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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/752,729	01/27/2020	Xingping Zhang	60170-US-PX-D-NAT-1	7149

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SYNGENTA CROP PROTECTION LLC
PATENT DEPARTMENT
PO BOX 12257
9 DAVIS DRIVE
RESEARCH TRIANGLE PARK, NC 27709-2257

EXAMINER
KUBELIK, ANNE R

ART UNIT	PAPER NUMBER
1662	

NOTIFICATION DATE	DELIVERY MODE
04/08/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

global.patents@syngenta.com

Office Action Summary	**Application No.** 16/752,729	**Applicant(s)** Zhang et al.	
	Examiner ANNE R KUBELIK	**Art Unit** 1662	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 2/2/21 and 3/8/21.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-3 and 7 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-3 and 7 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 February 2021 has been entered.

2. Claims 1-3 and 7 are pending.

3. The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

> (B) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-3 and 7 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the inventor or a joint inventor, or for pre-AIA the applicant, regards as the invention. Dependent claims are included in all rejections.

The rejection is modified from the rejection set forth in the Office action mailed 2 October 2020, as applied to claims 1-3. Applicant's arguments filed 2 February 2021 have been fully considered but they are not persuasive.

Claim 1 is indefinite in its recitation of "5th leaf from the smallest new leaf on a vine having a surface area, on average, 3 to 14 times smaller than the surface area of the 5th leaf from

watermelon variety Sangria and not more than 50 cm^2", claim 3 is indefinite in its recitation of "wherein the surface area of said 5th leaf is in the range of 15 cm^2 to 50 cm^2", and claim 7 is indefinite in its recitation of "5th leaf from the smallest new leaf on a vine having a surface area 3 to 14 times smaller than the surface area of the 5th leaf from watermelon variety Sangria and not more than 50 cm^2".

Leaf area is affected by environmental conditions. The specification admits that on pg 11, lines 30-31, where it says "Clearly, due to various environmental and physiological conditions, the size of the leaves of a watermelon plant may vary." Further, the specification teaches that leaf surface area varies from plant to plant of the same variety grown side-by-side (tables 1A and D).

The art also teaches this; leaf area is affected by temperature, fruiting, daylength, and possibly light intensity (Buttrose et al, 1978, Ann. Bot. 42:599-608; see pg 602, paragraph 7; pg 603, paragraphs 1-2; pg 604, paragraphs 1-5). Although Buttrose did not show the effects of light intensity, daylength and temperature on the 5th leaf from the smallest new leaf on a vine, they did show that these affect the surface area of other leaves. For example, Buttrose shows that the width of the 4th leaf from the base of the main shoot is affected by light intensity, daylength, and temperature (Figure 3). Leaf area is also affected by irrigation and stress (Hegde, 1988, J. Agronomy and Crop Sci. 160:296-302; see paragraph spanning the columns on pg 299).

Thus, at best, a 5th leaf having a specified surface area is a term that is relative to a variety of conditions, and at worse is completely indefinite.

Additionally, a 5th leaf with an average of 3 to 14 times smaller than the 5th leaf of Sangria means that at times the 5th leaf of the diploid pollinizer will be larger than the 5th leaf of

Sangria. Sometimes a given plant will fall within the scope of the claims and sometimes it will not.

Thus, one of ordinary skill in the art would not be reasonably apprised of the metes and bounds of the invention.

Response to Arguments

Applicant urges that Buttrose fails to disclose the alleged relationship between individual leaf surface area and environmental conditions for any leaf, let alone the 5th leaf from the smallest new leaf on a vine (response pg 9).

This is not found persuasive because Buttrose teaches that after the 5th leaf on the plant, leaves were larger with reduced light intensity (pg 602, paragraph 7).

Applicant urges that Buttrose's Figure 3 teaches that there was no effect of light intensity or daylength on leaf width; thus Buttrose teaches that there is no effect of environmental conditions on leaf width (response pg 9-10).

This is not found persuasive. Buttrose indicates that leaf size and area are affected by environmental conditions. Buttrose states: "There was no clear effect on the first 4 or 5 leaves, but then a pattern was established of larger leaves with reduced light intensity" (pg 602, paragraph 7), "with continuous light leaves were larger" (pg 603, paragraph 1), and "Leaf size at 40 °C improved at higher nodal positions" (pg 603, paragraph 2), "Fruiting plants had less leaf area" (pg 604, paragraph 2), "Fruiting had relatively large effects [on total leaf area] at 25 °C and 35 °C" (g 604, paragraph 5), "Early Yates plants at the lower intensity had a greater total leaf area" (pg 607, paragraph 1), and "Compared with plants grown at 25 °C, those at 30 °C or 35 °C had … larger leaves (pg 608, paragraph 2). Hegde also teaches that leaf area is affected by irrigation and stress (paragraph spanning the columns on pg 299). The specification on pg 11,

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