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Datasheet for the decision of 8 October 2010

Case Number: T 1988/07 - 3.3.01

Application Number: 01989312.2

Publication Number: 1341411

IPC: A01N 37/16

Language of the proceedings: EN

Title of invention:
Method and composition for washing poultry during processing

Applicant:
ECOLAB INC.

Opponent:
-

Headword:
Recycling poultry wash waters/ECOLAB

Relevant legal provisions:
EPC Art. 54, 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Main request: novelty (yes) - no clear and unambiguous disclosure of the claimed method - inventive step (yes) - non-obvious alternative"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1988/07 - 3.3.01

D E C I S I O N
of the Technical Board of Appeal 3.3.01
of 8 October 2010

Appellant: ECOLAB INC.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 4 July 2007 refusing European patent application No. 01989312.2 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: P. Ranguis
Members: G. Seufert
L. Bühler

Summary of Facts and Submissions

I. The Appellant lodged an appeal on 21 August 2007 against the decision of the Examining Division dated 4 July 2007 refusing the European patent application No. 01989312.2 and filed a written statement on 13 November 2007 setting out the grounds of appeal.

II. In this decision the following numbering will be used to refer to the documents:

(1) EP 0985 349 A2
(2) US 5,683,724
(3) US 5,879,732
(4) US 4,790,943
(5) US 5,882,253
(6) Test Report submitted by the Appellant with letter of 18 April 2007

III. In the decision under appeal the Examining Division held

- that the subject-matter of the main request filed with letter of 18 November 2002 and resubmitted with entry into the European phase on 29 April 2003 was not novel over document (2),
- that the auxiliary requests 1 and 2 filed with letter of 18 April 2007 did not comply with the requirements of Article 123(2) EPC, and
- that the auxiliary request 3 filed during the oral proceedings before the Examining Division lacked inventive step in view of the teaching of document (2).

IV. With the statement setting out the grounds of appeal the Appellant defended the main request as well as the auxiliary requests 1 and 2 on which the decision under appeal is based and filed new auxiliary requests 3 and 4.

V. In a communication accompanying the summons to oral proceedings the Board expressed its preliminary opinion. In particular, the Board indicated that the recovery, the treatment and the reuse of poultry wash water appeared to be known measurements as already acknowledged in the description of the patent application and confirmed by the documents (3)-(5) attached to the Board's communication. Furthermore, the Board raised clarity objections against the last claim of each request and claims 4 and 6 of auxiliary request 4.

VI. In reply to the Board's communication, the Appellant filed with letter of 6 September 2010 an amended main request and an amended auxiliary request 1 replacing the main request and auxiliary request 1 previously on file. The Appellant also filed an amended auxiliary request 2 replacing the previous auxiliary request 4.

VII. At the beginning of the oral proceedings, being asked by the Board to clarify its requests, the Appellant confirmed the maintenance of the amended main request as well as the amended auxiliary requests 1 and 2 filed with letter of 6 September 2010; all other requests were withdrawn.

Claim 1 of the main request, being the only independent claim, reads as follows:

"1. A method of reducing a microbial population on poultry during processing comprising:
applying to the poultry during processing a mixed peroxycarboxylic acid antimicrobial composition in an amount and time sufficient to reduce the microbial population;
recovering the applied mixed peroxycarboxylic acid antimicrobial composition; and
adding to the recovered composition a sufficient amount of a mixture of peroxycarboxylic acids to yield a recycled mixed peroxycarboxylic acid antimicrobial composition,
the method further comprising applying the recycled composition to poultry during processing."

Claim 1 of auxiliary request 1 and claim 1 of the auxiliary request 2 are identical. They differ from claim 1 of the main request in that the recycled mixed peroxycarboxylic acid antimicrobial composition obtained after the addition of a sufficient amount of a mixture of peroxycarboxylic acids to the recovered composition "**comprises at least about 2 ppm of one or more mono- or di-peroxycarboxylic acids having up to 6 carbon atoms; and at least 0.5 ppm of one or more carboxylic acids having up to 12 carbon atoms**".

VIII. The arguments of the Appellant as provided in writing and during oral proceedings, to the extend that they are relevant for the present decision, can be summarized as follows:

The subject-matter of claim 1 of the main request is novel over the disclosure of document (2), as the claimed method is not clearly and unambiguously disclosed therein. There is no unambiguous disclosure for the skilled person that the term "recycling" as used in document (2) should be understood as being equivalent to the steps of recovering a substance and adding something to this substance to obtain a recycled substance, which can then be reused. Furthermore, when assessing novelty it is not permissible to piece together different parts of a prior art document, which are present in completely separate entities, in order to artificially create a particular embodiment, which would destroy novelty.

Document (3) should be considered as the closest state of the art. In view of this document, the technical problem to be solved was the provision of a process for the reduction of microbial population during poultry processing which is highly effective in reducing the microbial population in the product, is cost-effective and uses less critical compounds. The proposed solution, namely recycling the wash waters after treatment with peroxycarboxylic acid was not obvious for the skilled person from document (3) alone or in combination with either document (1) or (2).
Document (1) is concerned with the sanitizing of meat products, mainly beef, using fresh water. Recycling is not mentioned and there is no indication that peroxycarboxylic acid would be a suitable replacement for the strong oxidants otherwise used in the prior art for the treatment of poultry wash waters. In fact, such an indication cannot be found in any of the available pieces of prior art. Document (2) is merely concerned

with less contaminated chiller water and does not contain a clear indication for reapplying the water to the poultry.

IX. The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request or auxiliary requests 1 and 2, filed with letter dated 6 September 2010, all previous requests being withdrawn.

X. At the end of the oral proceedings the decision under appeal was announced.

Reasons for the Decision

1. The appeal is admissible.

Main request

2. *Amendments*

The subject-matter of claim 1 of the main request is properly supported by claims 1, 26 and 27 as originally filed. The dependent claims 2-29 are supported by claims 2-25 and 28-31 of the application as filed.

The main request therefore meets the requirement of Article 123(2) EPC.

3. *Novelty*

3.1 Claim 1 of the main request is directed to a method of reducing microbial contamination on poultry during

processing comprising the steps of applying a mixed peroxycarboxylic acid composition, recovering the applied composition, adding to the recovered composition a peroxycarboxylic acid mixture to yield a recycled antimicrobial composition and applying the recycled composition to poultry during processing.

3.2 Document (2), which the Examining Division considered as anticipating the subject-matter of claim 1 of the main request before it, discloses a method for preventing microbial growth in aqueous streams used for transport or processing food products comprising the step of applying a peroxycarboxylic acid or a mixture of peroxycarboxylic acids to the aqueous stream. In particular document (2) discloses an automated method of controlling microbial growth in such streams, whereby the amount of the peroxycarboxylic acid(s) in the stream is controlled by maintaining the aqueous stream at an oxidation-reduction-potential (ORP) between 280 to 460 mv with respect to an Ag/AgCl reference electrode (column 3, line 50 to column 4, line 48, claims). Document (2) is mostly concerned with the processing of vegetables. However, in example 8 of document (2) samples of chiller water (chilled aqueous process stream in which the poultry were placed for at least 30 minutes) from a poultry factory were obtained and treated for testing purposes with dosings of a) peracetic acid, b) a combination of peracetic acid and peroctanoic acid, c) sodium hypochlorite and d) chlorine dioxide. In the Board's understanding the testing in example 8 of document (2) aims at demonstrating the suitability of peroxycarboxylic acid(s) as an antimicrobial agent in aqueous poultry chiller streams and thus the suitability of the

peroxycarboxylic acid(s) as an antimicrobial agent in the first step of the presently claimed method, namely the application of a mixed peroxycarboxylic acid composition to the poultry during processing in the chiller. This example does not describe the steps of recovering the applied mixed peroxycarboxylic acid antimicrobial composition, the addition of peroxycarboxylic acid to yield a recycled mixed peroxycarboxylic acid antimicrobial composition and the further step of applying the recycled composition to the poultry.

Thus, example 8 of document (2) alone does not anticipate the subject-matter of claim 1 of the main request. This has also been acknowledged by the Examining Division in the contested decision (page 4, second paragraph). In order to conclude lack of novelty the Examining Division combined example 8 of document (2) with other parts of the description, namely the disclosure in column 3, line 50 to column 4, line 48 and column 1 (erroneously called column 2 in the contested decision), line 54 to column 2, line 7.

3.3 In this context, it is to be remarked that according to the jurisprudence of the Boards of Appeal regarding the examination of novelty, the teaching of a document is indeed not limited to the detailed information given in the examples, but embraces the disclosure of that document as a whole. Nevertheless, it is a general and consistently applied principle of the Boards of Appeal that for deciding novelty there must be a **direct and unambiguous** disclosure in the state of the art which **inevitably** leads the skilled person to the subject-matter falling within the scope of the claims. Applying

this principle, the Board is of the opinion that for the examination of novelty different passages in a document can only be combined if there is a clear teaching combining them.

3.4 The passage in columns 3 and 4 of document (2) referred to by the Examining Division discloses the prevention of microbial growth in aqueous streams used for transporting or processing food comprising the application of peroxycarboxylic acid(s) to the aqueous streams. In a more preferred embodiment the use of a dispensing and controlling system is disclosed which allows for a continuous addition of peroxycarboxylic acid controlled by maintaining a certain ORP (see also point 3.2 above). The purpose of such an automated system is to maintain a steady state of peroxycarboxylic acid during processing or transportation. This passage does not mention any recovery, recycling or reapplication step. Neither are such recovery, recycling and reapplication steps an inevitable part of the automated system as can be seen in fig. 6 of document (2) representing the basic set up of the automated system. The water can merely flow through the flume system (or a poultry chiller), while the level of peroxycarboxylic acid in the system is maintained within the required limits.

The paragraph bridging columns 1 and 2 of document (2) is part of the section "background of the invention" and explains in general the problems which might arise if process waters are reused. It mentions that process water resulting from cleaning, cooling, heating, cooking or other processing steps can be used once and discarded, or a major part can be reused in which case

it is subject to contamination with organic matter and microbes. Vegetable washers, vegetable cooling baths, poultry chillers and meat washers are mentioned as examples of process waters.

There is, however, no clear teaching in document (2) to combine
(a) the method described in columns 3/4 of document (2) using an automated dispensing system, which method does not necessarily include recovery, recycling or reapplication steps, with
(b) a general statement mentioned in the section "background of the invention" referring to the reuse as well as the discarding of process waters and
(c) example 8, demonstrating the suitability of peroxycarboxylic acid as antimicrobial agent in poultry chillers.

Such a combination is the result of an arbitrary "mosaicing" of features found in different parts of document (2), which has been made in the knowledge of the invention and with the purpose of reconstructing the claimed method.

3.5 Hence, the Board concludes that there is no clear and unambiguous disclosure in document (2), which inevitably leads the skilled person to the presently claimed method. Accordingly, claim 1 of the main request is novel within the meaning of Article 54 EPC.

4. *Inventive step*

4.1 The patent in suit is directed to a method of reducing microbial growth on poultry during processing whereby a

mixed peroxycarboxylic acid composition is applied to the poultry during processing, the applied composition is recovered, treated with a mixture of peroxycarboxylic acid and the so obtained recycled composition is reapplied to the poultry.

4.2 A similar method already belongs to the state of the art. Document (3), which has been introduced into the procedure during the appeal proceedings, describes a method of processing poultry with minimal microbial growth (document (3), column 1, lines 5-11). In this method ozone is applied to poultry as antimicrobial agent during processing. The process water of the different process steps is collected, treated with ozone and, after further treatment with a biofilter, UV-light and chlorine, recycled into the process and reapplied to the poultry (document (3), claims; figure 5; column 15, lines 9-16).

4.3 Document (2), which had been considered as the closest prior art by the Examining Division, is concerned with the inhibition of microbial growth, for example in poultry chillers, by keeping the antimicrobial agent at a constant level during processing or transportation of the food product. It does however not disclose the steps of recovering the applied composition, treating the recovered composition with peroxycarboxylic acid and reapplying it to the poultry. Thus, although both documents (2) and (3) aim at the same objective as the claimed invention, namely the reduction of microbial growth in food processing, document (2) has less relevant technical features in common with the claimed invention than document (3).

Thus, the Board, in accordance with the Appellant, considers that document (3) represents the closest prior art and hence takes it as the starting point for assessing inventive step.

4.4 In view of this state of the art, the problem to be solved by the present invention was the provision of an alternative method for reducing microbial population on poultry during processing.

4.5 The Appellant argued during oral proceedings that the claimed method was more effective against microbial growth and avoided cross contamination. It was also more economic in that wash waters are reused and the recycling step is simpler, thereby lowering the production costs. Finally it was less critical for the outward appearance and later consumption of the treated poultry. However, in the absence of any evidence in support of its assertions, the Appellant's arguments are not considered convincing.

4.5.1 Concerning the alleged improved efficacy, the data in column 9, lines 60-65 of document (3) cannot be directly compared with the data according to the test report provided by the Appellant as the details in the recovering, recycling and reapplication steps were not exactly the same. For example, according to document (3) additional cooling during poultry processing is provided to further reduce microbial growth. Furthermore, it is not apparent whether or not the amount of antimicrobial agent is the same. Concerning the issue of cross-contamination, it is to be remarked that the method of document (3) also aims at avoiding cross contamination (column 7, lines 51-56, column 14,

lines 3-6 and 45-49) and the Appellant has not provided any evidence that the presently claimed method has any advantages over the prior art in this respect.

4.5.2 With regard to lowering the production costs by reusing the wash water there can be no difference between the claimed method and the prior art method, since document (3) also reuses and reapplies the wash waters thereby lowering the production costs (document (3) column 15, lines 13-16).

4.5.3 Neither is it apparent that the recycling method according to claim 1 of the main request is simplified compared to the recycling method according to document (3). In the latter the water to be reapplied is first treated with ozone, which is an antimicrobial agent, and after filtration is **further** treated by exposure to ultraviolet light and addition of chlorine, which according to the Appellant represents a critical component. The presently claimed method by using the expression "comprising" does not exclude further treatment steps. This is also apparent in view of claims 18 or 19 of the main request referring to a further treatment step with UV light. Furthermore, in the absence of directly comparable data between peroxycarboxylic acid and ozone as antimicrobial agent, there is no evidence that the claimed method achieves a similar antimicrobial effect with fewer "treatment" steps and therefore simplifies the method according to document (3).

4.5.4 Evidence in support of the alleged advantages of the claimed method over document (3) with regard to the

appearance or later consumption of the processed poultry has not been provided.

4.6 As the solution to the underlying technical problem as defined in point 4.4 above the patent application according to the main request proposes the use of a mixed peroxycarboxylic acid composition as antimicrobial agent during poultry processing and in the recycling step.

4.7 In view of the test report (document (6)) the Board is satisfied that the problem is solved.

4.8 It then remains to be decided whether or not the proposed solution is obvious in view of the cited prior art.

4.8.1 The highly industrialised processing of poultry from the initial washing of the birds via scalding, dress rinsing, inside-outside bird washing after evisceration, sanitizing rinsing, chilling to packaging requires large quantities of water. Recycling these process waters in order to reduce cost has therefore become a necessity for the poultry processing industry. However, since the process waters inevitably become contaminated with organic matter, like blood, tissue, grease etc., which provide an ideal ground for the growth of bacteria, the poultry processing industry in order to avoid the shut-down of production due to cross contamination and in order to guarantee that the poultry can be safely consumed is forced to make sure that the recycled water is safe to use. Thus, the process waters, before they can be recycled, are usually purified by treatment with strong oxidants,

like ozone, as taught in the closest prior art, document (3). Other strong oxidants like chlorine, potassium permanganate or chlorine dioxide, optionally in the presence of strong acids, were also described as suitable antimicrobials in the treatment of process waters resulting from poultry processing plants before their reuse (document (4), column 3, lines 26-31). Neither document (3) nor document (4) mention peroxycarboxylic acid as being suitable for this purpose.

Thus, document (3) can neither alone nor in combination with document (4) render the claimed subject-matter obvious.

4.8.2 Document (1), which describes the use of antimicrobial compositions comprising peroxycarboxylic acids for the treatment of meat products, including poultry, is not concerned with the recycling and reuse of process waters. This fact has also been acknowledged in the contested decision and the document has not been further considered. Thus, document (1) cannot provide the skilled person with an incentive to replace ozone as the antimicrobial agent in the treatment of contaminated process waters by peroxycarboxylic acid mixtures.

4.8.3 The same conclusion can be drawn for document (2). As explained in point 3.2 above, example 8 of document (2) is merely a test example to demonstrate the suitability of peroxycarboxylic acid(s) as antimicrobial agent during poultry chilling. In fact, this disclosure is considered to be equivalent to the teaching of document (1). Accordingly, it can no more than

document (1) provide the skilled person with an incentive to use peroxycarboxylic acid(s) instead of ozone as antimicrobial agent in the treatment of contaminated process waters.

4.9 For the reasons set out above the Board concludes that the subject-matter of the claims of the main request involves an inventive step within the meaning of Article 56 EPC.

4.10 In view of the outcome of the decision there is no need to consider the auxiliary requests 1 and 2.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Department of first instance with the order to grant a patent on the basis of the Main request submitted with letter dated 6 September 2010 and the description yet to be adapted.

The Registrar: The President

M. Schalow P. Ranguis