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NOVOZYMES NORTH AMERICA, INC. US PATENT DEPARTMENT 77 PERRYS CHAPEL CHURCH ROAD PO BOX 576 FRANKLINTON, NC 27525-0576			BADR, HAMID R	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIK MARCUSSEN
and CHRISTIAN PEDERSEN

Appeal 2019-005026
Application 13/627,677
Technology Center 1700

Before ADRIENE LEPIANE HANLON, ROMULO H. DELMENDO, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

The Appellant¹ filed an appeal under 35 U.S.C. § 134(a) from an Examiner's decision finally rejecting claims 30–53 under 35 U.S.C. § 103(a) as unpatentable

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 Novozymes A/S. Appeal Brief dated January 15, 2019 (“App. Br.”), at 1.

over De Lima et al.² in view of Herrman et al.³ and as evidenced by Motoi et al.,⁴ and Rowe.⁵ We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

The claims on appeal are directed to a feed composition comprising at least one granule having a mean size of at least 100 μm and less than 480 μm . The granule comprises one or more enzymes and one or more particles of an organic or vegetable flour.

Independent claim 30, the sole independent claim on appeal, is reproduced below from the Claims Appendix to the Appeal Brief. The limitations at issue are italicized.

30. A feed composition comprising at least one granule comprising one or more enzymes and one or more particles of a particulate component, wherein

(a) *the particulate component is an organic or vegetable flour;*

(b) the particulate component constitutes less than 75% by weight of the granule;

(c) the one or more particles of the particulate component have a mean size of more than 40 μm in their longest dimension and have a diameter less than the diameter of the granule; and

(d) *the granule has a mean size of at least 100 μm and less than 480 μm .*

App. Br. 10 (emphasis added).

² US 6,136,772, issued October 24, 2000 (“De Lima”).

³ WO 97/43482, published November 20, 1997 (“Herrman”).

⁴ US 6,010,736, issued January 4, 2000 (“Motoi”).

⁵ Rowe et al., Handbook of Pharmaceutical Excipients 42 (Pharmaceutical Press 2003) (“Rowe”).

B. DISCUSSION

De Lima discloses enzyme granules that may be used in feed compositions. De Lima, col. 10, ll. 37–40. The Examiner finds the enzyme granules have a mean size of 200–1000 μm , which overlaps the claimed range.⁶ Final Act. 4⁷ (citing De Lima, col. 10, ll. 30–36); Final Act. 8 (“even a slight overlap in range establishes a *prima facie* case of obviousness” (quoting *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003))). The Examiner does not find that the granules comprise an organic or vegetable flour particulate component as recited in claim 30. Final Act. 3–4. Nonetheless, the Examiner finds Herrman discloses enzyme granules comprising flour particles as claimed. Final Act. 5.

It is unclear how the Examiner is modifying De Lima’s feed composition in the obviousness rejection on appeal. On the one hand, it appears that the Examiner is proposing to replace the enzyme granules of De Lima with Herrman’s enzyme granules. *See* Final Act. 6–7 (concluding that it would have been obvious to one of ordinary skill in the art to substitute the granules of De Lima’s feed composition with the enzyme granules disclosed in Herrman). On the other hand, it appears that the Examiner is proposing to replace the absorbent core of De Lima’s enzyme granules with the flour particles disclosed in Herrman. *See* Final Act. 10 (proposing that the organic flour cores disclosed in Herrman would have been used

⁶ The Appellant argues that Mr. Marcussen, a named inventor in the instant Application and in De Lima, explains that De Lima does not enable granules having a mean size within the range recited in claim 30. App. Br. 6; Second Declaration of Eric Schmidt Marcussen dated April 10, 2018, at ¶ 3. In view of our reasons for reversal, *infra*, it is not necessary to address the Appellant’s argument.

⁷ Final Office Action dated July 12, 2018.

to produce enzyme granules in De Lima's absorption process). In both cases, however, the Appellant has demonstrated reversible error.

As for the Examiner's first proposed modification (i.e., replacing De Lima's enzyme granules with Herrman's enzyme granules), the Appellant argues that the mean size of Herrman's granules is outside the range recited in claim 30. More specifically, the Appellant argues that Herrman's granules preferably have a size of 200–1000 μm , and thus have a mean size of 600 μm . App. Br. 5. The Appellant argues that a mean size of 600 μm is "significantly greater" than the mean size recited in claim 30 (i.e., "at least 100 μm and less than 480 μm "⁸). App. Br. 5 (citing Declaration of Eric Schmidt Marcussen dated August 9, 2017, at ¶ 8).

The Appellant's argument is supported by the record. *See* Herrman 8, ll. 4–5 (disclosing that the size, *not* the mean size, of the granules preferably ranges from 200 to 1000 μm).

As for the Examiner's second proposed modification (i.e., replacing the absorbent cores of De Lima's granules with the flour particles disclosed in Herrman), the Appellant argues that De Lima and Herrman disclose different processes for producing enzyme granules. In particular, the Appellant argues that "the process described in Herrman is an agglomeration process comprising mixing the enzyme with powder to produce a particle, whereas De Lima uses a pre-produced absorbent core (without enzyme) which is able to absorb the enzyme." App. Br. 8. The Appellant argues that "Herrman does not disclose such a core." App. Br. 8; *see also* Reply Br. 6⁹ (arguing that "Herrman provides no indication regarding absorbency of the flour described therein"). Therefore, the Appellant

⁸ App. Br. 10.

⁹ Reply Brief dated June 16, 2019.

argues that one of ordinary skill in the art would not have been inclined to use Herrman's flour particles in De Lima's process with a reasonable expectation of success. Reply Br. 6.

In response, the Examiner contends that "whether Herman [sic] uses an agglomeration process or De Lima produces an absorbent core; is irrelevant." Ans. 12.¹⁰ To the contrary, the processes used to make the enzyme granules in De Lima and Herrman are probative in determining whether one of ordinary skill in the art would have considered the flour particles disclosed in Herrman to be a suitable substitute for the absorbent cores disclosed in De Lima.

De Lima discloses that the absorbent cores in the inventive granules are "capable of absorbing at least 5% w/w (based on the weight of the core) of water." De Lima, col. 2, ll. 26–27. De Lima discloses that a poorly absorbing core, on the other hand, is capable of absorbing less than 4% w/w of water. De Lima, col. 24, ll. 38–61. "With a poorly absorbing or non-absorbing core material," De Lima discloses that "agglomeration of the granules will normally occur upon introduction of only a small amount of water." De Lima, col. 3, ll. 21–23. In contrast, De Lima's inventive granules exhibit "substantially no attendant agglomeration." De Lima, col. 2, ll. 29–31.

Herrman does not disclose that the flour particles are absorbent. Herrman discloses that the flour particles are formed by treating flour with dry superheated steam. Herrman 7, ll. 1–7. The treated flour is then conditioned to a constant water content of a maximum of 15 wt%, cooled, and ground to a particle size distribution with the primary proportion of particle sizes in the range of 500 to 5 μm . Herrman 7, ll. 14–21.

¹⁰ Examiner's Answer dated April 16, 2019.

On this record, the Examiner has failed to establish that the resulting flour particles in Herrman are capable of absorbing at least 5% w/w (based on the weight of the particle) of water. Therefore, we find that one of ordinary skill in the art would not have been motivated to replace the absorbent cores in De Lima's enzyme granules with Herrman's flour particles.

In addition, the Examiner has failed to show that replacing the absorbent cores in De Lima's granules with Herrman's flour particles would have resulted in a granule having a mean size within the range recited in claim 30. *See* De Lima, col. 24, ll. 57–59 (disclosing that the use of a poorly absorbing core resulted in agglomerated lumps with dimensions of up to about 10 cm).

The Examiner does not rely on Motoi and/or Rowe to cure the deficiencies in the combination of De Lima and Herrman identified above.¹¹ Therefore, the obviousness rejection of claims 30–53 is not sustained.

C. CONCLUSION

The Examiner's decision is reversed.

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
30–53	103(a)	De Lima, Herrman, Motoi, Rowe		30–53

REVERSED

¹¹ The Examiner relies on Motoi to show that flour particles have a size of 200 microns and Rowe to show that bentonite has a particle size of 50–150 microns. Final Act. 3.