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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WILLIAM H. HENDRIX III and GARY TURNBULL

Appeal 2018-005705
Application 13/861,946
Technology Center 1600

Before DONALD E. ADAMS, JEFFREY N. FREDMAN, and
DAVID COTTA, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal^{1,2} under 35 U.S.C. § 134 involving claims to a method of protecting a Brassica plant against attack by flea beetle insects by applying a sulfoximine insecticide. The Examiner rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the Real Party in Interest as DOW AGROSCIENCES, LLC (App. Br. 2).

² We have considered the Specification of Apr. 12, 2013 (“Spec.”); Final Office Action of July 7, 2017 (“Final Act.”); Appeal Brief of Jan. 8, 2018 (“App. Br.”); Examiner’s Answer of Mar. 12, 2018 (“Ans.”); and Reply Brief of May 14, 2018 (“Reply Br.”).

Statement of the Case

Background

“Flea beetles are a persistent and severe pest that feed a number of commercial crops, including canola (*Brassicus napus*). . . . Currently over 90% of the Canadian canola market is treated with a seed treatment to control flea beetles” (Spec. ¶ 3). “Disadvantageously, insects can rapidly develop resistances to insecticides, including insecticides currently utilized in seed treatments to control flea beetles” (*id.* ¶ 4). “It would, therefore, be desirable to able to use other insecticides as seed treatments to control insects, such as flea beetles” (*id.* ¶ 5).

The Claims

Claims 1, 2, 7–12, 17, and 19–23 are on appeal. Claim 19 is representative and reads as follows:

19. A method of protecting a canola seed and canola plant parts against attack by flea beetle, the method comprising:
contacting a canola seed with an insecticide consisting essentially of sulfoxaflor to substantially protect the canola seed and other canola plant parts developing therefrom from damage effectuated by at least one of the following flea beetles: *Altica ambiens* (alder flea beetle), *Altica canadensis* (prairie flea beetle), *Altica chalybaea* (grape flea beetle), *Altica prasina* (poplar flea beetle), *Altica rosae* (rose flea beetle), *Altica Sylvia* (blueberry flea beetle), *Altica ulmi* (elm flea beetle), *Chaetocnema pulicaria* (corn flea beetle), *Chaetocnema conofinis* (sweet potato flea beetle), *Epitrix cucumeris* (potato flea beetle), *Systema blanda* (palestripped flea beetle), *Systema frontalis* (redheaded flea beetle), *Psylliodes chrysocephala* (cabbage stem flea beetles), or *Psylliodes punctulata* (hop flea beetles).

The Rejection

The Examiner rejected claims 1, 2, 7–12, 17, and 19–23 under 35 U.S.C. § 103(a) as obvious over Matsuzaki,³ Burkness,⁴ Loso,⁵ and Dosedall⁶ (Final Act. 8–14).

The Examiner finds Matsuzaki teaches “controlling insect pests . . . with sulfoxaflor” including rapeseed (canola) by seed application (Final Act. 9). The Examiner finds that Matsuzaki teaches pests that can be controlled include “leaf beetles of coleoptera” as well as a detailed list of particular beetles (*id.* at 10). The Examiner finds that Loso also teaches “controlling insects with these insecticidal sulfoximines” including “numerous examples of leaf beetles of family Chrysomelidae” (*id.* at 11).

The Examiner finds that Burkness teaches “flea beetles are a type of leaf beetle in the family Chrysomelidae, and encompass genera and species, such as encompassed by Applicant’s claims, e.g. *Epitrix cucumeris* and *Systema blanda*, as well as genera and species disclosed in . . . disclosed in Matsuzaki ([0017]), e.g., *Phyllotreta cruciferae*” (Final Act. 12). The Examiner finds that “Dosedall discloses pesticide seed treatment of canola (*Brassica napus* L. and *Brassica rapa* L.) for treatment of flea beetle damage” (*id.*).

The Examiner finds it obvious to use

³ Matsuzaki, WO 2011/135831 A1, published Nov. 3, 2011.

⁴ Burkness et al., *Flea Beetles in Home Gardens*, <http://www.extension.umn.edu/garden/insects/find/flea-beetles/>, 1–3 (2007).

⁵ Loso et al., US 2007/0203191 A1, published Aug. 30, 2007.

⁶ Dosedall et al., *Managing Flea Beetles (Phyllotreta spp.) (Coleoptera: Chrysomelidae) in Canola with Seeding Date, Plant Density, and Seed Treatment*, 97 AGRONOMY J. 1570–8 (2005) (Abstract only).

the insecticides of Matsuzaki, disclosed to be useful for controlling various leaf beetles of order Coleoptera, in order to control other leaf beetles of order Coleoptera. Motivation to do so is in the art as a whole, such as Burkness, which discloses that numerous insecticides have been developed for treating leaf beetles in general, and not just specific genera of leaf beetles. Motivation to do so i[s] also explicitly found in Loso, which discloses Applicant's claimed sulfoximine insecticides alone for inhibiting numerous leaf beetles of order Coleoptera.

(Final Act. 6–7).

The issue with respect to this rejection is: Does a preponderance of the evidence of record support the Examiner's conclusion that Matsuzaki, Burkness, Loso, and Dosdall render the claimed sulfoximine insecticide treatment to protect Brassica plants from specific flea beetles obvious?

Findings of Fact

1. Matsuzaki teaches “a composition comprising a carboxamide compound represented by following formula (I) and sulfoxaflor has an excellent pesticidal effect” (Matsuzaki ¶ 5).

2. Matsuzaki teaches:

Examples of insect pest which can be controlled by the ‘composition’ include . . . cucurbit leaf beetle (*Aulacophora femoralis*), *Phyllotreta striolata*, rice leaf beetle (*Oulema oryzae*) . . . Colorado potato beetle (*Letinotarsa decemlineata*), beetle of family Elateridae (*Agriotes* spp.), tobacco beetle (*Lasioderma serricome*), *Anthrenus* (*Anthrenus verbasci*), rust-red flour beetle (*Tribolium castaneum*), power post beetle (*Lyctus bnmneus*), white-spotted longicom beetle (*Anoplophora malasiaca*), common pine shoot beetle (*Tomicus piniperda*), and the like.

(Matsuzaki ¶¶ 16–17).

3. Matsuzaki teaches “[e]xamples of the plant diseases which can be controlled by the ‘composition’ include “Brassicaceous vegetable diseases” and “rapeseed diseases” (Matsuzaki ¶¶ 18–20).

4. Matsuzaki teaches “the application can be carried out by spraying a suspension of a ‘composition’ to the surface of seeds” (Matsuzaki ¶ 29).

5. Matsuzaki teaches in example 6 that a composition comprising sulfoxaflor was applied to soybean seeds and then contaminated by *Rhizoctonia solani*, and the composition resulted in 78.9 % efficacy in treating infected plants (Matsuzaki ¶¶ 37–40).

6. Loso teaches “N-substituted (6-haloalkylpyridin-3-yl)alkyl sulfoximines and their use in controlling insects and certain other invertebrates” (Loso ¶ 2).

7. Loso teaches insects “can be controlled by applying the active compounds to the seed of the plant before planting” (Loso ¶ 134).

8. Loso teaches “insects or other pests which can be inhibited include, but are not limited to . . . Coleoptera [beetles]” (Loso ¶¶ 136, 138).

9. Burkness teaches “[f]lea beetles are common pests on many vegetable crops . . . common flea beetles in Minnesota gardens include . . . potato flea beetle, *Epitrix cucumeris*” (Burkness 1, col. 1).

10. Burkness teaches “[t]here are many insecticides labeled for treating flea beetles” (Burkness 3, col. 1).

11. Dosedall teaches “Flea beetle damage was greater on plants of *B rapa* than *B napus*, on spring-seeded canola than on plants seeded in fall, and on plants that developed from seed treated with Vitavax Single

(containing carboxin) than on plants treated with Vitavax rs (containing carboxin, thiram, and lindane)” (Dosdall, abstract).

Principles of Law

“The combination of familiar elements according to known methods is likely to be obvious when it does not more than yield predictable results” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

Analysis

We adopt the Examiner’s findings of fact and conclusions of law (*see* Final Act. 8–14; FF 1–11) and agree that Matsuzaki, Loso, Burkness, and Dosdall render the claims obvious. We address Appellant’s arguments below.

Appellant contends

Matsuzaki provides an extensive list of possible insects (about 120 genera of insects) that may be controlled by its composition (*id.* at ¶ [0021], *yet* Matsuzaki *does not* provide even a single example for the control of insect. In fact, Matsuzaki provides *only one example*, and it is the protection of soybean (*not* a *Brassica* plant) against disease caused by *Rhizoctonia solani*. Moreover, even with extensive list of possible insects, Matsuzaki *does not* include the specific flea beetles recited in claim 1.

(App. Br. 6). Appellant similarly argues that “the *Coleoptera* insects listed in Loso are not even in the same family as the flea beetle insects recited in claim 1. Furthermore, Loso discloses *only one* working example for seed treatment” (App. Br. 6).

We find this argument unpersuasive for several reasons. Matsuzaki teaches applying the claimed insecticide (FF 1) to seeds (FF 4) to protect the claimed crops (FF 3) against a wide variety of different beetles (FF 2), lacking only a teaching of the specific beetles recited in the claims.

Matsuzaki, however, is not the sole reference on which the Examiner relies and “[n]on-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references. . . . [The reference] must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

When Matsuzaki’s disclosure is combined with Loso’s teaching to control coleopteran or beetles generally with sulfoximine insecticides (FF 6–8), Burkness’ teaching that the potato flea beetle (*Epitrix cucumeris*) is a known vegetable pest (FF 9), and Dosedall’s teaching that flea beetles are generally known to infest the desired canola crop (FF 11), we agree with the Examiner that the ordinary artisan would have had reason to use Matsuzaki’s beetle control insecticide on canola seeds to protect against other known beetle species that infest plants.

In addition, we are not persuaded by Appellant’s argument that the art lacked an example because there is no requirement for working examples to render the claims obvious and Matsuzaki, Loso, Burkness, and Dosedall suggest all of the claim limitations. *See In re Mills*, 470 F.2d 649, 651 (CCPA 1972) (“[A] reference is not limited to the disclosure of specific working examples.”) Instead, “when the question is whether a patent claiming the combination of elements of prior art is obvious,” the answer depends on “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *KSR*, 550 U.S. at 417. Here, the claims are drawn to the predictable use of a known insecticide applied in known ways to seeds of known crop plants against known pests to predictably prevent insect damage to the crop plants (FF 1–

11).

Appellant contends that “[a]s to the fact that the composition of Matsuzaki must include both sulfoxaflor and a carboxamide compound, the Examiner relies on Loso for teaching the use of sulfoxaflor as a sole insecticide for controlling insects” (App. Br. 6).

To the extent that Appellant is arguing that the claims exclude the composition of Matsuzaki because of the “consisting essentially of” language, we note that the Specification does not define “consisting essentially of” and does not even use the term. Indeed, the Specification teaches that additional insecticides may be used and provides an extensive list of such insecticides (*see* Spec. ¶¶ 28–29). Appellant does not identify a disclosure in the Specification that distinguishes or limits the elements that are the basic and novel characteristics of the claims. Therefore, “consisting essentially of” will be treated as comprising. *See, e.g., PPG Industries v. Guardian Industries*, 156 F.3d 1351, 1355 (Fed. Cir. 1998) (“PPG could have defined the scope of the phrase ‘consisting essentially of’ for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention.”).

Appellant contends that “Matsuzaki and Loso merely provide a ‘*laundry list*’ of possible insects to be controlled for a ‘*laundry list*’ of potential plants-*without providing any example or guidance to support such teachings*” (App. Br. 7).

We find this argument unpersuasive because Matsuzaki and Loso are prior art patents that provide detailed descriptions of insecticides and insects that can be controlled by those insecticides (FF 1–8). Moreover, simply

because the prior art “discloses a multitude of effective combinations does not render any particular formulation less obvious.” *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989). In *Corkill*, an obviousness rejection was affirmed in light of prior art teachings that “hydrated zeolites will work” in detergent formulations, even though “the inventors selected the zeolites of the claims from among ‘thousands’ of compounds.” *In re Corkill*, 771 F.2d 1496, 1500 (Fed. Cir. 1985).

Appellant provides no evidence suggesting that the insecticides disclosed by Matsuzaki or Loso would be ineffective on any of the listed insect species. That the insecticides of Matsuzaki and Loso have a broad spectrum of activity supports the Examiner’s reasonable expectation of success for treatment of the specific insects recited in claims 1 and 19, rather than rebuts it.

Appellant contends

the combined teachings of Matsuzaki and Loso provides no guidance as to which insects and/or which plants would have been effectively controlled by seed treatment with sulfoximine-especially no guidance or suggestion for an effective protection of *Brassica* plants against the attack from the specific flea beetle species recited in claim 1.

(App. Br. 7). Appellant contends that “based on the standard for determining ‘obvious to try’, it could not be concluded that claim 1 is *prima facie* obvious to one skilled in the art based on the combined teachings of Matsuzaki, Loso, Burkness and Dosdall” (App. Br. 8).

We find these arguments unpersuasive because there would have been a reasonable expectation of success in applying known insecticides (FF 1, 6) to known crop plants (FF 3, 7) to limit crop damage from beetles (FF 2, 8) including beetles known to be pests (FF 9–11). “Obviousness does not

require absolute predictability of success . . . *all that is required is a reasonable expectation of success.*” *In re Kubin*, 561 F.3d 1351, 1360 (Fed. Cir. 2009). Here, there is a very reasonable expectation of success based on the disclosures of the prior art and Appellant provides no evidence, as opposed to attorney argument, rebutting this finding. Indeed, Dosedall teaches that canola plants treated with three insecticides resulted in reduced flea beetle damage (FF 11) and the other references teach the use of insecticides to treat beetles on crop plants (FF 1–10). The ordinary artisan would have found this sufficient to provide a reasonable expectation that the use of the insecticide of Matsuzaki or Loso on canola or brassica seeds would prevent damage from known pest beetle species.

Conclusion of Law

A preponderance of the evidence of record supports the Examiner’s conclusion that Matsuzaki, Burkness, Loso, and Dosedall render the claims obvious.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1, 2, 7–12, 17, 19–23	§ 103 Matsuzaki, Burkness, Loso, Dosedall	1, 2, 7–12, 17, 19–23	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED