

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SYNGENTA CROP PROTECTION AG

Petitioner,

v.

PLANTLAB GROEP B.V.

Patent Owner

Case: PGR2021-000XX
U.S. Patent No. 10,667,469
Issue Date: June 2, 2020

Title: SYSTEM AND METHOD FOR GROWING A PLANT IN AN AT LEAST
PARTLY CONDITIONED ENVIRONMENT

**DECLARATION OF DR. BRUCE BUGBEE
UNDER 37 C.F.R. § 1.68**

I. INTRODUCTION

1. I, Dr. Bruce Bugbee, have been retained as an independent consultant by Syngenta Crop Protection AG (China National Chemical Corporation) (“Syngenta” or “Petitioner”) in connection with post-grant review of U.S. Patent No.

10,667,469 (“the ’469 patent”) (EX1001). I am over eighteen years of age, and I am otherwise competent to testify as to the matters set forth herein if I am called upon to do so. I have prepared this Declaration for consideration by the Patent Trial and Appeal Board with respect to the Petition for Post Grant Review of the ’469 patent” filed by Syngenta.

2. I have written this Declaration at the request of and have been retained by Kilpatrick Townsend & Stockton, LLP, which represents Syngenta in connection with the above-captioned Post Grant Review.

3. I am being compensated at my standard hourly rate. My compensation is not dependent on the outcome of or any issue in relation to this Post Grant Review or any other post grant proceedings of which I am aware.

4. In forming my opinions, I relied on my knowledge and experience in the field and on documents and information referenced in this Declaration. All statements in my Declaration, unless indicated otherwise, are based on my knowledge and experience in the field.

5. Specifically, this document contains my opinions about the subject matter in claims 1-12 of the '469 patent ("Challenged Claims") and grounds asserted against these claims by the Petitioner. I was not asked to provide any opinions that are not expressed in this document.

II. SUMMARY OF OPINIONS

6. This declaration considers the Challenged Claims of the '469 patent. Below I include the opinions I have formed, the conclusions I have reached, and the reasoning for these opinions and conclusions.

7. Based on my experience, knowledge of the art at the time of the applicable priority date, analysis of Petitioner's asserted grounds and references, and the understanding of a person of ordinary skill in the art would have had of the claims in light of the specification (disclosure of the patent) as of the applicable priority date, it is my opinion that the Challenged Claims of the '469 patent are indefinite, lack written description and enablement support, are obvious over the prior art, and are not patent eligible.

III. BACKGROUND AND QUALIFICATIONS

8. I earned a B.S. in Horticulture from the University of Minnesota in 1975, a M.S. in Crop Physiology from the University of California, Davis in 1978, and a Ph.D. in Environmental Plant Physiology from Penn State University in 1981.

9. I have over forty years of experience with plant nutrition and crop physiology and over thirty years of research experience in environmental control to optimize plant growth and yield. As a Ph.D. student at Penn State University from 1978-1981, I studied the effects of root-zone temperature on plant growth as part of my doctoral research. Over the course of my career starting as a Research Assistant Professor and Assistant Professor in the Plant Sciences Department at Utah State University, I have developed systems to optimize plant growth in controlled environments. I have published articles and have presented at scientific meetings on the development of methods and systems to optimize plant growth in controlled environments as early as 1984. I am an author on numerous book chapters related to controlled environment crop production and I am an author on over 30 peer-reviewed journals regarding optimal conditions for plant growth and development.

10. I have served on national committees related to plant sciences, including serving as Chair of the Biophysical Sensors and Measurements Community of the American Society of Agronomy (2014-2015), and Chair of the Crop Physiology Division of the American Society of Agronomy (2003-2004). I have been honored as a Distinguished Fellow in both the American Society of Agronomy (2018), and the American Society of Horticulture (2020). I have also received the D. Wynne

Thorne Career Research Award (2016) and Researcher of the Year Award (2005) from Utah State University.

11. I have been a consultant to several commercial companies on the optimization of plant growth conditions to maximize yield in indoor agriculture, conditions that are often characterized as having either sole source or supplemental lighting from light emitting diodes (LEDs).

12. I am currently a Professor in the Plant, Soils, & Climate Department at Utah State University, where I teach graduate and undergraduate courses in plant physiology, plant nutrition and environmental control. I was previously an Associate Professor in the Plant, Soils, & Biometeorology Department at Utah State University.

13. Additional details about my employment history, fields of expertise, and publications are included in my *curriculum vita*, which is attached.

IV. INFORMATION CONSIDERED

14. In forming my opinions, in addition to my knowledge and experience, I have considered the following documents and things that I have obtained or that have been provided to me:

- U.S. Patent No. 10,667,469 to *Van Gemert et. al.* (“the ’469 patent”) (EX1001) and its file history (EX1003);

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