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DORSEY & WHITNEY LLP - Minneapolis INTELLECTUAL PROPERTY DEPARTMENT 50 South Sixth Street Suite 1500 Minneapolis, MN 55402-1498			PRAKASH, SUBBALAKSHMI	
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* ROBERT C. MUSSER

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Appeal 2019-005801  
Application 13/046,162  
Technology Center 1700

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Before JOSEPH L. DIXON, DONNAM. PRAISS, and  
BRIAN D. RANGE, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 77–87. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> 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 Purina Animal Nutrition LLC. Appeal Br. 3.

CLAIMED SUBJECT MATTER<sup>2</sup>

Appellant describes the invention as relating to “use of an enhanced lactoperoxidase system for treatment of milk products.” Spec. ¶ 2. In particular, the Specification describes treating waste milk so that farmers can feed calves with the milk. *Id.* ¶¶ 2–6. Claim 77 is the only independent claim on appeal and is illustrative:

77. A method of inactivating *Mycobacterium avium subsp. Paratuberculosis* (MAP) in waste-milk, the method comprising:

admixing lactoperoxidase (“LP”) system components with waste-milk, the added LP system components comprising glucose, glucose oxidase, and an oxidizable agent consisting of iodide, wherein admixing comprises first adding a balancer product to the waste-milk, the balancer product containing the iodide and glucose, and then adding the glucose oxidase to the waste-milk to sequentially activate the lactoperoxidase therein; and

subjecting the admixture to pasteurization temperatures of at least about 56.5 °C for at least about 30 minutes,

wherein the admixture is free of added thiocyanate,

wherein the waste-milk includes at least one of transition milk, mastitic milk, antibiotic treated milk, high somatic cell count milk or milk to be fed to animals that is not suitable for human consumption,

wherein the iodide constitutes about 0.1 to about 10 ppm of the admixture, and

wherein the balancer product comprises a powdered supplement that includes a combination of protein, fat, vitamins and minerals.

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<sup>2</sup> In this Decision, we refer to the Final Office Action dated June 29, 2018 (“Final Act.”), the Appeal Brief filed December 21, 2018 (“Appeal Br.”), the Examiner’s Answer dated May 29, 2019 (“Ans.”), and the Reply Brief filed July 29, 2019 (“Reply Br.”).

## REFERENCES

The Examiner relies upon the prior art below in rejecting the claims on appeal:

<u>Name</u>	<u>Reference</u>	<u>Date</u>
Zhou et al. ("Zhou")	US 2006/0289354 A1	Dec. 28, 2006
Fennessy et al. ("Fennessy")	WO 00/69267	Nov. 23, 2000
"Benefits and Potential Risks of the Lactoperoxidase System of Raw Milk Pasteurization," Report of FAO/WHO technical meeting, Rome, Italy, Nov. to Dec. 2005 ("FAO").		
Godden, S., "A review of issues surrounding the feeding of waste milk and pasteurization of waste milk and colostrum," Col. of Veterinary Med., Univ. of Minnesota, Sept. 24–26, 2005 ("Godden").		

## REJECTIONS

The Examiner maintains the following rejections on appeal:

- A. Claims 77 and 81–87 under 35 U.S.C. § 103 as obvious over Godden, FAO, and Zhou. Ans. 3.
- B. Claims 78–80 under 35 U.S.C. § 103 as obvious over Godden, FAO, Zhou, and Fennessy. *Id.* at 7.

## OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential), *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) ("[I]t has long been the Board's practice to require an applicant to identify the

alleged error in the examiner's rejections." After considering the evidence presented in this Appeal and each of Appellant's arguments, we are not persuaded that Appellant identifies reversible error. Thus, we affirm the Examiner's rejections for the reasons expressed in the Final Office Action and the Answer. We add the following primarily for emphasis.

The Appellant does not argue any claim separately and does not present distinct arguments for Rejection B. Appeal Br. 3–4, 8. We therefore limit our discussion to claim 77. All other claims stand or fall with that claim. 37 C.F.R. § 41.37(c)(1)(iv) (2018).

The Examiner finds that Godden teaches treating waste milk by pasteurization and teaches that it is not definitively known whether pasteurization completely destroys *Mycobacterium avium* subsp. Paratuberculosis ("MAP") which causes Johne's disease. Ans. 3 (citing Godden). The Examiner also finds that FAO suggests "that lactoperoxidase treatment prior to pasteurization has complementary or potentially synergistic effects on microbial inhibition." *Id.* at 4 (citing FAO). The Examiner determines that a person of skill in the art would have been motivated to apply a lactoperoxidase system in conjunction with Godden's heat treatment to inactivate MAP in waste milk with a reasonable expectation of success. *Id.*

The Examiner finds that FAO does not specifically teach added iodide. *Id.* The Examiner finds, however, that FAO teaches adding 10 ppm thiocyanate in raw milk as part of the lactoperoxidase system. *Id.* (citing FAO). The Examiner also finds that Zhou teaches that thiocyanate and iodide are interchangeable in a thiocyanate system. *Id.* at 4–5 (citing Zhou). The Examiner determines that it would have been obvious to add sufficient

iodide to the waste milk as a substitute for added thiocyanate of modified Godden to enable MAP inactivation. *Id.* at 5, 12.

Appellant first argues that the references do not teach inactivating MAP in waste-milk by admixing lactoperoxidase components. Appeal Br. 4–5. Appellant emphasizes that Godden teaches pasteurization of waste milk while FAO only discusses raw milk. *Id.* This argument is unpersuasive because it addresses the references individually. *In re Keller*, 642 F.2d 413, 426 (CCPA 1981).

The Examiner’s rejection, based on the combined teaching of the references, is well founded. In particular, FAO teaches that its lactoperoxidase system combined with pasteurization inactivates bacteria more effectively than pasteurization alone. Ans. 4; FAO 22 (“application of the LP-s prior to heating provides a complementary, possibly synergistic, combination”). Although FAO does not explicitly reference raw milk, a person of skill in the art would have understood that this teaching could apply to waste milk as well as to raw milk. Ans. 4; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007) (“The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.”). A person of skill in the art would have recognized that the FAO technique could improve waste milk processing in the same way it improves raw milk processing (i.e., by inactivating bacteria). *KSR Int’l*, 550 U.S. at 417.

In the Reply Brief, Appellant emphasizes that FAO teaches that its lactoperoxidase system merely maintains initial quality of milk before processing or pasteurization. Reply Br. 2–4. This characteristic of the

lactoperoxidase system, however, would be advantageous to waste milk as well as to raw milk. Even if waste milk is not safe to drink prior to pasteurization, it would be advantageous to prevent the waste milk from becoming even worse (i.e., more bacterial growth) prior to the pasteurization process just as FAO teaches with respect to raw milk. *See also KSR Int'l Co.*, 550 U.S. at 417 (“if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person’s skill”).

Appellant also argues that FAO indicates that the lactoperoxidase system is not applicable to all bacteria found in milk. Reply Br. 4. The fact that the system would help mitigate at least some bacteria, however, provides reason why a person of skill in the art would have reason to use the system in combination with pasteurization. Ans. 4. An improvement does not have to be expected to perfectly address every problem to nonetheless be obvious. *See In re O’Farrell*, 853 F.2d 894, 903–04 (Fed. Cir. 1988) (“Obviousness does not require absolute predictability of success . . . all that is required is a reasonable expectation of success.”) (citations omitted).

Appellant also argues that the references do not teach sequentially adding glucose, iodide, and glucose oxidase to treat waste milk. Appeal Br. 5–7. Because Appellant again argues the references separately, the argument is unpersuasive. *In re Keller*, 642 F.2d at 426. The Examiner relies on Zhou’s teaching that iodide and thiocyanate are interchangeable in a lactoperoxidase system. Ans. 4–5; *see also Zhao* ¶ 17. The Examiner, therefore, provides adequate support as to why a person of skill in the art would have included iodide in the FAO lactoperoxidase system when that

system is applied to Godden's waste milk before pasteurization. Ans. 4–5. Moreover, the Examiner finds that Zhou teaches a sequence for adding components to a lactoperoxidase system (Ans. 10), and Appellant does not persuasively dispute this finding.

To the extent Appellant attempts to distinguish the prior art based on the order of steps performed in method claim 77 (Appeal Br. 6–7), a method claim is *prima facie* obvious where the art teaches or suggest the method's recited steps even if the order of the steps is different absent evidence of criticality of step order. *Ex parte Rubin*, 128 USPQ 440 (Bd. App. 1959) (prior art reference disclosing process of making laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with thermosetting material was held to render *prima facie* obvious claims directed to process of making a laminated sheet by reversing order of prior art process steps.); *see also In re Burhans*, 154 F.2d 690, 692 (CCPA 1946) (selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results).

Here, Appellant does not present evidence that the ordering is critical or provides unexpected results. Ans. 10–11. “[A]rguments of counsel cannot take the place of evidence lacking in the record.” *Estee Lauder Inc. v. L’Oreal, S.A.*, 129 F.3d 588, 595 (Fed. Cir. 1997) (internal quotes and citation omitted). Absent such evidence, any reordering of prior art steps here is merely “predictable use of prior art elements according to their established functions.” *KSR Int’l Co.*, 550 U.S. at 417.

Appellant also argues that the references do not teach a process free of added thiocyanate and emphasizes that FAO discourages a thiocyanate-free mixture. Appeal Br. 7–8. The Examiner, however, finds that Zhou teaches



thiocyanate and iodide are interchangeable. Ans. 12–13. A person of skill in the art, therefore, would have had reason to substitute added thiocyanate for iodide such that the process would be free of added thiocyanate. *Id.*

Because Appellant’s arguments do not identify harmful error, we sustain the Examiner’s rejections.

#### DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
77, 81–87	103	Godden, FAO, Zhou	77, 81–87	
78–80	103	Godden, FAO, Zhou, Fennessy	78–80	
<b>Overall Outcome</b>			<b>77–87</b>	

#### TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

**AFFIRMED**