do not dispute the substance of the jury’s determination. Instead, they argue that the verdict of infringement cannot stand because the range of equivalents asserted for the “molecular encapsulation agent” in claim 1 ensnares the prior art, specifically U.S. Patent No. 5,518,988 to Sisler.²¹ (D.I. 597 at 16-17; *see also* DTXb-563 (hereinafter cited as “Sisler”)). A

²¹ Defendants’ argument for non-infringement is limited to the ensnarement defense – *i.e.*, if claim 1 of the ’849 Patent covers the accused TruPick product, then that claim ensnares the Sisler patent. (*See* D.I. 597 at 16-17).

doctrine of equivalents theory cannot prevail if the range of equivalents asserted will encompass or “ensnare” the prior art. *See G. David Jang, M.D. v. Boston Scientific Corp.*, 872 F.3d 1275, 1285 (Fed. Cir. 2017). “This limitation is imposed even if a jury has found equivalence as to each claim element.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1323 (Fed. Cir. 2009). “[E]nsnarement, like prosecution history estoppel, is a legal limitation on the doctrine of equivalents to be decided by the court, not a jury.” *Id.* at 1322.

Plaintiff argues that Defendants waived ensnarement as a defense. The Court disagrees. Defendants raised ensnarement in the Pretrial Order and pursued it at trial. (*See* D.I. 519, Ex. 9 ¶ 12; *see also* Tr. at 369:18-372:22 (cross-examining Plaintiff’s patent expert on ensnaring the Sisler patent); Tr. at 1175:14-1176:17 (Defendants’ patent expert testifying that the asserted range of equivalents would capture Sisler)). Indeed, at trial, Plaintiff not only did not object to Defendants’ questions relating to ensnarement, but Plaintiff also attempted to introduce rebuttal testimony. (*See* Tr. at 425:6-426:2).

As to the merits of ensnarement, the Court notes that a “[h]ypothetical claim analysis is a practical method to determine whether an equivalent would impermissibly ensnare the prior art.” *Intendis GmbH v. Glenmark Pharm. Inc., USA*, 822 F.3d 1355, 1363 (Fed. Cir. 2016). Under this analysis, a hypothetical claim is crafted that literally reads on the accused device and the Court must determine whether that hypothetical claim would be patentable over prior art introduced by the accused infringer. *See Ultra-Tex Surfaces, Inc. v. Hill Bros. Chem. Co.*, 204 F.3d 1360, 1365 (Fed. Cir. 2000). It is the accused infringer’s burden to come forward with prior art, but it is the patentee’s burden to propose a properly drafted hypothetical claim and to prove that that claim is patentable over the prior art. *See Interactive Pictures Corp. v. Infinite Pictures, Inc.*, 274 F.3d 1371, 1380 (Fed. Cir. 2001); *see also Jang*, 872 F.3d at 1287 (“A patentee . . . bears the burden of

proving that it is entitled to ‘the range of equivalents which it seeks.’ And, when utilizing the hypothetical claim tool, that burden starts with proposing a proper hypothetical claim that only broadens the issued asserted claims.” (quoting *Wilson Sporting Goods Co. v. David Geoffrey & Assocs.*, 904 F.2d 677, 685 (Fed. Cir. 1990))). Here, Plaintiff does not propose a hypothetical claim and the Court will not draft one to remedy Plaintiff’s failure. *See Jang*, 872 F.3d at 1287 (“[T]he district court was under no obligation to undertake a hypothetical claim analysis on [the patentee’s] behalf.”).

The Court is aware, however, that courts are not constrained to a hypothetical claim analysis. *See Jang*, 872 F.3d at 1285 n.4. Although the Court has found no specific guidance on how to conduct an ensnarement analysis without the benefit of a hypothetical claim, it will attempt to do so based on the available record²² and mindful of the tenet that, “since prior art always limits what an inventor could have claimed, it limits the range of permissible equivalents of a claim.” *Wilson Sporting Goods*, 904 F.2d at 684. Regardless of the ensnarement analysis, the accused infringer has the burden of coming forward with prior art but ultimately the burden rests with the patentee to prove that it is entitled to “the range of equivalents which it seeks.” *Id.* at 685. As discussed below, the Court finds that Defendants have met their burden by identifying and pointing to disclosures in the prior art (*i.e.*, *Sisler*), but Plaintiff has failed to satisfy its burden.

In arguing against ensnarement in its post-trial papers, Plaintiff did not address the scope of the asserted range of equivalents for the “molecular encapsulation agent.” The Court, however, has the testimony of Plaintiff’s infringement expert and, as Defendants correctly point out, the range of equivalents for the “molecular encapsulation agent” asserted is broad – *i.e.*, any carrier

²² No party requested that the Court conduct separate or additional proceedings to hear argument or receive further evidence on the issue of ensnarement.

that stabilizes 1-MCP through adsorption. (See Tr. at 354:12-24 & 355:2-356:22). Defendants argue that this range of equivalents ensnares Sisler, a patent that issued on May 21, 1996 and is titled “Method of Counteracting an Ethylene Response in Plants.” Sisler discloses and claims the use of cyclopropene and “derivatives thereof” to inhibit ethylene responses in plants. (Sisler at 1:11-14; see also *id.* at Claim 1). Sisler discloses use of 1-MCP as an ethylene-response inhibitor according to its claimed invention. (See, e.g., *id.* at Examples 3-9, 11 & 12; see also *id.* at Claim 35). Sisler also discloses that the active compound (e.g., 1-MCP) may be applied to plants alone or “in combination with inert carriers.” (*Id.* at 4:52; see also *id.* at 4:56 (“Alternatively, the compound may be applied with a[n] inert carrier.”)). Sisler then lists a number of “adjuvants or carriers” that can be used, such as talc, diatomaceous earth, etc. (*Id.* at 5:14-20). The issue here is whether Sisler, with its disclosure of these carriers, is ensnared by the range of equivalents Plaintiff asserts for “molecular encapsulation agent.”

Defendants’ patent expert, Dr. Dincă, testified that the range of equivalents for the claimed “molecular encapsulation agents” would capture Sisler. (See Tr. at 1175:14-1176:17). And Defendants elicited testimony from Plaintiff’s expert that suggests some of the carriers in Sisler would adsorb to 1-MCP. (See Tr. at 369:18-372:17).²³ This is significant because Plaintiff’s

²³ The parties dispute whether Dr. Walton testified that diatomaceous earth was an “old-fashioned absorbant” or an “old-fashioned adsorbant.” (Compare D.I. at 597 at 16-17, with D.I. 612 at 17). The Court acknowledges that the transcript reads “absorbant” (Tr. at 371:2-7), but the Court doubts that that is what Dr. Walton testified. Immediately after characterizing diatomaceous earth as an “old-fashioned absorbant,” she agreed that “the molecules would *stick* to it.” (Tr. at 371:5-7 (emphasis added)). Dr. Walton had previously explained the differences between absorption and adsorption: “Absorption is when you think of soaking something up with a sponge. *Adsorption is more like when the molecules can come stick* to a surface, so they adhere to adhere to the surface.” (Tr. at 302:16-19 (emphasis added)). In fact, Dr. Walton consistently characterized adsorption as molecules “sticking” to a surface. (See, e.g., Tr. at 303:19-21, 328:6-9 & 358:4-13). Thus, although not necessary to reach the conclusion here, the Court believes that Dr. Walton’s testimony

expert asserted equivalency based on the ability of a compound to stabilize 1-MCP through adsorption. (Tr. at 354:14-356:22). Although Plaintiff's expert testified that she did not know if the carriers in Sisler would work (Tr. at 372:13-17), that testimony was conclusory and she did not offer evidence that the disclosed carriers would fail to adsorb to 1-MCP.

Plaintiff argues that its expert explained that the carriers disclosed in Sisler are not the same "molecular encapsulation agents" disclosed in the '849 Patent. (See D.I. 612 at 17 (quoting Tr. at 425:13-426:3); see also Tr. at 425:13-16 ("Q. All right. So that list of compounds [in Sisler], does it include any of the molecular encapsulation agents listed in AgroFresh's '849 Daly patent? A. No, it doesn't."); Tr. at 1252:3-1253:2). That Sisler does not disclose the same 1-MCP carriers as "molecular encapsulation agents" disclosed in the '849 Patent, however, is not the relevant inquiry. The Court must determine whether Plaintiff is entitled to its asserted range of equivalents in light of the prior art – not whether the *disclosure* of the '849 Patent can be found in Sisler.

Plaintiff also points to its expert's testimony on redirect where she attempted to explain that the Sisler carriers "wouldn't have the special kind of chemical interactions [as in the '849 Patent] anyway. They also don't disclose how they would even mimic the molecules with these, like, diatomaceous earth. And a lot of these are natural substances. Wheat flour. Yes. They're not the same structure wise." (Tr. at 425:22-426:1). But she went no further. She did not explain how the structure of the range of equivalents for the '849 Patent's "molecular encapsulation agent" was different from the structure of the Sisler carriers, and she likewise did not explain how the chemical interactions between Sisler carriers and 1-MCP differ from those between 1-MCP and the range of equivalents she had articulated in her analysis of infringement by TruPick. Left with

is more properly understood as an admission that diatomaceous earth is an adsorbent because she agreed that molecules will "stick" to it.

this record, the Court cannot conclude that Plaintiff has proven that its asserted range of equivalents does not ensnare the Sisler prior art. Stated differently, Plaintiff failed to prove that the invention in claim 1 of the '849 Patent would be patentable over Sisler if the range of equivalents for “molecular encapsulation agent” is a carrier that stabilizes 1-MCP through adsorption, as Plaintiff’s expert testified.²⁴

Thus, based on the record and attentive to the parties’ burdens, the Court finds that Plaintiff failed to prove that its asserted range of equivalents does not ensnare the Sisler prior art. The jury’s finding of infringement under the doctrine of equivalents therefore cannot stand and will be vacated. And because the finding of infringement must be vacated, the jury’s finding of willful infringement must also be vacated. The Court declines to address Defendants’ separate arguments as to willfulness.

Turning to invalidity, Defendants have not asserted counterclaims of invalidity for claim 1 of the '849 Patent. Invalidity was raised only as an affirmative defense to infringement. (*See* D.I. 418 (UPL’s Answer); D.I. 419 (Decco’s Answer)). In light of the finding of no infringement, the affirmative defenses of invalidity are now moot and the Court declines to reach the issue of validity.²⁵ *See Cardinal Chem. Co. v. Morton Int’l, Inc.*, 508 U.S. 83, 93-94 (1993) (“An unnecessary ruling on an affirmative defense is not the same as the necessary resolution of a counterclaim for a declaratory judgment.”); *see also Cave Consulting Grp., LLC v. OptumInsight, Inc.*, 725 F. App’x 988, 992 (Fed. Cir. 2018) (declining to reach invalidity issues after finding no

²⁴ In a hypothetical claim analysis, the Court evaluates whether that claim would be patentable over the prior art (*e.g.*, under §§ 102 or 103). *See Interactive Pictures*, 274 F.3d at 1380. The Court sees no reason why the analysis would be different if there is no hypothetical claim and Plaintiff does not dispute that Sisler discloses the other elements of claim 1 of the '849 Patent.

²⁵ And any amended judgment following this opinion shall contain no reference to validity of the '849 Patent. *See Elec. Fittings Corp. v. Thomas & Betts Co.*, 307 U.S. 241 (1939).

infringement “because the issue of invalidity under § 102(b) and (g) were raised only as affirmative defenses and because neither party is seeking an adjudication on those issues in case of a finding of noninfringement”); *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1366 (Fed. Cir. 2004) (“Because Birchwood raised invalidity only as an affirmative defense and not as a counterclaim, it became unnecessary for the court to enter a judgment as to the invalidity issue when the court entered judgment of noninfringement with respect to the ’460 patent.”), *overruled on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

H. Damages

Defendants argue that the jury award for compensatory damages is not supported by substantial evidence and, for the punitive damages award, that it violates the Fourteenth Amendment. (*See* D.I. 597 at 20-27). The Court addresses these challenges below. But first, the Court addresses damages in light of its decision to grant judgment as a matter of law on Plaintiff’s testing protocols trade secret, conspiracy and patent infringement claims.

1. Impact of the Court’s Rulings

The \$6,000,000 in compensatory damages for Plaintiff’s actual loss was based on alternative theories of liability with any one sufficient to sustain the damages award. (*See, e.g.*, D.I. 578 at 7, D.I. 575 at 39; *see also* Tr. at 998:9-999:1, 999:15-1000:14 & 1002:2-1003:12 (discussion and eventual agreement to limit jury to one award for actual-loss compensatory damages based on a finding of liability for any of the tort claims (or combination thereof)); D.I. 525, Ex. B at 20 (Defendants’ proposed verdict sheet including all theories of liability together in one compensatory damages request)). Similarly, the \$1,013,000 in unjust enrichment damages was based on alternative theories of trade secret liability with any one sufficient to sustain the

damages award.²⁶ Thus, the Court’s grant of judgment as a matter of law on some, but not all, theories of liability supporting the awards for actual loss and unjust enrichment has no effect on the amount of those awards. (*See* D.I. 578 at 7 (Question Nos. 14 & 15)). Defendants have not argued otherwise.

2. Compensatory Damages for Plaintiff’s Actual Loss (\$6,000,000)

Defendants argue that the \$6,000,000 compensatory award is not supported by substantial evidence “either as to lost profits or damages for conversion.” (D.I. 597 at 20; *see also* D.I. 578 at 7 (jury awarding \$6,000,000 for actual loss caused by Defendants’ actions)). Defendants’ first argument – on lost profits – is that Plaintiff failed to prove that it was entitled to lost profits because there was insufficient evidence on two *Panduit* factors. (D.I. 597 at 20 (Plaintiff’s expert purportedly did not demonstrate absence of non-infringing alternatives or that Plaintiff had manufacturing capacity for lost sales)). Defendants’ *Panduit*-related arguments are tailored to the patent-infringement issues – *e.g.*, absence of non-infringing alternatives – and Defendants do separately not apply *Panduit* to the trade secret claims.²⁷ As explained above, Defendants are

²⁶ The jury was instructed to assess unjust enrichment damages under alternate claims of trade secret misappropriation. (*See* D.I. 578 at 7 (“Compensatory Damages – Unjust Enrichment (Trade Secrets Only) . . . If you answered ‘YES’ to *any part* of question 2, did AgroFresh prove by a preponderance of the evidence damages for any unjust enrichment caused by the misappropriation of the *trade secret(s)*, and if so, state the amount.” (emphases added))). Defendants objected to unjust enrichment being at issue in the case, but Defendants did not specifically object to the jury assessing unjust enrichment damages in this manner (*i.e.*, that the unjust enrichment damages may be based on any one or more trade secrets).

²⁷ In its response, Plaintiff argues that the *Panduit* factors are “patent-specific” and that “Defendants make no effort to challenge Thomas’s opinions under Pennsylvania law or the DTSA.” (D.I. 612 at 21). Plaintiff goes further, asserting that “[t]he damages award as to the remaining tort claims is uncontested.” (*Id.*). Defendants do not dispute this. In fact, their reply is conspicuously silent on the issues raised by Plaintiff. (*See* D.I. 616 at 10-11).

entitled to judgment as a matter of law of no infringement of the '849 Patent and therefore Defendants' *Panduit*-related arguments fall away here. (*See supra* § III.G).

In an apparent end-run around the page limits, Defendants also assert that, “for the reasons in Defendants’ Rule 50(a) motion, which are incorporated herein, AgroFresh failed to prove its entitlement to price-erosion damages.” (D.I. 597 at 21 (citing D.I. 573 at 23-25)). As noted above, such cross-referencing is unhelpful. (*See supra* n.14). In any event, the Court finds that Defendants’ price-erosion arguments do not support vacating the jury’s award. Defendants argue that the damages claim is too speculative because Plaintiff’s financial expert did not provide sufficient evidence that specific customers contracts were changed because of TruPick’s entrance into the market and did not account for other competition in the market. (D.I. 573 at 25; *see also* D.I. 616 at 10).²⁸ But Plaintiff’s expert testified that he did a customer-by-customer analysis of TruPick’s effect on Plaintiff’s business and its ability to charge certain prices going forward. (*See, e.g.*, Tr. at 947:17-948:2 & 950:22-952:11; *see also* Tr. at 945:17-953:11 (price erosion arising from TruPick and continuing beyond TruPick’s exit from the market)). As to other competition, the jury was presented with evidence that Pace’s FYSIUM was harder to implement and Plaintiff had a “strong following in the market,” suggesting that FYSIUM was not as much of a competitive harm to Plaintiff as TruPick. (*See, e.g.*, Tr. at 792:4-19, 792:21-793:15, 793:19-25 & 794:24-796:4; *see also* PTXa-182 at slide 35; PTXa-247 at DECCO-15981). And Plaintiff’s expert testified that he excluded customers that were previously Pace customers or ones where he could not determine whether Decco had an impact. (Tr. at 952:8-11). The jury was entitled to assess

²⁸ Defendants also fault Plaintiff’s financial expert for offering “no testimony on how the damages would differ based on which, if any, underlying claim is proven.” (D.I. 573 at 24). This criticism is curious given that Defendants proposed a single compensatory damages request for the jury based on alternative theories of liability. (*See* D.I. 525, Ex. B at 20).

the credibility of this testimony and evidence (including Defendants' countervailing evidence), weigh the evidence and draw the conclusions that it deemed appropriate. The Court sees no basis to disturb the findings of the jury.

Defendants also argue that Plaintiff failed to prove damages for its conversion claim, which was a basis for liability included in the jury's \$6,000,000 compensatory damages award for Plaintiff's actual loss. (D.I. 597 at 21-22; *see also* D.I. 578 at 7). As the Court has already concluded, the jury rendered that damages award based on alternative theories of liability, many of which are upheld. Because the Court has upheld the jury's finding of liability on at least some of Plaintiff's claims, thereby upholding the \$6,000,000 award for actual loss, the Court declines to reach Defendants' separate arguments on conversion-related damages.

In sum, Defendants have failed to persuade the Court that the jury's actual-loss compensatory damages award of \$6,000,000 lacks a sufficient evidentiary basis. Finally, although Defendants objected to unjust enrichment damages being at issue in the case (D.I. 574 at 2), they do not separately argue that the \$1,013,000 in unjust enrichment damages lack a sufficient evidentiary basis. Therefore, that award also stands.

3. Punitive Damages on Common-Law Claims (\$24,000,000)

The jury awarded \$24,000,000 in punitive damages based on Defendants' liability for unfair competition, tortious interference, conversion and civil conspiracy. (D.I. 578 at 7; *see also* D.I. 575 ("You may only award punitive damages for the following counts: unfair competition, tortious interference, conversion, and/or conspiracy.")). Defendants argue that the jury's award of punitive damages was "grossly excessive" and therefore violates the Due Process Clause of the Fourteenth Amendment. (D.I. 597 at 22; *see also id.* at 27 ("While Defendants are not challenging whether this extreme remedy is available at all, the factors discussed above all demonstrate that

the jury’s punitive damages award is excessive and should be reduced.”)). Before turning to the substance of this challenge, the Court must first address a procedural issue.

Plaintiff asserts that this issue was not properly preserved in Defendants’ pre-verdict motion under Rule 50(a), and that Defendants are improperly seeking remittitur, which should have been brought pursuant to Rule 59 (and it is now too late to do so). (*See* D.I. 612 at 24-25). The Court disagrees. Defendants are not challenging the amount of punitive damages based on the sufficiency of the evidence. Defendants are launching a constitutional challenge to the amount of the punitive award under the Fourteenth Amendment.²⁹ In the Third Circuit, when constitutional considerations render an award excessive, “the award is reduced as a matter of law” and there is no Seventh Amendment right to a jury making findings of fact. *Cortez v. Trans Union, LLC*, 617 F.3d 688, 716 (3d Cir. 2010); *see also Cooper Indus., Inc. v. Leatherman Tool Grp., Inc.*, 532 U.S. 424, 437 (2001) (“[T]he jury’s award of punitive damages does not constitute a finding of ‘fact’ . . .”). Because the award may be reduced as a matter of law on constitutional grounds, the Court is not constrained by the requirements of Rule 59 (*i.e.*, affording Plaintiff a new trial). Rather, when a court reduces a punitive-damages award as unconstitutionally excessive, “a court proceeds under Rule 50, not Rule 59.” *Johansen v. Combustion Eng’g, Inc.*, 170 F.3d 1320, 1331 (11th Cir. 1999); *see also Cortez*, 617 F.3d at 716 (citing *Johansen* with approval) Defendants’ constitutional challenge to the punitive award is thus properly the subject of their Rule 50(b) motion.³⁰ The Court now turns to whether the \$24,000,000 in punitive damages is excessive and deprives Defendants of due process.

²⁹ For this reason, Plaintiff’s reliance on *Hollock* is largely inapplicable. Defendants are not challenging the sufficiency of the evidence in support of the punitive award under Pennsylvania law.

³⁰ Defendants addressed punitive damages to the extent possible in their Rule 50(a) motion, and they are re-raising punitive damages now under Rule 50(b). Defendants could not have

“The Due Process Clause of the Fourteenth Amendment prohibits the imposition of grossly excessive or arbitrary punishments on a tortfeasor.” *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 416 (2003). The Supreme Court has provided three guideposts to use in determining whether a punitive-damages award is unconstitutionally excessive: “(1) the degree of reprehensibility of the defendant’s misconduct; (2) the disparity between the actual or potential harm suffered by the plaintiff and the punitive damages award; and (3) the difference between the punitive damages awarded by the jury and the civil penalties authorized or imposed in comparable cases.” *State Farm*, 538 U.S. at 418. The Court addresses these guideposts in turn.

a. Reprehensibility of Defendants’ Conduct

“[T]he most important indicium of the reasonableness of a punitive damages award is the degree of reprehensibility of the defendant’s conduct.” *BMW of N. Am., Inc. v. Gore*, 517 U.S. 559, 575 (1996). Indeed, the reprehensibility factor is so important to the constitutional analysis that the Supreme Court has provided further guidance:

We have instructed courts to determine the reprehensibility of a defendant by considering whether: [1] the harm caused was physical as opposed to economic; [2] the tortious conduct evinced an indifference to or a reckless disregard of the health or safety of others; [3] the target of the conduct had financial vulnerability; [4] the conduct involved repeated actions or was an isolated incident; and [5] the harm was the result of intentional malice, trickery, or deceit, or mere accident. . . . The existence of any one of these factors weighing in favor of a plaintiff may not be sufficient to sustain a punitive damages award; and the absence of all of them renders any award suspect

State Farm, 538 U.S. at 419. Defendants argue that their conduct caused no physical harm to Plaintiff nor demonstrated indifference or disregard for the health or safety of anyone. (D.I. 597 at 23). Plaintiff does not contend that either of these reprehensibility subfactors are in issue (D.I.

raised in their pre-verdict motion this precise challenge – *i.e.*, that the amount of punitive damages is unconstitutionally excessive – because the jury had not yet awarded an amount.

612 at 26-30), and the Court likewise finds that there is no evidence that Plaintiff (or anyone else) was physically harmed or that Defendants' conduct demonstrated an indifference or reckless disregard for the health or safety of Plaintiff or others. Defendants also assert that Plaintiff is not financially vulnerable (D.I. 597 at 23), and that too is supported by the evidence (and not disputed by Plaintiff). (*See, e.g.*, DTXb-747 at 34; PTXb-821). These factors weigh in favor of Defendants.

The last two subfactors – *i.e.*, whether Defendants' conduct was isolated or a pattern of conduct and whether Plaintiff's harm was the result of intentional malice, trickery or deceit – weigh in Plaintiff's favor, but not strongly. As to intentional malice, trickery or deceit, there is evidence of Defendants engaging in deceitful practices while aware that they were putting themselves and Dr. Mir at risk. Defendants knew that Dr. Mir was working with Plaintiff, that he was nervous about his exposure, and Defendants worked to help shield him from discovery from Plaintiff. (*See, e.g.*, Tr. at 127:9-10 (Court reading to the jury the stipulated fact that “Dr. Mir and Decco took pains to keep both the M-O-F technology and their relationship a secret from AgroFresh”); *see also* PTXa-24 (“One key consideration for meeting away from a Decco location was to protect [Dr. Mir] from exposure to more Decco folks (for now) than needed. Once AgroFresh learns of his work with Decco, they will certainly cut him off as a consultant even before [Essentiv] is formed.”); *see also* PTXa-23 (“[Dr. Mir] is nervous that AgroFresh will learn about his work with Decco We definitely need [Dr. Mir] and his 1-MCP patents/technology so we don't want him to be tempted by the AF checkbook.”); PTXa-26 (“[Dr. Mir] is becoming very nervous of his exposure. . . . Decco is also at risk.”); PTXa-77 (Dr. Mir “will give up his contract once we sort out NewCo”)). Additionally, Defendants were aware that Plaintiff had exclusive customers in the 1-MCP market and worked to target those customers (with significantly discounted prices on a product created partially by misappropriated trade secrets). (*See, e.g.*, PTXb-305; PTXb-309;

PTXb-1089). And Defendants celebrated the launch of TruPick with exclamations of glee at the price tag of development (almost free) and the likely problems it would cause Plaintiff. (*See* PTXa-324 at MIR_8666 (“[P]lease break out the best champagne in preparation for a true celebration [on TruPick approval]. . . . [W]e did not conduct one single trial (think no money spent other than my time and SciReg charges) for this approval. I know your concern over expenses so this approval was basically “free.”); *see also* PTXa-324 (“AgroFresh will be totally surprised by the news of TruPick and their shareholders will ask AF leaders very tough questions about the future.”); PTXa-31 (“AF held at least one emergency meeting to discuss Decco/TruPick. . . . AF will respond for sure . . . so we/Decco need to be quick to send our message to customers.”); PTXb-321 at DECCO-87470 (Decco describing 20+ year effort by Plaintiff to develop novel storage/ethylene ripening control)). There is also evidence that Defendants wanted to target Plaintiff’s employees as well. (*See* PTXb-321 at -87471 (“Contract or hire ex-AF applicators and key R&D personnel but only as needed.”)). Faced with this evidence, it would be hard to conclude that Defendants did not act with some intentional malice, trickery or deceit.

On the malice subfactor, however, the Court does also find it significant that the story largely changed after Judge Robinson issued her opinion in June 2017 declaring Plaintiff the owner of the ’216 Patent and related technology. After that, Defendants decided to pull TruPick from the market and dissolve the Essentiv joint venture. (*See* Tr. at 761:3-762:23 (Decco CEO testifying that TruPick and Essentiv were abandoned because “at the end of June 2017, it was determined that the technology Dr. Mir had represented as his did, in fact, belong to [AgroFresh].”); *see also* Tr. at 944:23-6 (Plaintiff’s expert testifying that it was his understanding TruPick was pulled after Plaintiff determined to be owner of ’216 Patent)). In the Court’s view, this evidence demonstrates that Defendants had at least some concern for the rights of Plaintiff and respect for the law. Thus,

although Defendants engaged in some trickery and deceit, they also discontinued this behavior once it was apparent that their conduct infringed Plaintiff's rights. Thus, this subfactor favors Plaintiff, but not as much as if Defendants had continued their conduct in the face of Judge Robinson's ruling.

On the recidivism subfactor, "[t]he Supreme Court has examined a defendant's recidivist behavior as it relates to non-parties, not to plaintiffs." *Jurinko v. Med. Protective Co.*, 305 F. App'x 13, 26 (3d Cir. 2008). As explained in *Jurinko*, although the Supreme Court "has not considered whether the conduct at issue in a single case can also demonstrate a defendant's recidivism," the Third Circuit has found repeated conduct towards only the plaintiff at issue to be relevant but afforded less weight. *Id.*; see also *CGB Occupational Therapy, Inc. v. RHA Health Servs., Inc.*, 499 F.3d 184, 191 (3d Cir. 2007) ("[W]hile the 'repeated conduct' subfactor will necessarily have 'less force' where the defendant's misconduct did not extend beyond his dealings with the plaintiff, it may still be 'relevant' in measuring the reprehensibility of the defendant's conduct, based on the particular facts and circumstances presented." (quoting *Willow Inn, Inc. v. Pub. Serv. Mut. Ins. Co.*, 399 F.3d 224, 232-33 (3d Cir.2005))). Here, there is no evidence that Defendants engaged in the conduct set forth above towards other persons or entities but, given the numerous examples the Court has identified, Defendants' conduct is not properly considered an isolated incident. Indeed, Defendants engaged in this type of behavior repeatedly – just only directed towards Plaintiff. Thus, the recidivism subfactor weighs in favor of Plaintiff but with less force than if Defendants had conducted themselves similarly towards others.

b. Disparity Between Plaintiff's Harm and the Punitive Award

The second of the *State Farm* guideposts looks at the disparity between the actual or potential harm to Plaintiff and the punitive award. At this step, the Court evaluates the ratio of the

awards for punitive and compensatory damages to determine whether the amount of punitive damages is unconstitutionally excessive. Here, the ratio of punitive to compensatory damages is 4:1. Although the Supreme Court has declined “to impose a bright-line ratio which a punitive damages award cannot exceed,” single-digit ratios are more likely to be constitutionally permissible and a punitive award that exceeds the 4:1 ratio “might be close to the line of constitutional impropriety.” *State Farm*, 538 U.S. at 425. In determining the constitutionally permissible ratio, “courts must ensure that the measure of punishment is both reasonable and proportionate to the amount of harm to the plaintiff and to the general damages recovered.” *Id.* at 426. The Supreme Court has cautioned, however, that “[w]hen compensatory damages are substantial, then a lesser ratio, perhaps only equal to compensatory damages, can reach the outermost limit of the due process guarantee.” *Id.* at 425.

Here, the \$6,000,000 compensatory damages award that Plaintiff obtained was substantial. Defendants’ TruPick product was on the market for a single season – less than a full year – with total United States sales of roughly \$500,000. (*See* Tr. at 761:12-762:8 & 1066:4-17; DTXb-512). Plaintiff’s damages theory was based on the contention that, even after TruPick’s withdrawal, Plaintiff continued to suffer harm from price erosion in what it could charge for its own 1-MCP product. The jury likely agreed, awarding Plaintiff \$6,000,000 in actual loss damages (which exceeded merely lost sales to TruPick). The Court is not disturbing that finding, but it is hard to dispute that the amount of compensation Plaintiff received for the harms suffered was quite substantial (and indeed Plaintiff does not argue otherwise). In light of this, the Court agrees that the ratio of 4:1 in this case is excessive. This guidepost favors a reduced award.

c. Civil Penalties in Comparable Cases

The third of the *State Farm* guideposts invites an inquiry into the difference between the punitive damages and the civil penalties authorized or imposed in comparable cases. Defendants cite several statutes allowing for double or treble damages when defendant has engaged in unfair business practices. (D.I. 597 at 26-27 (citing 73 PA. STAT. ANN. § 201-9.2 (unfair trade practices); 12 PA. CON. STAT. ANN. § 5304(b) (PUTSA); 18 U.S.C. § 1836(b)(3)(C) (DTSA); 35 U.S.C. § 284)). Defendants argue that even trebling the jury’s compensatory damages award does not reach the \$24,000,000 amount of punitive damages awarded, suggesting that the award is constitutionally excessive. (D.I. 597 at 27).³¹

Where, as here, punitive damages are awarded on only common-law tort claims, the third guidepost is less helpful. *See, e.g., Brand Mktg. Grp. LLC v. Intertek Testing Servs., N.A., Inc.*, 801 F.3d 347, 363 (3d Cir. 2015) (“The District Court did not, and we will not, address the third consideration, as it would be unhelpful because there are not comparable cases with civil penalties for negligent misrepresentation”); *CGB Occupational Therapy*, 499 F.3d at 188 (agreeing with district court that third guidepost not instructive in case where \$30 million in punitive damages awarded on tortious interference claim); *Inter Med. Supplies, Ltd. v. EBI Med. Sys., Inc.*, 181 F.3d 446, 468 (3d Cir.1999) (third guidepost “unhelpful” in case involving tortious interference and related common law tort claims); *see also Cont’l Trend Res., Inc. v. OXY USA Inc.*, 101 F.3d 634, 641 (10th Cir. 1996) (“OXY’s misconduct involved a violation of common law tort duties that do

³¹ Defendants cite to PUTSA and the DTSA, the Patent Act and another Pennsylvania statute, but here punitive damages were only awarded on the common-law claims of unfair competition, intentional interference, conversion and/or civil conspiracy. The Court agrees that these statutes suggest that the punitive-damages award is excessive because the statutes permit enhancement for willful or malicious conduct only up to two or three times the amount of compensatory damages – not four times (like here).

not lend themselves to a comparison with statutory penalties.”). Thus, the Court finds that this factor favors neither side.

In sum, under the appropriate analysis guided by the relevant factors articulated by the Supreme Court, this Court concludes that the jury’s award of \$24,000,000 in punitive damages is unconstitutionally excessive and violates Defendants’ due process rights under the Fourteenth Amendment. In the Court’s view, there is no doubt that Defendants engaged in some trickery and deceitful practices – for some amount of time – and those practices caused harm to Plaintiff. But that harm to Plaintiff was an economic harm to a financially secure company, and Defendants ceased their conduct once a court issued a ruling that determined certain rights held by Plaintiff. And the jury awarded Plaintiff \$6,000,000 in compensatory damages, an award that is certainly substantial for the harm that Plaintiff suffered. In light of the substantial compensatory damages award and the modest reprehensibility on the part of the Defendants, the Court finds that a 1:1 ratio is the maximum permitted by the Constitution in this case. *See Jurinko*, 305 F. App’x at 30 (“Medical Protective’s conduct does not justify so high an award in light of the moderate degree of reprehensibility, the substantial compensatory award, and the large disparity between the award and civil penalties under § 1171. . . . Accordingly, we will reduce the award to reflect a 1:1 ratio.”); *see also id.* at 28 (reducing ratio from 3.13:1 to 1:1 where the \$1,658,345 compensatory damages were substantial, plaintiff only suffered economic harm, the harm was easily measured and defendant’s actions were egregious but not likely particularly egregious).

Therefore, the jury award of \$24,000,000 in punitive damages will be reduced to \$6,000,000.

I. Plaintiff's Request for Enhanced Damages

Plaintiff asks the Court to enhance the damages awarded for trade secret misappropriation under the DTSA and PUTSA.³² Specifically, Plaintiff seeks an additional \$14,026,000 in exemplary damages because Defendants' trade secret misappropriation was willful and malicious. (*See* D.I. 588 at 19).

Both the DTSA and PUTSA provide that, in cases of willful and malicious misappropriation, the Court may award additional exemplary damages in an amount not to exceed double the damages award. *See* 18 U.S.C. § 1836(b)(3)(C) (“[I]f the trade secret is willfully and maliciously misappropriated, award exemplary damages in an amount not more than 2 times the amount of the damages awarded under subparagraph (B)”); 12 PA. CON. STAT. ANN. § 5304(b) (“If willful and malicious misappropriation exists, the court may award exemplary damages in an amount not exceeding twice any award made under subsection (a).”). That Defendants' actions are found to be willful and malicious, however, does not necessarily mean that exemplary damages must follow. *See Estate of Accurso v. Infra-Red Servs., Inc.*, 805 F. App'x 95, 107 (3d Cir. 2020) (“We see no reason to hold that the District Court abused its discretion when it denied attorneys' fees and punitive damages. Although the jury found Accurso's misappropriation was willful and malicious, [PUTSA] does not call for awarding punitive damages on that finding alone.”).³³

Whether to award exemplary damages is committed to the Court's discretion. *See id.* In exercising that discretion to determine whether to award exemplary damages under PUTSA, courts

³² Plaintiff also requests that the Court enhance damages awarded for patent infringement. (*See* D.I. 587 & 588). Because the Court has found that Defendants are entitled to judgment as a matter of law of no patent infringement, the Court declines to reach Plaintiff's arguments on enhancement of patent-related damages.

³³ The parties focus on cases addressing exemplary damages under PUTSA (or other state-adopted versions of the Uniform Trade Secrets Act), and neither side argues that the analysis would be different under the DTSA. Therefore, the Court proceeds similarly.

have considered the duration of misappropriative conduct, the defendant's consciousness of resulting injury and any efforts to cover up malfeasance. *See Advanced Fluid Sys., Inc. v. Huber*, 295 F. Supp. 3d 467, 493 (M.D. Pa. 2018) (citations omitted). Here, the Court has upheld the jury's finding of willful and malicious misappropriation (*see supra* § III.A.5), but the Court will consider the other factors in determining whether enhancement is appropriate.

Turning to the duration of the conduct, Plaintiff cites to scant evidence to support its argument that Defendants' conduct continued over several years. In its opening brief, Plaintiff cites to just two pages of a deposition transcript (and generally to the entire docket for the Hazel litigation). (D.I. 588 at 9). Plaintiff then offers attorney argument about UPL's attempted (but unsuccessful) bid to purchase the AgroFresh business to argue that there was "a calculated, multi-year scheme to misappropriate AgroFresh's trade secrets." (*Id.*). Plaintiff's conclusion is unsupported by evidence. Although the fact that UPL put in a bid to buy AgroFresh is in the record (Tr. at 754:16-758:4; *see also* PTXb-484), there is no evidence as to how this relates to Defendants' misappropriative conduct. And Plaintiff offers no explanation as to how this event ties into – let alone sets into motion – the misappropriation of the trade secrets asserted here. (*See* D.I. 588 at 9). Indeed, there is no indication that these (or any of Plaintiff's) trade secrets were communicated as part of that bid process and, in fact, UPL's general counsel explained that only a "general overview" of Plaintiff's business was shared. (Tr. at 755:13-757:23).³⁴ And as to the litigation involving Hazel (D.I. 588 at 9), the Court finds this irrelevant to the issue of whether Defendants' trade secret misappropriation was of protracted duration. On the present record, the Court has no

³⁴ Plaintiff's counsel may have argued otherwise to the jury (*see* Tr. at 1320:21-1321:7), but the Court does not find that argument persuasive here.

evidence that Defendants disclosed any of Plaintiff's trade secrets to Hazel or that Defendants had any role in the design of Hazel's product.

In its reply brief, on duration of conduct, Plaintiff cites to two emails and Dr. Mir's admission at trial. (D.I. 605 at 7). The emails support an inference that Defendants were working with Dr. Mir on misappropriated technology on more than one occasion, but the time period covered by the emails is six months – *i.e.*, from July 2015 to January 2016. (*See* PTXa-23; PTXa-180). In any event, even assuming that Plaintiff could put forth the effort and identify evidence suggesting a longer period of misappropriative conduct, that would not change the Court's conclusions as to exemplary damages. Indeed, the Court takes note that Defendants ceased their conduct once Judge Robinson determined that Plaintiff was the owner of the '216 Patent and related 1-MCP technology. (*See* Tr. at 761:3-762:23 (Decco CEO testifying that TruPick and Essentiv were abandoned because “at the end of June 2017, it was determined that the technology Dr. Mir had represented as his did, in fact, belong to [AgroFresh]”); *see also* Tr. at 944:23-6).

Turning to Defendants' consciousness of Plaintiff's injury resulting from their misappropriation, there is evidence that Defendants were aware of (or indifferent to) the fact their conduct was wrongful and would cause harm to Plaintiff. Indeed, Dr. Oakes and Mr. Girin were aware that Dr. Mir had contractual obligations with Plaintiff but deliberately chose not to investigate the scope of those obligations or inquire further. (*See, e.g.*, Tr. at 589:1-19; Tr. at 724:7-21). Plaintiff provided Defendants with relevant language from those contracts in 2016 but Defendants decided to launch TruPick anyway later that year. (*See* Tr. at 738:16-24, 740:4-7 & 771:17-772:1). Thus, at the very least, there is evidence that Defendants buried their heads in the sand when it came to Dr. Mir and thus Plaintiff's rights. And using a product that piggybacked off of some of Plaintiff's trade secrets, Defendants launched a marketing campaign that targeted

some of Plaintiff's exclusive customers. (*See, e.g.*, PTXb-305; PTXb-309; PTXb-1089; *see also* PTXa-31; PTXb-346; PTXb-353). In fact, Defendants delighted in the approval of their product and how it might frustrate Plaintiff's business. (*See, e.g.*, PTXa-324 at MIR_8666; PTXa-31). At the same time, Defendants were pursuing a legitimate business interest – developing a competitive 1-MCP product – and TruPick was not simply a copy of Plaintiff's SmartFresh created solely by trade secret misappropriation.³⁵ Rather, TruPick employed a different carrier for the 1-MCP (magnesium formate) as compared to SmartFresh (α -cyclodextrin). (*Compare* Tr. at 358:1-10, *with* Tr. at 445:21-446:4 & 507:15-22; *see also* Tr. at 585:5-586:6). And there was some evidence that Defendants performed independent studies on that product and invested resources in the project. (*See, e.g.*, Tr. at 581:1-7, 600:5-19 & 752:25-5). In the Court's view, this suggests that, although Defendants misappropriated trade secrets, they were also motivated by competition and used some legitimate means to develop their TruPick product. *See Advanced Fluid*, 295 F. Supp. 3d at 494 (competitive motives relevant in declining to award exemplary damages).

On whether Defendants engaged in a cover-up, there is evidence of one here. Defendants were nervous about their work with Dr. Mir, and Defendants were nervous about the likely exposure from continuing that work. (*See, e.g.*, PTXa-24 (“One key consideration for meeting away from a Decco location was to protect [Dr. Mir] from exposure to more Decco folks (for now) than needed. Once AgroFresh learns of his work with Decco, they will certainly cut him off as a consultant even before [Essentiv] is formed.”); *see also* PTXa-23 (“[Dr. Mir] is nervous that AgroFresh will learn about his work with Decco We definitely need [Dr. Mir] and his 1-MCP patents/technology so we don't want him to be tempted by the AF checkbook.”); PTXa-26 (“[Dr.

³⁵ Defendants knew that the expiration of the key 1-MCP patent opened the market up to such lawful competition. (*See, e.g.*, Tr. at 742:2-24, 758:15-59:10 & 1030:18-1032:13).

Mir] is becoming very nervous of his exposure. . . . Decco is also at risk.”)). Not only were Defendants mindful of the exposure, but they also took steps to keep their relationship with Dr. Mir a secret. (*See* Tr. at 127:9-10 (stipulated fact that “Dr. Mir and Decco took pains to keep both the M-O-F technology and their relationship a secret from AgroFresh”); *see also* PTXa-24; PTXa-23; PTXa-26). It is reasonable to infer from this evidence that Defendants hid their collaboration with Dr. Mir because they suspected there was something untoward about their work with Dr. Mir (and the knowledge he brought to their project). But again, it is noteworthy that Defendants reversed course when the legal landscape became clear. Defendants abandoned TruPick when confronted with the judicially sanctioned reality that Plaintiff was the owner of the ’216 Patent and related 1-MCP technology (and that Dr. Mir had been violating his contractual obligations to Plaintiff). Thus, although Defendants attempted to conceal their conduct for a period of time, it is significant that that cover-up did not continue beyond Judge Robinson’s ruling.

Plaintiff also argues that exemplary damages are necessary to deter Defendants from engaging in similar conduct in the future (D.I. 588 at 13-14), but the Court is unpersuaded. Although not awarded on the trade secret claims, Defendants are already subject to a significant punitive damages award. (*See supra* § III.H.3). This punitive award was based on conduct that has some relation to the conduct that gave rise to Defendants’ misappropriation liability – *e.g.*, interfering with Plaintiff’s customer contracts with a product partially based on misappropriated trade secrets. In the Court’s view, exemplary damages will not add any further deterrent beyond that achieved by the significant punitive damages award. Moreover, Defendants already ceased the offending conduct once Judge Robinson issued her ruling, further suggesting that additional deterrence is unnecessary.

Finally, Plaintiff asserts that Defendants engaged in litigation misconduct as further support for an award of exemplary damages. (*See* D.I. 588 at 6-7 & 12-13). Defendants respond that it was Plaintiff who engaged in misconduct. (*See* D.I. 594 at 5-7). To the extent that Plaintiff is referring to Defendants' attempts to cover up their misdoings, the Court has addressed that already. To the extent that the parties are simply rehashing pretrial and discovery disputes, neither side has cited any support for the proposition that litigation conduct is a relevant factor to consider in the exemplary-damages inquiry and, as such, the Court will not take it into account in reaching its conclusion.

That being said, the Court will end this discussion where it began the opinion. This case was bitterly fought and fueled on both sides by ill-will and hard feelings. The result was a case that was over-litigated – sometimes unprofessionally – with both sides sharing fault. Defendants were often less than forthcoming with discovery, resulting in an excess of discovery motions being filed. But Plaintiff's conduct was hardly without blemish. Indeed, throughout most of this litigation and despite repeated warnings, Plaintiff resisted articulating in any meaningful way the trade secrets that Defendants allegedly misappropriated, thereby depriving Defendants of, among other things, the ability to assess the merits of the claims being asserted against them. (*See, e.g.*, D.I. 335, 409, 503, 505 & 556; *see also* D.I. 549 at 117:10-129:25; D.I. 535 at 53:8-54:16). Similarly, Plaintiff contributed substantially to the caustic nature of the proceedings. For example, Plaintiff's counsel lambasted Dr. Oakes and Defendants' attorney during the Oakes deposition, saying he was there to prove that the witness is a "fraud," accusing Defendants generally of being "fraudsters" and threatening criminal action:

Raj, you're completely wrong on that. You don't understand the basics of our contract claim, number one. Number two, you don't understand the basis of our fraud claim. These are fraudsters. We're gonna – this man is a fraud and I'm saying it for the record and we're

going to prove it. He's a fraud and I'm saying it for the record and we're going to prove it.

Everything that these men did is in a conspiracy to steal from us and we're going to prove that.

So don't tell me, Raj, that this is not related to Counts 1 and 4. It's absolutely the core of both of them.

These fraudsters are going to come to justice here and what they've done is a violation of criminal law as well as civil law and we're making our record and we're going to make sure that criminal law record and civil law record made here today and is made next week.

(D.I. 519-13 at pg. 65 of 262; *see also id.* at pgs. 65-66 of 262). This conduct was apparently a regular enough occurrence that Defendants filed a motion in *limine* to prevent similar behavior at trial. (*See generally* D.I. 519-13 at pgs. 55-223 of 262). Thus, although the Court is not convinced that litigation conduct is relevant to exemplary damages, if it were, Plaintiff's contribution to the inappropriate litigation behavior in this case would weigh against exemplary damages.

In sum, although Defendants willfully and maliciously misappropriated certain trade secrets held by Plaintiff, the Court does not believe Defendants' conduct warrants exemplary damages. Defendants did engage in subterfuge and were at least deliberately indifferent to Plaintiff's rights, but Defendants were also pursuing a legitimate business interest in their TruPick product. Moreover, once it became clear that Plaintiff owned the relevant 1-MCP technology and that Dr. Mir was not free to work with Defendants as he had represented, Defendants pulled TruPick from the market and dissolved the Essentiv joint venture. Under these circumstances, the Court declines to award exemplary damages under the DTSA and PUTSA.³⁶

³⁶ The Court has considered all factors advanced by Plaintiff to support an award of exemplary damages, as well as those offered by Defendants in opposition, even if not explicitly addressed in this opinion.

J. Plaintiff's Request for Pre- and Post-Judgment Interest

Plaintiff requests prejudgment interest for the \$6,000,000 compensatory damages awarded for patent infringement, trade secret misappropriation (under both the DTSA and PUTSA), unfair competition, intentional interference with MirTech agreements and business relationship and intentional interference with customer contracts, conversion and civil conspiracy.³⁷ (See D.I. 589 at 1). Plaintiff also requests prejudgment interest on the \$1,013,000 in compensatory damages for unjust enrichment resulting from trade secret misappropriation (under both the DTSA and PUTSA). (*Id.*). Defendants do not dispute that prejudgment interest should be awarded for the compensatory damages. (D.I. 598 at 3 n.4). There is a dispute, however, as to whether the Court should apply the prime rate compounded quarterly, as Plaintiff proposes (D.I. 589 at 3), which ranged from 3.25 to 5.0% during the relevant period (*see* D.I. 590 at 6),³⁸ or whether the Court should instead apply the Treasury bill rate compounded quarterly, where that rate ranged between 0.22 and 2.59% during the relevant time period (*see* D.I. 598 at 5-6; *see also id.*, Ex. 2 at 5).

Prejudgment interest is awarded to restore a plaintiff to the position it would have been in had there been no wrongdoing. *See General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655-56 (1983); *see also Delaware River & Bay Auth. v. Kopacz*, 584 F.3d 622, 634 (3d Cir. 2009) (prejudgment interest awards “must be compensatory rather than punitive”). “The matter of prejudgment interest is left to the discretion of the district court.” *Taxman v. Bd. of Educ. of Twp.*

³⁷ Plaintiff also requests interest on any enhanced amounts but the Court has declined to enhance damages. (*See supra* § III.I).

³⁸ Plaintiff also requests prejudgment interest under the Delaware statutory rate, which is “5% over the Federal Reserve discount rate including any surcharge as of the time from which interest is due.” (D.I. 589 at 2 (quoting 6 DEL. C. § 2301(a))). Plaintiff has cited no authority in this District to support applying this rate. Moreover, Plaintiff’s state law trade secret claims were brought under Pennsylvania law, not Delaware law. Thus, the Court declines to apply the Delaware statutory rate for prejudgment interest.

of Piscataway, 91 F.3d 1547, 1566 (3d Cir. 1996). This broad discretion, of course, extends to a determination of the appropriate interest rate to apply. *See, e.g., Sun Ship, Inc. v. Matson Navigation Co.*, 785 F.2d 59, 63 (3d Cir. 1986) (“In federal question cases, the rate of prejudgment interest is committed to the discretion of the district court.”); *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545 (Fed. Cir. 1991).

As requested by Plaintiff, the Court will assess prejudgment interest compounded quarterly at the prime rate. *See, e.g., In re Frescati Shipping Co.*, 886 F.3d 291, 315 (3d Cir. 2018) (district court within its discretion to award prejudgment interest either at the prime rate or post-judgment rate prescribed by 28 U.S.C. § 1961(a)); *see also Taxman*, 91 F.3d at 1566 (“The adjusted prime rate, established periodically by the Secretary of the Treasury and codified in 26 U.S.C. § 6621, has been used regularly by district courts to calculate prejudgment interest.”); *see also Amgen Inc. v. Hospira, Inc.*, 336 F. Supp. 3d 333, 364 (D. Del. 2018) (for patent damages, awarding prejudgment interest at the prime rate compounded quarterly), *aff’d*, 944 F.3d 1327 (Fed. Cir. 2019). The prime rate is by far the most common practice in the District of Delaware. *See, e.g., Bayer v. Baxalta*, No. 16- 1122-RGA, 2019 WL 4016235, at *7 (D. Del. Aug. 26, 2019); *Idenix Pharm. LLC v. Gilead Scis., Inc.*, 271 F. Supp. 3d 694, 705 (D. Del. 2017); *Comcast IP Holdings I, LLC v. Sprint Commc’ns Co.*, No. 12-0205-RGA, 2015 WL 4730899, at *10 (D. Del. Aug. 10, 2015); *Ateliers de la Haute-Garonne v. Broetje Automation-USA Inc.*, 85 F. Supp. 3d 768, 783 (D. Del. 2015); *Dow Chem. Co. v. Nova Chems. Corp.*, No. 05-737-LPS, 2014 WL 1285508, at *11 (D. Del. Mar. 28, 2014); *XpertUniverse, Inc. v. Cisco Sys., Inc.*, No. 09-157-RGA, 2013 WL 6118447, at *11 (D. Del. Nov. 20, 2013).

The Court declines to apply the Treasury bill rate as requested by Defendants. Defendants assert that, during the damages period, Plaintiff was in “investing mode” (D.I. 598 at 5) and there

is no evidence that Plaintiff “was in a borrowing mode or would have used the damages award (had it been received during the damages period) to avoid debt” (*id.* at 6). First, it is not necessary for Plaintiff to “demonstrate that it borrowed at the prime rate in order to be entitled to prejudgment interest at that rate.” *Baxalta*, 2019 WL 4016235, at *7 (quoting *Uniroyal*, 939 F.2d at 1545); *see also In re Frescati Shipping Co.*, 886 F.3d at 314 (“[H]ad the District Court chosen to use the prime rate, it would not have abused its discretion even without extensive proof of borrowing costs.”); *Idenix*, 271 F. Supp. 3d at 705 (citing *XpertUniverse*, 2013 WL 6118447, at *11). Moreover, there is evidence that Plaintiff would have used additional funds during the relevant time period to pay down its debt rather than to make further investment. (*See* D.I. 603). Therefore, the Court is not persuaded that the Treasury bill rate should be applied in this case.

On the question of when the prejudgment interest begins to accrue on the \$1,013,000 in unjust enrichment damages, the Court cannot agree with Plaintiff. (*Compare* D.I. 589 at 3 (November 30, 2014 is proper start date according to Plaintiff), *with* D.I. 598 at 7-8 (May 11, 2016 is proper start date according to Defendants)). As the Supreme Court has explained, “[p]rejudgment interest serves to compensate for the loss of use of money due as damages from the time the claim accrues until judgment is entered.” *W. Virginia v. United States*, 479 U.S. 305, 311 n.2 (1987); *see also William A. Graham Co. v. Haughey*, 646 F.3d 138, 146-47 (3d Cir. 2011). Plaintiff asserts that Defendants’ trade secret wrongdoings began when Defendants and Dr. Mir signed a letter of intent (*i.e.*, November 30, 2014). (*See* D.I. 589 at 3; D.I. 602 at 5). In Defendants’ view, July 2016 is the more accurate date for accrual to begin because that is when Defendants became aware of the terms of Plaintiff’s agreement with the MirTech Defendants. (*See* D.I. 598 at 7 (quoting Tr. at 738:16-21)).

Neither side points to record evidence as to when the trade secret misappropriation causes of action actually began to accrue against Defendants under the DTSA or PUTSA, but Plaintiff bears the brunt of this failure. As the Third Circuit has explained, “a prevailing party moving for an award of prejudgment interest must provide the district court with sufficient information to calculate the interest.” *Leonard v. Stemtech Int’l Inc.*, 834 F.3d 376, 398 (3d Cir. 2016). The jury’s verdict gives no indication as to when Defendants first became liable under the trade secret misappropriation causes of action and Plaintiff has failed to persuade the Court that the date of its DTSA and PUTSA claims began to accrue on November 30, 2014. As a result of this failure, the Court finds that the start date for accrual on the unjust enrichment damages is the date the Complaint was filed – *i.e.*, August 3, 2016. *Cf. Esprit Health, LLC v. Univ. of Delaware*, No. 13-1385-RGA, 2015 WL 9305644, at *2 (D. Del. Dec. 21, 2015) (because it was “unclear at what exact point in time the jury found Defendant’s liability,” the court found that prejudgment interest should begin to accrue “from the date [the] Complaint was filed”). Thus, the prejudgment interest on the \$1,013,000 in unjust enrichment damages shall begin to accrue on August 3, 2016.

In sum, the judgment shall be amended³⁹ to include prejudgment interest at the prime rate compounded quarterly for the \$7,013,000 compensatory damages and, for the portion that is the \$1,013,000 in unjust enrichment damages, that pre-judgment interest shall begin to accrue on August 3, 2016.⁴⁰

³⁹ Regardless of how a party styles it, a request for pre- or post-judgment interest is a motion to alter or amend the judgment under Rule 59(e). *See Osterneck v. Ernst & Whinney*, 489 U.S. 169, 175 (1989) (“[A] postjudgment motion for discretionary prejudgment interest constitutes a motion to alter or amend the judgment under Rule 59(e).”).

⁴⁰ The parties shall submit a joint proposed amended judgment to reflect these amounts, particularly given that there is no calculation before the Court using the interest rates and start date deemed appropriate.

Finally, post-judgment interest is mandatory for damages awarded in civil cases. *See* 28 U.S.C. § 1961(a) (“Interest shall be allowed on any money judgment in a civil case recovered in a district court.”). Consistent with § 1961(a), the rate proposed by Plaintiff is the weekly average one-year constant maturity Treasury yield for the week preceding entry of judgment (*i.e.*, 1.59%). (*See* D.I. 589 at 5). Defendants do not dispute that Plaintiff is entitled to post-judgment interest or that the rate used by Plaintiff is proper. Therefore, Plaintiff shall be awarded post-judgment interest calculated using that rate and starting from the date judgment on the jury verdict was entered (*i.e.*, October 30, 2019). Post-judgment interest shall be awarded for the entire amount included in the judgment, including prejudgment interest. *See Skretvedt v. E.I. DuPont De Nemours*, 372 F.3d 193, 217 (3d Cir. 2004). To be clear, however, post-judgment interest on the prejudgment interest award does not begin to accrue until the amended judgment quantifying the prejudgment interest is entered. *See Travelers Cas. & Sur. Co. v. Ins. Co. of N. Am.*, 609 F.3d 143, 175 (3d Cir. 2010) (“[P]ost-judgment interest on Travelers’ award of prejudgment interest did not begin to run until the December 5, 2007 order was entered quantifying the amount in prejudgment interest owed to Travelers.”).

IV. CONCLUSION

For the foregoing reasons, Defendants’ renewed motion for judgment as a matter of law (D.I. 596) is GRANTED-IN-PART and DENIED-IN-PART, Plaintiff’s motions for enhanced damages (D.I. 587) is DENIED and Plaintiff’s motion for pre- and post-judgment interest (D.I. 589) is GRANTED as modified by the rates in this opinion. An appropriate order will follow.