

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte JOB SCHIPPER, PETER VAN DER TOORN  
and TONKO BRUGGINK

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Appeal No. 1999-1298  
Application No. 08/667,167

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ON BRIEF

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Before ROBINSON, ADAMS and GRIMES, Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 45-65, which are all the claims pending in the application.

Claims 45 and 59 are illustrative of the subject matter on appeal and are reproduced below:

45. A process for prolonging the shelf life of primed non-germinated seeds comprising the steps of:

a) incubating primed non-germinated seeds under conditions selected from the group consisting of

(i) drying the primed seeds from about 1 to 7 days at a temperature range of about 3° to 40°C;

(ii) drying the primed seeds for not more than 24 hours to a moisture content of about 3 to 20% units lower than the moisture content of non-incubated primed seeds of the same species and maintaining the seeds in a container with minimal air and moisture exchange for about 1 to 7 days at a temperature range of about 3° to 40°C;

(iii) exposing the primed seeds to an osmoticum solution for about 1 to 7 days within the range of about -0.5 to about -0.4 MPa;

(iv) exposing the primed seeds to a heat shock at a temperature in the range of about 25° to 45°C for about 1 to 5 hours;  
and

(v) a combination of substeps (i) or (ii) or (iii) and (iv) above;  
and

b) obtaining incubated primed non-germinated seeds wherein the seed has a moisture content about 3 to 20% units lower than the moisture content of nonincubated primed non-germinated seeds of the same plant species and the incubated primed seeds have a prolonged shelf life without loss of viability as compared to the viability of nonincubated primed non-germinated seeds of the same plant species.

59. A process for prolonging the shelf life of primed non-germinated seeds comprising the steps of:

a) incubating primed non-germinated seeds by exposing the seeds to a heat shock from about 1 to 5 hours at a temperature range of 25° to 45°C;

b) obtaining incubated primed seeds wherein the seed has a moisture content about 3 to 20% units lower than the seed moisture content of nonincubated primed non-germinated seeds of the same plant species;  
and

c) storing the incubated seeds at a temperature in the range of about 3° to 25°C and at a relative humidity of 20 to 90%

wherein the incubated seeds have a prolonged shelf life without loss of viability as compared to the viability of the nonincubated primed non-germinated seeds of the same plant species.

Appeal No. 1999-1298  
Application No. 08/667,167

The references relied upon by the examiner are:

Finch-Savage	4,905,411	Mar. 6, 1990
Rowse	5,119,589	Jun. 9, 1992

(Hartmann), Plant Propagation, Principles and Practices, pp. 100-116 (Hartmann et al. eds., Prentice Hall, 2<sup>nd</sup> ed. 1968)

Hegarty, "Seed Activation and Seed Germination Under Moisture Stress," New Phytol., Vol. 78, pp. 349-359 (1977)

(Bewley), Physiology and Biochemistry of Seeds, in Relation to Germination, Vol. 2, pp. 7-59 (Bewley et al. eds., Springer Verlag, 1982)

Bradford, "Manipulation of Seed Water Relations Via Osmotic Priming to Improve Germination Under Stress Conditions," Hort. Science, Vol. 21, No. 5, pp. 1105-1111 (1986)

#### GROUND OF REJECTION

Claims 45-65<sup>1</sup> stand rejected under 35 U.S.C. § 103 as being unpatentable over Rowse in view of Finch-Savage, Hegarty, Bradford, Bewley and Hartmann.

We reverse.

#### DISCUSSION

In reaching our decision in this appeal, we considered appellants' specification and claims, in addition to the respective positions articulated by the appellants and the examiner. We make reference to the examiner's Answer<sup>2</sup> for the

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<sup>1</sup> We note the following typographical error. The examiner's statement of the rejection does not include claim 65. However, the examiner's explanation of the rejection clearly includes a discussion of claim 65. See, e.g., Answer, page 14. In addition, appellants correctly note that claims 45-65 are included in this rejection. See, e.g., Brief, page 5. Accordingly, this typographical error is corrected herein.

<sup>2</sup> Paper No. 13, mailed January 5, 1998.

examiner's reasoning in support of the rejections. We further reference appellants' Brief<sup>3</sup> for the appellants' arguments in favor of patentability.

THE REJECTION UNDER 35 U.S.C. § 103:

The test of obviousness is "whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention." In re Gorman, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). Furthermore, as set forth in In re Antonie, 559 F.2d 618, 619, 195 USPQ 6, 8 (CCPA 1977), "[j]ust as we look to a chemical and its properties when we examine the obviousness of a composition of matter claim, it is this invention as a whole, and not some part of it, which must be obvious under 35 USC 103. Cf. In re Papesch, 50 CCPA 1276, 315 F.2d 381, 137 USPQ 43 (1963)."

In evaluating appellants' invention as a whole, we note that the claims include a limitation of "obtaining incubated primed non-germinated seeds wherein the seed has a moisture content of about 3 to 20% units lower than the moisture content of nonincubated primed non-germinated seeds of the same plant species...." The examiner recognizes this claim limitation (Answer, bridging paragraph, pages 16-17):

While appellants' claims may detail exactly "3-20% units" lower than the moisture content of "non incubated primed seeds", because the moisture content of primed seeds is not clearly defined in any independent claim, it is not clear how the ultimate moisture content of the incubated seed might define over the "dried back", primed seed of the prior art. However, appellants' "3-20% units" range of moisture

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<sup>3</sup> Paper No. 12, received November 7, 1997.

content is a broad range. “Drying back” as taught by the prior art, would reduce the moisture [content] of [a] seed to a safe storage moisture level; a level at which the pre-germinative changes in enzyme and metabolic activity are slowed or halted, to achieve the stated object of increasing the storage longevity of seed, like the 9% taught by Rowse, line 65, column 7.

Upon review of this record, we note that Rowse, Hegarty and Bradford are the only references relied upon that teach drying back “primed non-germinated seeds.” In fact, Rowse disclose a process of “priming” seeds, and discloses at column 1, lines 14-17 that “[m]ethods involving partial hydration of the seeds followed by drying back to the original moisture content are sometimes referred to as ‘Seed Hardening’.... Seed priming can be carried out by partial hydration ... after which the seeds may be dried back to their original water content.” Stated differently, the seeds are dried back ~100% units lower than the moisture content of nonincubated primed non-germinated seeds, back to their original water content prior to priming.

The examiner directs our attention (Answer, page 17) to Rowse, column 7, line 65, wherein the primed seeds are “dried back to 9% water content.” However, we note, as do appellants (Brief, page 11) that by drying back the seeds to a water content of 9%, the water content of the dried back seeds is the same as the seeds’ original water content. See, Rowse, column 7, lines 50-51. Therefore, although Rowse discloses (column 3, lines 18-22) that seeds can be dried back to a lower water content to facilitate storage after priming, there is no disclosure of a lower water content in the range of appellants’ claimed invention.

While, as the examiner represents (Answer, page 6), Bradford teach “the processes of priming, [and] redrying, ‘a process termed ‘hardening’...” the examiner failed to explain the nexus between this reference, and moisture content in the range of appellants’ claimed invention. The same is true of Hegarty, relied on by the examiner (id.) to teach “that raising then lowering the moisture level of seeds, before radicle emergence, is tolerated by and may even benefit seeds.”

Bewley and Hartmann fail to make up for the deficiencies in the references discussed above. As appellants point out (Brief, page 12) neither reference is concerned with the moisture content of primed non-germinated seeds.

We note that Finch-Savage disclose a process of priming seeds and then drying the seeds to a moisture content of “around 20% or less, e.g. 15% being preferred.” Finch-Savage, column 6, lines 49-59. However, Finch-Savage is concerned with germinated seeds (see e.g., abstract, and column 5, line 62), not “primed non-germinated seeds” according to the claimed invention. The examiner failed to explain the nexus between this reference and the claimed invention.

While we do not disagree with the examiner’s conclusion (Answer, page 16) that “[d]rying back seed[s] to ensure safe storage for longer periods is routine to the seedsman,” we can not agree with the examiner’s position that the combination of references relied upon render appellants’ claimed invention prima facie obvious. Prima facie obviousness based on a combination of references requires that the prior art provide “a reason, suggestion, or motivation to lead an inventor to combine

Appeal No. 1999-1298  
Application No. 08/667,167

those references.” Pro-Mold and Tool Co. v. Great Lakes Plastics Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629 (Fed. Cir. 1996). While a person of ordinary skill in the art may possess the requisite knowledge and ability to modify the protocol taught by the examiner’s combination of references, the modification is not obvious unless the prior art suggested the desirability of the modification. In re Gordon, 733 F.2d 900, 902, 211 USPQ 1125, 1127 (Fed. Cir. 1984). Here we see no such reason to modify the references as applied, to obtain incubated primed non-germinated seeds wherein the seed has a moisture content about 3 to 20% units lower than the moisture content of nonincubated primed non-germinated seeds of the same plant species.

Accordingly, in our opinion, the examiner has failed to provide the evidence necessary to support a prima facie case of obviousness. Where the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Therefore, we reverse the rejection of claims 45-65 under 35 U.S.C.

§ 103 as being unpatentable over Rowse in view of Finch-Savage, Hegarty, Bradford, Bewley and Hartmann.

REVERSED

Douglas W. Robinson )

Appeal No. 1999-1298  
Application No. 08/667,167

Administrative Patent Judge	)	
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	)	BOARD OF PATENT
Donald E. Adams	)	
Administrative Patent Judge	)	APPEALS AND
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Eric Grimes	)	
Administrative Patent Judge	)	

Appeal No. 1999-1298  
Application No. 08/667,167

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