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20 November 2009; 14:30

To the  
European Patent Office  
Directorate General 2  
Erhardtstrasse 27

**D-80 298 M u n i c h**

**Opposition EP 1 429 795 - Pelargonium**

Proprietor of the patent: Schwabe GmbH & Co KG, 76 227 Karlsruhe (DE)

Opponent O II: a) African Centre for Biosafety, Johannesburg (ZA)  
b) Bern Declaration, CH-8004 Zurich (CH)

Mr. President,  
Ladies and Gentlemen,

In preparation for the hearing on 25 January 2010 pertaining to the abovementioned case, we would like to hereby inform you, in the name and on behalf of Opponent O II,

1. that the representatives of Opponent O II will be speaking in **German and in English** at the hearing; and

2. that they require simultaneous translation from the German procedural language **into English**.

We will submit our response to the provisional opinion of the opposition division to you in the next few days.

Yours sincerely  
DOLDER & PARTNER

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Prof. Dr. F. Dolder  
Attorney

**- Letter of confirmation of a Fax transmission -**

FAX 004989 / 23 99 44 65  
TOTAL 12 pages  
24 November 2009

To the  
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**D-80 298 Munich**

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b) Bern Declaration, CH-8004 Zurich (CH)

Mr. President,  
Ladies and Gentlemen,

In response to your summons dated 14.7.2009 and provisional opinion of the opposition division, we hereby submit the following

**Response**

in the name and on behalf of Opponent O II and, in following up on our notice of opposition dated 10.3.2008, we *request that*:

1. The application in accordance with the Opposition dated 10 March 2008, to revoke the Patent EP 1 429 795 "Process for the production of Pelargonium extracts etc." in its entirety shall be maintained, also in view of the new petition (with reduced patent claims) submitted by the proprietor of the patent on 18.12.2008.

2. Language of the proceedings: The following persons will speak on behalf of Opponent O II at the hearing: the undersigned Attorney, *Mrs. Mariam Mayet*, Executive Director, African Centre for Biosafety (in English) and Mr. François Meienberg, member of the management of the Bern Declaration, (in German). As already mentioned, we therefore require *simultaneous translation from the German procedural language into English*.

## 1. Prior art

The arguments in the response refer to the following additional documents, attached to this submission, which are supplementary to the consecutively numbered documents D1 to D33 cited in the provisional response by the OD dated 14.7.2009. Numbering in *Annex I – Literaturbogen* of the OD dated 14.7.2009 is provisionally continued:

- D34 Nature Conservation Act (Ciskei) No. 10 of 1987, Proclamation No. 3 of 1999 (excerpt);
- D35 Frank S. D'Amelio, *Botanicals, A Phytocosmetic Desk Reference*, CRC Press 1999, Pages 39-48 (percolation);
- D36 James Green, *The Herbal Medicine-Makers Handbook*, Crossing Press Berkeley 2000, Pages 146- 154 (maceration), Pages 158-166 (percolation)
- D37 Austin M. Patterson, *Physical Constants of Organic Compounds*, in: *Handbook of Chemistry and Physics*, Hg. C.D. Hodgman, 44th ed. Cleveland 1963: Chemical Rubber Company, Page 735 et seq.
- D38 P.J. Houghton , Amala Raman, *Laboratory Handbook for the Fractionation of Natural Extracts*, London etc. 1998: Chapman & Hall, S. 27 et seq.;
- D39 Affidavit Dr. Stafford II dated 16 November 2009.

## 2. The patent claims

The independent Claim 1, dated 18.12.2008 and substantially limited following the Opposition, concerns a process for the production of a *Pelargonium sidoides* and/or *Pelargonium reniforme* extract, realised as two different variants. An analysis of properties results in the flowchart below, showing the structure of this limited Claim 1 of the patent in-suit; the response refers to the character designations for the individual properties (process steps).

## 3. Art. 53 EPC (Exceptions to patentability)

### 3.1 “Ordre public” Art. 53 (a) EPC

1. First development of the teaching of the patent in-suit: In their notice of opposition, the opponents expressed the opinion that, based on the records on file at the time, the possibility cannot be excluded that nature conservation and environmental protection laws in the country of origin of the two *Pelargonium* species, South Africa, were completely or partially ignored when the technical teaching of the patent in-suit was initially developed. Based on this information, the opposition division *requested* the proprietor of the patent to present proof of compliance with the relevant legislation in this respect (Section 3.1, Pages 5/6 of the provisional opinion).

In this context, it must be pointed out that both *Pelargonium* species in question were categorised as *protected flora* pursuant, for example, to **D34** *Schedule 6* of the *Ciskei Nature Conservation Act of 1987* (with amendments until 1999), many years before the South African enforcement laws with respect to the CBD (NEMBA 2004 with regulations) *entered into force*. Section 21 of this *Act* required approval for picking and harvesting this category of plant prior to the priority date of this patent in-suit already and a *licence* was additionally required in accordance with the *Licences Act of 1982* to trade this category of plants.

**D34** Ciskei Nature Conservation Act of 1987, with amendments until 1999

2. Threat to nature and the environment when exploiting the teaching of the patent in-suit commercially: Commercial exploitation of the teaching of the patent in-suit undoubtedly *severely endangers nature and the environment* in the relevant provinces of the Republic of South Africa (Eastern Cape provinces).

Since the priority date of the patent in-suit, the two *Pelargonium* species have been harvested at a steadily increasing rate in South Africa's *Eastern Cape Province* and supplied to foreign companies for commercial use. This development has meanwhile led to a *moratorium* on authorisations for collecting and trading in the two *Pelargonium* species.

### 3.2 Plant species Art. 53 (b) EPC

The proceedings G 2 / 06 – Thomson/Wisconsin dated 25.11.2008 have since established an interpretation of Art. 53 EPC contrasting with the formalistic one: According to this changed assessment approach in G 2/06, a *whole content approach*, no longer a formalistic *claims only approach*, should now be applied in the assessment of a teaching with respect to exclusion of patentability pursuant to Art. 53 – as has also been applied by the opposition division in the case at hand (Point 3.2, Page 6 of 14.7.):

G 2 / 06: 21. Secondly the Appellant (= Wisconsin) contends that, in order to fall under the prohibition of Rule 28 c) (...) EPC, the use of human embryos *must be claimed*.

22. However, this Rule (...) does not mention claims, but refers to “invention” in the context of its exploitation. What needs to be looked at is not just the explicit wording of the claims but *the technical teaching of the application as a whole* as to how the invention is to be performed. Before human embryonic stem cell cultures can be used they have to be made. Since in the case referred to the Enlarged Board the only teaching of how to perform the invention to make human embryonic stem cell cultures is the use (involving their destruction) of human embryos, this invention falls under the prohibition of Rule 28 c) (...) EPC. (...) To restrict the application of Rule 28 c) (...) EPC to *what an applicant chooses explicitly to put in his claim* would have the undesirable consequence of making avoidance of the patenting prohibition *merely a matter of clever and skilful drafting of such claim*.

Arguing as in G 2/06 and in the context of Art. 53 (b) EPC, the *full disclosed content of the invention* should be assessed and not deliberately formulated, isolated *patent claims* in order to decide whether the invention, i.e. the complete technical teaching, falls under the patenting prohibition. Therefore, whilst the wording of Art. 53 (b) refers to plant species (and essentially biological methods for plant cultivation), it also encompasses *manufacturing or work procedures*, effectively resulting in the *actual* monopolisation of individual plant species.

A formalistic application of the patenting prohibition of Art. 53 (b) EPC, motivated under legal policy, which differentiates between Process and Product claims, cannot be justified: The objective of a legal policy-motivated patenting prohibition as per Art. 53 (b) is to prevent monopolisation of certain technical teachings. *This objective can only be achieved* if the prohibition covers the complete technical teaching of an invention *as such* and does not differentiate based on the *category* of patent claims under which this teaching is ultimately formulated and “sold” to the EPO. A formalistic approach to the patent claims alone would ultimately defeat the objectives of Art. 53 (b).

Where would we otherwise end up? Every patenting prohibition under Art. 53 could be circumvented by simply selecting a clever way of formulating claims, especially by selecting a claim category (product, substance, process, use) which would *not* fall under the wording of the patenting prohibition. It would be too easy if the objective of patenting prohibitions could be defeated by clever phrasing of patent claims and if *de facto* commercial monopolisation of, for instance, plant species, could be achieved despite patenting prohibition.

In the present context, this means: It must be considered whether systematic and commercial exploitation of the inventive teaching of the patent in-suit, *independent of various formulations of the patent claims*, ultimately leads to *de facto* monopolisation of a limited number of plant species. We already proved in our notice of opposition that this is undoubtedly the case with the two plant species *Pelargonium sidoides* and *Pelargonium reniforme*:

The limited Process claims 1 to 5 refer to two extraction methods “*from Pelargonium sidoides and/or Pelargonium reniforme*” and as such to products of a clearly defined and *limited number* of plant species: As a result, these Process claims bring about a legal monopolisation of both *Pelargonium* species since, apart from protecting the process in the narrow sense, they inevitably also bring about the legal monopolisation of the species in question *as a product*.

With the aid of the patent in-suit, the total trade and specifically the importation of plants and parts of plants of both *Pelargonium* species in question could undoubtedly be controlled and *de facto* monopolised in the EPO member states. As a product, such parts of plants already constitute *preparatory actions* for violation of the process claims 1 to 5 and as such would fall within the scope of protection of these claims.

In particular, trade with these plants and parts of plants of this species, especially their importation into Europe, could be prevented as an indirect patent infringement pursuant to § 10 (1) of the German and § 22 paragraph 3 to 5 of the Austrian Patent Act, since the third party (recipient) in question either knows, or it is obvious under the circumstances, that plant material of the relevant species is suited and intended to be used for utilisation of the invention within the framework of patent claims 1 to 5 of the patent in-suit.

As a result, the process claims of the patent in-suit would therefore lead to significant monopolisation of the plants of the *Pelargonium species*, or of *Pelargonium sidoides* and thus to monopolisation of a limited number of plant species in terms of Art. 53 (b). In terms of G 2 / 06, they thus constitute a *circumvention* of the patenting prohibition of Art. 53 (b) EPC and can therefore not be granted.

#### 4. Novelty Art. 54, EPC

The opposition division (Page 8) is of the provisional opinion that *no* cited prior art directly discloses all the features of the new Process claim 1. **D15** and **D17** disclosed most of the relevant process properties in the context, but the documents lacked

- for the percolation variant: information on the process step for *mashing*,
- for the maceration variant: explicit disclosure of a *two-step* maceration process.

#### 5. Inventive level Art. 56 EPC

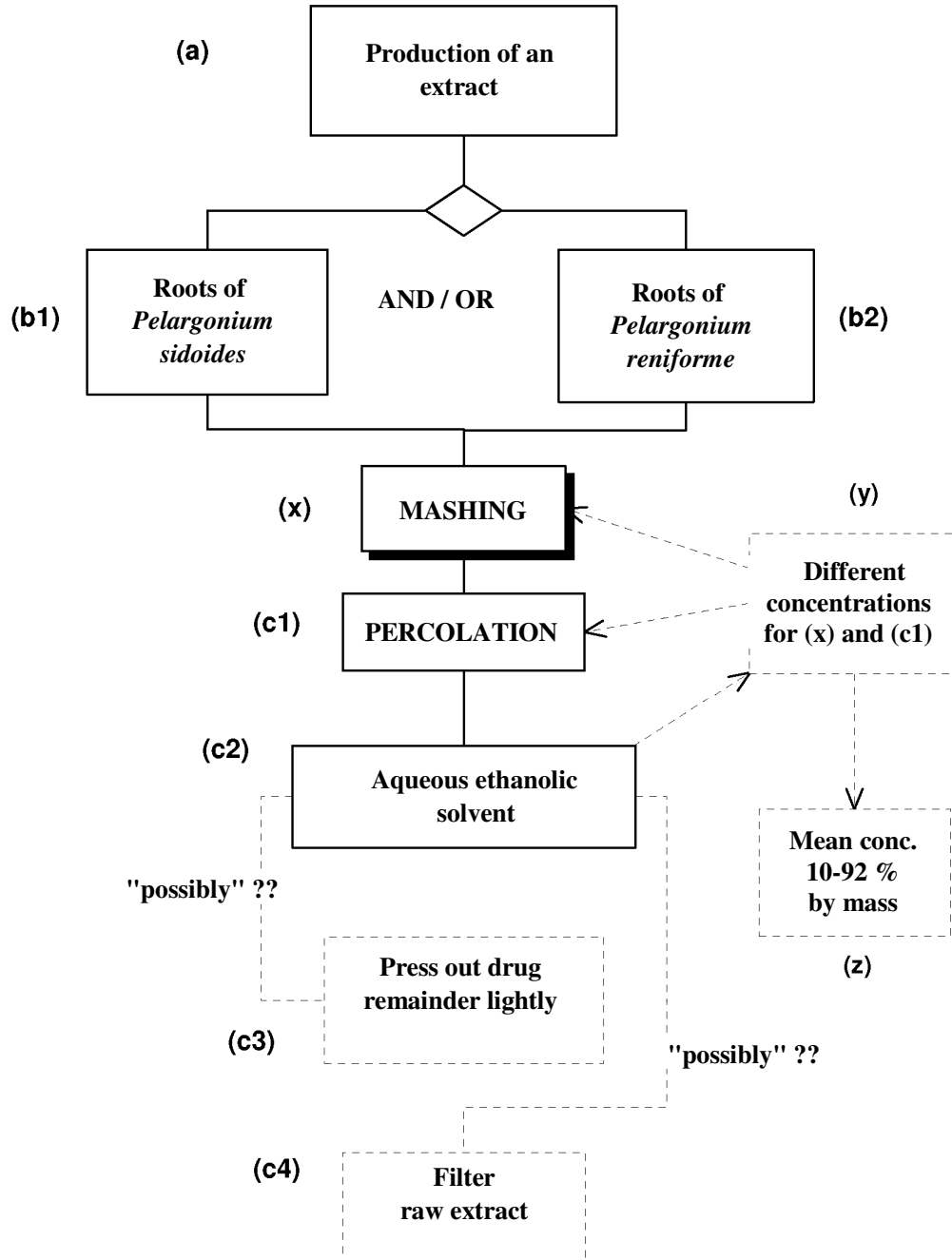
In accordance with Section [0008] of the description, the purpose of the patent in-suit is to provide an *improved gentle* process for the production of *Pelargonium sidoides* and *Pelargonium reniforme* extracts, with a *higher yield* and simultaneous *improved effect of the extracts*. According to Section [0007], the disadvantages of prior art, described as relatively low yield or *high temperature stress* in the *Soxhlet* extraction method, are in this way to be avoided.

##### 5.1 Percolation variant

Claims 1 to 5 of the **percolation variant** lack the inventive level in respect of **D3, D8, D15** in combination with **D10, 17, 35, 36**.

**D3 (Kolodziej / Kayser), D8 (Secheyay) and D15** disclose ethanolic extracts or fluid extracts from *Pelargonium sidoides* or *reniforme*, produced by percolation at room temperature. Based on this prior art, the problem to be solved may be seen as providing a *gentle* extraction process with a *higher yield*, whilst *improving the effect of the extracts* at the same time.

**EP 1 429 795: Analysis of characteristics**  
**Claim 1a): Percolation variant**



## Documents

- D10** Hagers Handbuch) Page 408;  
**D17** Article on Tinctures and Article on Extracts (production through percolation);  
**D35** Frank S. D'Amelio, Pages 39-48 (percolation);  
**D36** James Green, Pages 158-166 (percolation)

disclose, however, that it is appropriate, inevitable in fact, to mash the extraction product (“the drug”) in a batch process before the percolation step, to prevent the percolation column from breaking *during* percolation due to swelling of the extraction product:

**D17** (DAB): Tinctures, production through percolation: *“If necessary, the drug is reduced to smaller suitably sized pieces, thoroughly mixed with part of the prescribed extraction fluid, left to stand for an appropriate time and then transferred into a percolator.”*

**D35** (D'Amelio), Page 40: *“4.1.2 Percolation: General Method for Extracting Botanicals: Moisten 1000 g (1 kg) powdered botanical with a sufficient quantity of the prescribed menstruum to render it evenly and distinctly damp and macerate for 6 hours in a tight covered container. This will enable the plant cells to absorb the menstruum.”*

**D36** (Green), Page 161: *“Moistening the Herb: This is a preliminary moistening that is done before the herb is packed into the cone. It allows the dampened powder to swell upon absorbing the liquid. Some plant powders, if dampened and packed in the cone before swelling occurs, can expand to such a degree that the cone ends up being packed too tightly to allow the liquid that is added later to flow down through.”*

The average skilled person may be expected to be familiar with such hand/textbooks in his field of expertise, in this case: phytochemistry / phytomedicine. Based on the information provided in **D17**, **D35** and **D36**, it is pointed out directly to the average skilled person seeking higher yields, that mashing of the extraction product (characteristic **(x)** in the flowchart of the percolation variant) is a standard component of the percolation process. It thus appears obvious to the average skilled person to apply this textbook-based process step of mashing (**x**) also in this case to the improvement of the yield of the Pelargonium extract.

“Reasonable / realistic expectation of success” as opposed to “Hoping for success”:  
 According to the familiar criterion for biotechnological patents, a distinction must be made between *reasonable expectation of success* and *mere hope of achievement* in the assessment pursuant to Art. 56 EPC. Based on combination of D3, D8, D15 with the information in D10, D17, D35, D36, the result after addition of the process step of mashing (characteristic **x**) of the percolation variant fully qualifies as reasonable expectation, thus not surprising the skilled person.

Based on these relationships, Claims 1 to 5 lack inventive level in respect of D3, D8, D15 in combination with D10, D17, D35, D36.



## 5.2 Maceration variant

Claims 1 to 5 of the **maceration variant** lack inventive level in respect of **D3, D8, D15** in combination with **D10, 17, 35, 36**.

**D3 (Kolodziej / Kayser), D8 (Sechehaye) and D15** disclose ethanolic extracts or fluid extracts from *Pelargonium sidoides* or *reniforme*, produced through maceration at room temperature and used for medical purposes.

Based on this prior art, the problem to be solved may be seen as providing a *gentle* extraction process *with a higher yield*, whilst also aiming to improve the *effect of the extracts*.

But we have already pointed out in our notice of opposition (Page 10, no. 3) that the *two-step process* of maceration (characteristics d3 and d5) is textbook knowledge, based on the simple fact that single-step maceration cannot routinely deliver the complete or satisfactory yield of extracted substances. This conclusion in the notice of opposition is supplemented by the following documents:

**D 10** Hagers Handbook, Page 408, Section Maceration: Re-maceration;

**D35** (D'Amelio), Page 44: “*Maceration is another procedure. 100 to 200 g botanical are placed in a suitably sized vessel with a tight lid. Add 1000 ml menstruum and let macerate for 7 to 14 days with shaking several times a day. Strain and press the botanical to remove all menstruum. Pass additional fresh menstruum through the strainer until 100 ml percolate are collected. Filter, usually through a Whatman #1 or equivalent.*”

**D38** (Houghton), Pages 27/28: “*Infusions are prepared by leaving the plant material to soak in the solvent (generally at room temperature) for a period of time, with or without intermittent shaking, followed by filtration to separate away the plant debris. If the plant material has settled, then the upper solvent extract can be decanted off, and replaced if necessary with fresh solvent. (...)*”

**D 39** (Affidavit Dr. Stafford II), No. 23: *back-extraction process*.

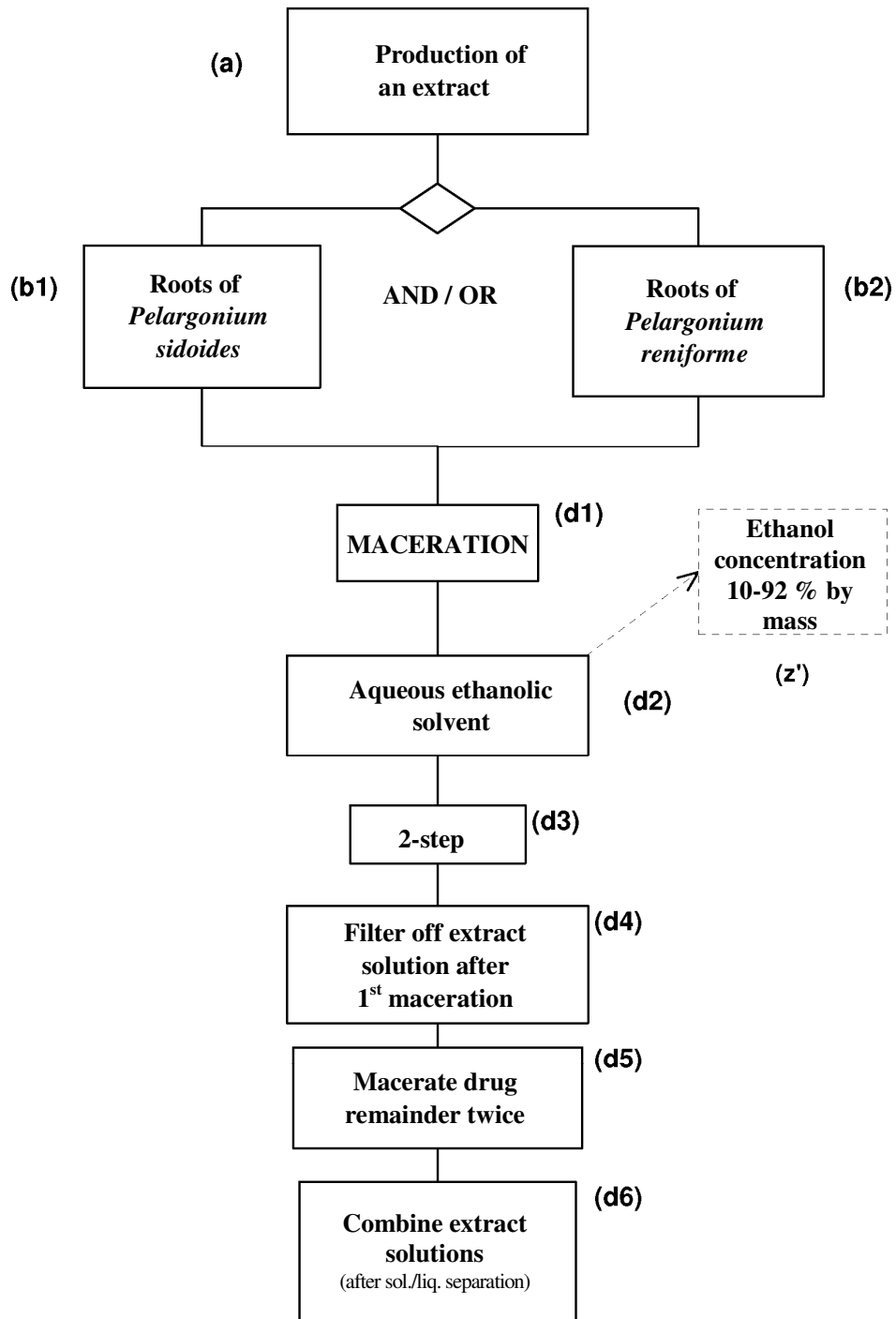
The further process steps, namely that, after the initial maceration, the remainder is “decanted, filtered and the residue pressed out” (characteristic d4), also certainly qualify as textbook knowledge, familiar to the average skilled person:

**D17 (DAB)**: Article on tinctures, production through maceration: “*The drug residue is separated from the extraction fluid and, if necessary, pressed out. In the latter instance, the two obtained fluids are combined.*”

Article on extracts, production through maceration: *identical wording*.

**D36** James Green, Page 149 (maceration): “*9. Pour off (decant) the clear tincture from the top, press the remaining wet pulp, and combine these two liquids (...)*”

**EP 1 429 795: Analysis of characteristics**  
**Claim 1b): Maceration variant**



The average skilled person may be expected to be perfectly familiar with hand/textbooks in his field of expertise, in this case: phytochemistry / phytomedicine. Based on the information in **D10, D17, D35, D36**, it is directly pointed out to the average skilled person seeking higher yields, that the second step (characteristics **(d3)** and **(d5)** of the flowchart of the maceration variant) is a standard component of the percolation process. It was thus obvious to the average skilled person to apply this textbook process step in the second stage of maceration in this case also, to improve the yield of the *Pelargonium* extract.

“Reasonable / realistic expectation of success” as opposed to “Hoping for success”: According to the familiar criterion for biotechnological patents, a distinction must be made between *reasonable expectation of success* and *mere hope of achievement* in the assessment pursuant to Art. 56 EPC. Based on combination of D3, D8, D15 with information in D10, D17, D35, D36, the addition of the second maceration process step (characteristics **d3 and d5 x**) of the maceration variant fully qualifies as assured expectation, thus not surprising the skilled person.

Claims 1 to 5 of the **maceration variant** thus also lack inventive level in respect of **D3, D8, D15** in combination with **D.10, 17, 35.36**

### 5.3 Changing the solvent in the two variants of Claim 1

Claims 1 to 5 of the two variants percolation and maceration lack inventive level in respect of **D3, D8, D15, D24** in combination with **D36 and D37**.

**D3 (Kolodziej / Kayser), D8 (Sechehayé) , D15/16 and D24** disclose ethanolic extracts (fluid extracts) from *Pelargonium sidoides* or *reniforme*, containing different ethanol concentrations as solvents:

D8 (Sechehayé)	11.23 %	(Page 39)
D24 (Haidvogel)	11.2 % m/m	(Page 303)
D15/D16	30 %	φ mother tincture
	43 %	from D2 (= 2nd decimal dilution)

Based on this prior art, the problem to be solved may be seen as varying the solvent to provide a *gentle* extraction process for the roots of *P. sidoides* and *P. reniforme* with *higher yield*, whilst aiming to *improve* the medicinal *effect of the extracts* at the same time. With reference to examples 5 to 9 in Section [0023] of the description, the desired higher yield manifests itself primarily in a higher concentration of *total phenolic content*, the *total coumarins* and the resultant *antioxidative potential* (µg Trolox/mg) in the extract or dry extract.

In solving the problem it must, however, be assumed that the selection of suitable solvents is very limited from the start when producing extracts *for medical purposes*: Apart from water as a solvent, for physiological reasons *only ethanol* is medically compatible without limitation and is therefore allowed for medical tinctures and extracts (**D39** Affidavit Dr. Stafford II, No. 12).

In solving the problem, it must furthermore be considered from the start that bacterial contamination of the extract must be prevented when producing extracts for medical purposes. The simplest way to achieve this is by an appropriate ethanol concentration in the solvent; for this purpose, a *lower limit of 15% ethanol w/w* is recommended in the end product, otherwise the extracts will be quickly destroyed by bacterial contamination.

**D36** Green Page 86: “*I recommend you strive for maximum extraction using a minimum percent of alcohol, keeping in mind that **15 to 20 percent alcohol by volume** – of the end product – is probably the **lowest alcohol content** you can contrive that will preserve the extract for any length of time.*”

The task here is primarily to increase the total phenolic and coumarin content in the extract and thereby the anti-oxidative potential of the extract (acc. to Sections [0023] to [0026] of the description). The fact that the *P. sidoides* and *P. reniforme* roots contain coumarin derivatives and polyphenol compounds was disclosed already in 1988 in **D9** and has been confirmed repeatedly ever since (e.g. in **D3** and **D24**).

**D37** discloses, however, that coumarin (substance no. 2855) exhibits a solubility of 0.01g per 100 ml in water at 25 °C, but a solubility of 13.7 g per 100 ml in ethanol: expressed trivially, coumarin is thus 1370 times more soluble in ethanol than in water, at room temperature.

**D37** further discloses that *gallic acid* (substance no. 4160) has a solubility of 1.16 g per 100 ml in water at 25 °C, but a solubility of 27.2 g per 100 ml in ethanol: Once again, trivially expressed, gallic acid is 23 times more soluble in ethanol than in water, at room temperature. That the solubility of this compound increases with increasing solvent temperature also in water, is irrelevant in this case since, according to the problem definition (Section [0007] in the description), extraction is, for obvious medical reasons, only allowed under gentle conditions, i.e. especially the *temperature stress* the extraction product is subjected to when using a Soxhlet method should be avoided.

**D39** (Affidavit Dr. Stafford II ), No. 8, 10, 16 and 17 gives similar information.

**D36** (Pages 155/156) also contains a long list of plant extracts for medical purposes which are produced with an ethanol concentration of >50% in the solvent. For gentle production of plant extracts at room temperature, it is thus widespread and common practice to work with ethanol concentrations of >50%.

The average skilled person may be expected to be very familiar with hand/textbooks in his field of expertise, in this case: the *Handbook of Chemistry*, found in every laboratory worldwide. Based on the information of **D37** and **D36**, it is pointed out directly to the average skilled person seeking higher yields of total coumarin and total phenolic content in the extract, that the ethanol content in the solvent should be increased, based on the prior art of 30% or 43% in **D15/D16**: Based on the information in **D37**, is there thus *anything more obvious* than to *increase* the ethanol content in the solvent?

Why it should be *surprising*, given this proven prior art that, “*as the ethanol content in the extraction medium increased, the total phenolic content in the resultant extract increased steadily without, as might be expected, reaching a maximum at average (which ?) ethanol concentrations*” (according to Section [0011] of the description) is not readily evident and would possibly require in depth and critical substantiation by the proprietor of the patent.

According to the familiar criterion for biotechnological patents, a distinction must be made between *reasonable expectation of success* and *mere hope of achievement* in the assessment pursuant to Art. 56 EPC. The effect of increasing the ethanol content in the solvent from 30 / 43 % as in prior art D15/16 to a maximum of 92 % (**characteristic z**) is *fully as expected*, in view of the combination of D3, D8, D15/16, D24 and the information in **D37**, and thus not surprising to the skilled person.

In the final analysis, Claims 1 to 5 of both variants (percolation, maceration) therefore lack inventive level pursuant to Art. 56 EPC, also in view of **D3, D8, D15/16, D24** in combination with **D36** and **D37**.

Yours sincerely  
DOLDER & PARTNER

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Prof. Dr. F. Dolder  
Attorney

**Annexures as per Index via DHL**