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**Datasheet for the decision  
of 20 January 2016**

**Case Number:** T 1233/14 - 3.3.09  
**Application Number:** 09789517.1  
**Publication Number:** 2408316  
**IPC:** A23K1/16, A23K1/18, A23L1/315  
**Language of the proceedings:** EN

**Title of invention:**

POULTRY MEAT AND EGGS COMPRISING BENEFICIAL FATTY ACIDS

**Applicant:**

Monsanto Technology LLC

**Headword:**

**Relevant legal provisions:**

EPC Art. 84, 123(2), 54, 56

**Keyword:**

Amendments - added subject-matter (no)  
Clarity - (yes)  
Novelty - (yes)  
Inventive step - (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
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Case Number: T 1233/14 - 3.3.09

**D E C I S I O N  
of Technical Board of Appeal 3.3.09  
of 20 January 2016**

**Appellant:**  
(Applicant)

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**Representative:**

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**Decision under appeal:**

**Decision of the Examining Division of the  
European Patent Office posted on 4 December 2013  
refusing European patent application No.  
09789517.1 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** M. O. Müller  
**Members:** N. Perakis  
E. Kossonakou

## Summary of Facts and Submissions

- I. This appeal lies from the decision of the examining division refusing European patent application No. 09789517.1. The claims concerned were those filed upon entry into the regional phase before the EPO. Claim 1 reads as follows:
- "1. A poultry feed comprising
- a. stearidonic acid (SDA)
  - b. gamma linolenic acid (GLA)
  - c. additional feed components; and,
- wherein said poultry feed comprises at least 0.5 wt.% SDA and at least 0.1 wt% GLA".
- II. The examining division considered that the claims did not comply with the requirements of Article 123(2) EPC and that the subject-matter of claim 1 lacked an inventive step in view of D1, D2 or D3, each considered independently.
- D1: US 2003/0000477 A1;  
D2: US 2008/0032335 A1; and  
D3: US 2008/085841 A1.
- III. The applicant (in the following the appellant) filed an appeal against the decision of the examining division on 7 February 2014. The statement setting out the grounds of appeal was filed on 14 April 2014, accompanied by three sets of claims corresponding to one main and two auxiliary requests. The appellant requested that the decision of the examining division be set aside and that a patent be granted on the basis of the set of claims of the main request, alternatively on the basis of the first or second auxiliary request.

The appellant argued that all the requests fulfilled the requirements of Articles 123(2) and 56 EPC.

- IV. With a communication dated 20 July 2015 the board gave its preliminary view on the clarity, added subject-matter and inventive step of the appellant's requests.
- V. By letter of 30 September 2015, the appellant submitted new sets of claims corresponding to one main request and two auxiliary requests.
- VI. Oral proceedings took place before the board on 20 January 2016. During these proceedings the appellant filed a new request replacing all the requests on file and a description adapted to this new request. Claim 1 of this request reads as follows:
- "1. A poultry feed comprising
- a. a transgenic soybean oil comprising stearidonic acid (SDA);
  - b. gamma linolenic acid (GLA);
  - c. additional feed components; and
- wherein said poultry feed comprises at least 0.5 wt.% SDA and at least 0.1 wt.% GLA".
- VII. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 11 of the appellant's sole request and of description pages 1 to 55, all filed in the oral proceedings before the board.
- VIII. The arguments presented by the appellant in its written submissions and at the oral proceedings may be summarised as follows:

- All the claims of the main request complied with the requirements of Article 123(2) EPC.
  - Paragraph [0040] of the application as filed provided a basis for the SDA and GLA amounts in claim 1. The "%" in this paragraph were weight percentages as required by claim 1. This was implicit from the footnote to table 3, which stated that "The percentage levels refer to the percentage of the DHA or SDA ethyl esters in the total feed composition on a gram per gram basis".
  - The concentrations of ALA and eicosenoic acid in claims 7 and 8 respectively were weight percentages of ALA and eicosenoic acid on the basis of the total fatty acid content of the poultry feed as implicitly derived from paragraph [0040] as filed.
- The subject-matter of claim 1 involved an inventive step in view of D1 considered as closest prior art.
  - D1 disclosed a method of feeding domestic fowl in order to improve the "nutritional value, flavor, tenderness, and/or consumer acceptability" of the fowl meat. The birds were, however, fed very low levels of at least one long chain polyunsaturated fatty acid, preferably a mixture of an omega-3 fatty acid and an omega-6 fatty acid. Furthermore, the preferred fatty acids were DHA (C22:6 n-3), DPA (C22:5 n-3) and DPA (C22:5 n-6). D1 did not disclose GLA (C18:3 n-6) as a component of the poultry feed. Finally, D1 did not disclose a

transgenic soybean oil comprising SDA (C18:4 n-3).

- The problem to be solved by the present invention was to provide a poultry feed including a transgenic soybean oil comprising SDA which was capable of increasing the concentration of highly unsaturated fatty acids (HUFA) including DHA in the poultry.
  
- D1 did not disclose the use of transgenic soybean oil. Furthermore, it did not disclose to preferably use SDA. Thus, the results observed with the claimed poultry feed were unexpected (see table 21 and paragraphs [0144] and [145]). The skilled person would not have had any technical reason to select a poultry feed comprising a transgenic soybean oil with the expectation that such a selection would provide a beneficial poultry feed that increased the concentration of HUFA including DHA (C22:6 n-3) in poultry.

## **Reasons for the Decision**

### 1. Amendments

The board acknowledges that the claims of the appellant's sole request, filed during the oral proceedings before the board, fulfil the requirements of Article 123(2) EPC. Thus:

- Independent claim 1 results from the combination of
  - claim 19 as filed (poultry feed comprising stearidonic acid (SDA), gamma linolenic acid (GLA) and additional feed components) with the features disclosed in
  - paragraphs [0016], [0024], [0026], and [0027] (transgenic soybean oil) and
  - paragraph [0040] as filed (amounts of SDA and GLA in %).

The concentration of SDA and GLA, expressed as wt%, as required by claim 1, is implicit from the footnote of table 3 of the application as filed. This passage states that

"The percentage levels refer to the percentage of the DHA or SDA ethyl esters in the total feed composition on a gram per gram basis".

Since a gram per gram percentage is a weight percentage, the percentages of SDA given in table 3 of the application as filed refer to weight percentages. From this, the skilled person would derive that the amounts ("%") of SDA, and by way of analogy of GLA, in paragraph [0040] of the application as filed are actually also weight percentages.

Furthermore, all quantities given in absolute terms are expressed in the application as filed in grams, such that it is clearly and unambiguously derivable from the application as filed that

percentage values ("%"), such as those in paragraph [0040], actually refer to weight percentages (wt%).

Consequently, the concentrations in claim 1 expressed as wt% are disclosed in the application as filed.

- The additional features of dependent claims 2 and 3 are disclosed in paragraph [0040] as filed (see in particular page 11, line 31).
- The additional features of dependent claims 4 and 5 are disclosed in paragraphs [0059] and [0063] as filed (see in particular page 18, line 14).
- The additional features of dependent claim 6 are disclosed in paragraph [0040] as filed (see in particular page 12, lines 3-4).
- The additional features of dependent claim 7 are disclosed in paragraph [0040] as filed (see in particular page 11, line 28 and page 12, lines 4-5).
- The additional features of dependent claim 8 are disclosed in paragraph [0040] as filed (see in particular page 12, lines 6-7).
- The wt% concentrations of ALA and eicosenoic acid in respective claims 7 and 8 relate to the total fatty acid content of the poultry feed. This derives from the disclosure of paragraph [0040] as filed (see in particular page 11, lines 27-28), which refers to the SDA concentration of less than about 35% of the total fatty acid in the feed. In



analogy to this disclosure, the ALA and eicosenoic acid concentrations of less than about 25% and less than about 0.7%, respectively, can also only relate to the total fatty acid content of the poultry feed. Furthermore, in the same way as for claim 1, it is clearly and unambiguously derivable from the application as filed that the percentage values disclosed in paragraph [0040] for the ALA and eicosenoic acid concentrations are weight percentages.

- The additional features of dependent claims 9 and 10 are disclosed in paragraph [0029] as filed.
- The additional features of dependent claim 11 are disclosed in paragraph [0060] as filed.

## 2. Clarity

The board acknowledges that the subject-matter of the claims fulfils the requirements of clarity.

Furthermore, the appellant adapted the description to the set of claims filed during the oral proceedings with the consequence that these claims are now supported by the description.

## 3. Novelty

- ### 3.1
- As set out below when discussing inventive step, the subject-matter of the only independent claim 1 differs from D1 by various features.

The claimed subject-matter is not disclosed in any of the further documents cited in the international search report either. In particular, D2, D3 and D6 do not

disclose a poultry feed with amounts of SDA and GLA as claimed.

3.2 Novelty can thus be acknowledged.

4. Inventive step

4.1 Closest prior art

4.1.1 The present patent application relates to the enhancement of desirable characteristics in poultry products through the incorporation of beneficial fatty acids in animal feed (see page 1, first paragraph). These fatty acids include stearidonic acid SDA (an omega-3 polyunsaturated fatty acid (PUFA)) and gamma linolenic acid GLA (an omega-6 PUFA).

4.1.2 D1 (abstract; claim 1), which also relates to the improvement of desirable properties of poultry products, in particular their nutrition value, lies within the same technical field. It discloses a poultry feed which comprises the combination of an omega-3 and an omega-6 HUFA (paragraph [0004]; HUFA is synonymous to PUFA). D1 is therefore considered to represent the closest prior art.

4.1.3 D6 (US 2007/0004678 A1), cited in the communication of the board, relates to fatty acid compositions comprising SDA and GLA (paragraphs [0007] and [0009]). When used in animal feed, these fatty acids supplement the normal daily diet of the animal and prevent fatty acid imbalances (paragraphs [0010]-[0014]). The aim of D6 is different from the aim of the patent application which seeks to improve the nutritional quality of the animal meat or egg. Thus D6 compared with D1 is considered to represent a more remote prior art.

4.1.4 In its decision, the examining division also considered each of D2 and D3 as the closest prior art.

However, D2 is not directed to any poultry feed, let alone the enhancement of desirable characteristics in poultry products, so it is not suitable as closest prior art.

D3 is directed to the improvement of both the nutritional quality and shelf life of food products through the use of transgenic plant-derived stearidonic acid (paragraph [001]). Though it mentions in passing poultry feed as a food product, it focuses on food products for humans (see examples of D3). Hence, D3 is less suitable as the closest prior art than D1.

4.2 Disclosure of D1

4.2.1 As already said above, D1 discloses a poultry feed which comprises the combination of an omega-3 and an omega-6 PUFA (paragraph [0004]). The preferred omega-3 and omega-6 PUFAs are DHA and DPA (see, e.g., paragraph [0018] and the example of D1). SDA is mentioned in passing as an example of an omega-3 PUFA (paragraphs [0005] and [0006]). GLA is not disclosed in D1. The omega-3 and omega-6 PUFAs are disclosed to be in the form of triglycerides, phospholipids or ethyl esters (paragraph [0011]). As a possible source of the omega-3 PUFA, D1 discloses genetically engineered micro-organisms such as *Schizochytrium* sp or *Cryptocodium* sp (paragraph [0012]).

Although D1 discloses that the nutritional value of the fowl meat can be improved by increasing the level of the omega-3 and omega-6 PUFA in the meat, it does not

disclose that this is achieved by increasing the amount of these PUFAs in the poultry feed. In fact, what D1 discloses is feeding **low** omega-3 and omega-6 PUFA contents (see paragraph [0014], in particular, lines 1-4). As a result, the PUFA fed during the production cycle of fowl is disclosed to preferably vary from about 0.2 to about 2.4 g/kg final body weight (paragraph [0019]). This PUFA concentration in the poultry feed is much lower than the SDA amount in the claimed feed:

Tables 19 and 20 of the present patent application show a feed intake for days 15 to 41 of 3,966 Kg and a final carcass weight of 3,661 Kg. If the feed had 0.5 wt% SDA (the lower limit in claim 1), the total amount of SDA consumed was 19.83 g ( $0.005 \times 3,966$ ). This means that the SDA intake per kg carcass weight was 5.4 g/kg ( $19.83 \text{ g} \text{ divided by the carcass weight } 3,661 \text{ kg}$ ). Hence, even at the lower limit of claim 1, the SDA amount (5.4 g/kg) is more than twice as high as the total PUFA amount fed in D1 (0.2 to 2.4 g/kg).

- 4.2.2 Thus the subject-matter of claim 1 differs from the disclosure of D1 in that the poultry feed comprises:
- as an omega-6 PUFA: GLA
  - higher amounts of SDA with the
  - SDA being derived from a transgenic soybean plant.

#### 4.3 Problem and solution

The patent application states that the technical problem consists in the provision of a poultry feed capable of increasing the concentration of highly unsaturated fatty acids (PUFA) including DHA in the poultry (paragraphs [0001], [0011] and [0012] as filed).

The technical evidence of the application, namely example 3, tables 18 and 21-24, shows that this is achieved by the use of a transgenic soybean oil comprising SDA and GLA in the claimed amounts. In particular, it shows that a feed with a transgenic soybean oil compared with a conventional soybean oil increases the amount of DHA in the poultry tissues, which is unexpected because SDA was shown in the literature to be converted to EPA (C20:5 n-3) but not to DHA (paragraph [0144] as filed).

#### 4.4 Obviousness

The skilled person starting from the disclosure of D1 and seeking to increase the concentration of PUFA including DHA in the poultry tissues would not find any hint in the art to apply SDA and GLA in the claimed amounts. As already said above, D1 mentions SDA only in passing and does not disclose any GLA. In fact, the entire document focuses on DHA as the omega-3 PUFA and DPA as the omega-6 PUFA. Furthermore, D1 instructs the skilled person to use low amounts of the omega-3 and omega-6 PUFAs in order to increase the level of omega-3 and omega-6 PUFA in the poultry meat (paragraph [0004], last four lines; paragraph [0014], lines 1-3; paragraph [0019], lines 1-3). Thus D1 teaches away from the type of omega-3 and omega-6 PUFAs as required by claim 1, namely SDA and GLA, and from the required amounts.

Even if the skilled person ignored this and considered D6, which discloses a diet with high amounts of at least one of SDA and GLA, produced from genetically modified plant seeds such as soybean seeds (paragraphs [0029] and [0030]), he would not arrive at the claimed subject-matter. More specifically, D6 teaches away from the use of soybean oil - PUFA in the

form of triglyceride. In fact, D6 discloses that PUFAs should be in the form of phospholipids because they improve the PUFA absorption and incorporation (paragraph [0034]).

But even if the skilled person was to ignore this teaching of D6, in the absence of any hint in the art, he would not expect that using SDA in the form of its triglyceride would result in the increase of DHA in the poultry tissues.

4.5 On the basis of the above, the board comes to the conclusion that the subject-matter of claim 1 involves an inventive step.

5. Dependent claims

Dependent claims 2-11 concern specific embodiments of claim 1, which involve *mutatis mutandis* an inventive step.

6. Description

The appellant submitted new description pages 1-55 during the oral proceedings before the board. The board acknowledges that the description fulfils the requirements of the EPC.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division with the order to grant a patent on the basis of the following documents:

- claims 1 to 11 and
- description pages 1 to 55,

all filed during the oral proceedings of  
20 January 2016.

The Registrar:

The Chairman:



M. Cañueto Carbajo

M. O. Müller

Decision electronically authenticated