

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing (*day/month/year*)
27 November 2018

Applicant's or agent's file reference
859101HCF

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/IB2018/057423

International filing date (*day/month/year*)

26 September 2018

Priority date (*day/month/year*)

26 September 2017

International Patent Classification (IPC) or both national classification and IPC

G01N 33/02 (2006.01) G01N 5/00 (2006.01)

Applicant

THE NEW ZEALAND INSTITUTE FOR PLANT AND FOOD RESEARCH LIMITED

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| ☒ | Box No. I | Basis of the opinion |
| ☐ | Box No. II | Priority |
| ☐ | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| ☐ | Box No. IV | Lack of unity of invention |
| ☒ | Box No. V | Reasoned statement under Rule 43 <i>bis</i> .1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement |
| ☐ | Box No. VI | Certain documents cited |
| ☐ | Box No. VII | Certain defects in the international application |
| ☐ | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA

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Date of completion of this opinion

27 November 2018

Authorised Officer

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IB2018/057423

Box No. I	Basis of this opinion
1.	With regard to the language , this opinion has been established on the basis of: ☒ The international application in the language in which it was filed ☐ A translation of the international application into, , which is the language of a translation furnished for the purposes of international search (under Rules 12.3(a) and 23.1(b)).
2.	☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43 <i>bis</i> .1(a))
3.	☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing: a. ☐ forming part of the international application as filed: ☐ in the form of an Annex C/ST.25 text file. ☐ on paper or in the form of an image file. b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file. c. ☐ furnished subsequent to the international filing date for the purposes of international search only: ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)). ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4.	☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5.	Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY		International Application No. PCT/IB2018/057423									
Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement										
1. Statement <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top;"> Novelty (N) </td> <td style="width: 40%; vertical-align: top;"> Claims 9-14, 16-23 Claims 1-8, 15, 24-29 </td> <td style="width: 30%; text-align: center; vertical-align: top;"> YES NO </td> </tr> <tr> <td style="vertical-align: top;"> Inventive step (IS) </td> <td style="vertical-align: top;"> Claims NONE Claims 1-29 </td> <td style="text-align: center; vertical-align: top;"> YES NO </td> </tr> <tr> <td style="vertical-align: top;"> Industrial applicability (IA) </td> <td style="vertical-align: top;"> Claims 1-29 Claims NONE </td> <td style="text-align: center; vertical-align: top;"> YES NO </td> </tr> </table>			Novelty (N)	Claims 9-14, 16-23 Claims 1-8, 15, 24-29	YES NO	Inventive step (IS)	Claims NONE Claims 1-29	YES NO	Industrial applicability (IA)	Claims 1-29 Claims NONE	YES NO
Novelty (N)	Claims 9-14, 16-23 Claims 1-8, 15, 24-29	YES NO									
Inventive step (IS)	Claims NONE Claims 1-29	YES NO									
Industrial applicability (IA)	Claims 1-29 Claims NONE	YES NO									
2. CITATIONS AND EXPLANATIONS: <u>CITATIONS</u> D1: Hickson B., "Quality assessment of avocados by means of dry matter content", Ministry of Agriculture and Rural Development Plant Protection and Inspection Services (PPIS) STATE OF ISRAEL, June 2006, [online], [retrieved from internet on 26 November 2018] <URL:https://www.unece.org/fileadmin/DAM/trade/agr/meetings/capacity-building/2006_mojmirovce-SK/Dry%20matter%20content%20of%20avocados%20%28June%202006%29.pdf> D2: Norell R. J. et al., "Measuring Potato Dry Matter Content on the Farm", January 2016, [online], [retrieved from internet on 26 November 2018] <URL:http://www.extension.uidaho.edu/publishing/pdf/CIS/CIS1219.pdf> <u>NOVELTY (N)</u> Regarding claims 1 and 2, D1, D2 each disclose a method for estimating the dry matter content of a fruit or vegetable (D1: pages 6-26, D2: pages 1-3), the method comprising the steps of providing material from the fruit or vegetable (D1: avocado, D2: cull potatoes), homogenising the material (D1: avocado slices cut into small pieces, see pages 18-19, D2: potato slices), applying a portion of the material to a support (D1: avocado slice on glass slide, step 3.4 of page 8, D2: potato slices in a container), weighing the support and homogenised material (D1: weight P₁ in step 3.5 of procedure, page 8, D2: page 3, calculating Dry Matter part), drying the homogenised material (D1: drying in microwave oven, step 3.6 of page 8, D2: drying method, page 2), weighing the support and dried homogenised material (D1: weight P₂ in step 3.6 of page 8, D2: page 3, calculating Dry Matter part), and calculating dry matter content of the homogenised material based on the difference between the weight of the support and homogenised material and the weight of the support and dried homogenised material (D1: step 3.7 of page 8, page 26, D2: page 3, calculating Dry Matter part), wherein the dry matter content of the homogenised material provides the estimate of the dry matter content of the fruit or vegetable (D1: dry matter content of avocado is estimated, D2: dry matter content of potato is estimated). Regarding claim 3, wherein the material is from the part of the fruit or vegetable that is consumed (D1: avocado slices are consumed, D2: potato slices are consumed). Regarding claim 4, wherein the fruit or vegetable is a fruit or vegetable for which dry matter is used as indicator of quality, preferably the fruit or vegetable is selected from the group as claimed in the claim (D1: avocado, D2: potatoes). Regarding claims 5-7, wherein the material is from the outer pericarp of a fruit (D1: page 17, D2: pericarp of potato). Regarding claim 8, wherein homogenising breaks open cells in the material (D1, D2: slicing/cutting inherently breaks open cells). Regarding claim 15, wherein the portion of homogenised material weighs as claimed (D1: page 18,) Regarding claim 24-29, wherein the homogenised material is dried to a temperature as claimed (D1: oven heating, pages 10, 21, 23, D2: Drying methods, page 2).											

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Therefore, claims 1-8, 15 and 24-29 are not novel and do not comply with PCT Article 33(2) for the reason described above.

Claims 9-14 and 16-23 are novel and therefore comply with PCT Article 33(2) because the prior art documents do not disclose the additional features as claimed in these claims.

INVENTIVE STEP (IS)

Given the above novelty objection, claims 1-8, 15 and 24-29 do not involve an inventive step.

Regarding claims 9-14, D1, D2 disclose cutting/slicing the fruit and vegetables for homogenising the material. However, these documents fail to disclose various other methods of homogenising the material as claimed. However, these methods are all well known in the art. Therefore, it is considered that it would be obvious to a person skilled in the art to select one method from the list of several obvious known alternatives in the art and which would be available for use by the person skilled in the art (PSA), rendering the claims not inventive.

Regarding claim 16, D1 fails to disclose the specific quantity of homogenised material as claimed. However, it is considered that it would be within the routine skill of a person skilled in the art to select the quantity of the material required for testing based on type of fruit/vegetable and also based on the requirement of the intended use, rendering the claim not inventive.

Regarding claims 15-16, D2 discloses the use of large quantity of homogenised material instead of small quantity as claimed. However, it is considered that it would be within the routine skill of a person skilled in the art to select the quantity of the material required for testing based on type of fruit/vegetable and also based on the requirement of the intended use, rendering the claim not inventive.

Regarding claims 17-22, D1, D2 disclose a glass slide, container as support instead of absorbent material/paper as a support as claimed. However, this difference resides only in what is merely a choice of one of several obvious known alternatives in the art and which would be available for use by the person skilled in the art (PSA), rendering the claims not inventive.

Regarding claim 23, D1, D2 fail to disclose that the material is dispersed on the support to form a thin film. However, it is considered that it would be an obvious choice of a person skilled in the art to disperse the materials as a thin film in order to dry the material as evenly as possible, rendering the claim not inventive.

Claims 1-29 do not involve an inventive step in light of D1-D2 and therefore do not comply with PCT Article 33(3) for the same reason as described above.

INDUSTRIAL APPLICABILITY (IA)

The invention defined in the claims is considered to meet the requirements of Industrial Applicability under Article 33(4) of the PCT because it can be made by, or used in, industry.