



World Food Preservation Center-LLC, Shepherdstown, USA

Objectives of MoU

- Exchange of Faculty and/ Staff members for research, discussion and giving lectures.
- Joint Research and Publications
- Joint Industry Consultancy

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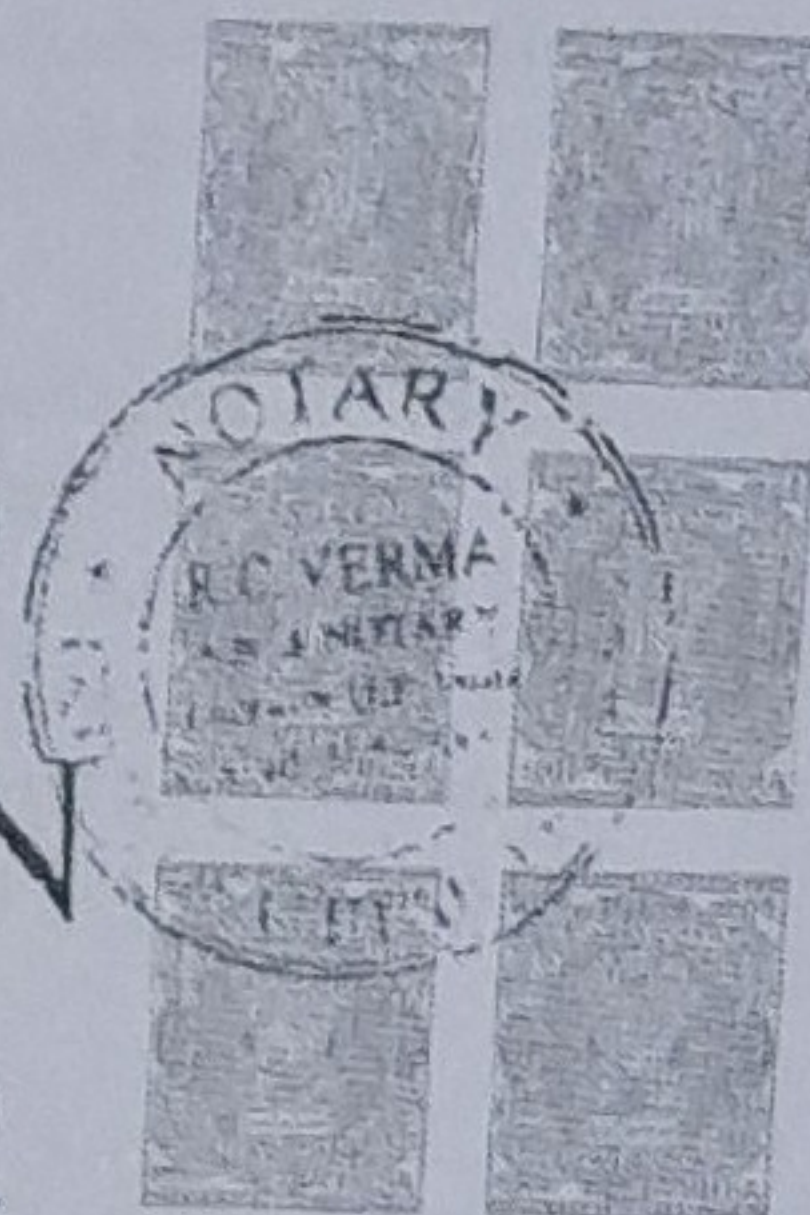
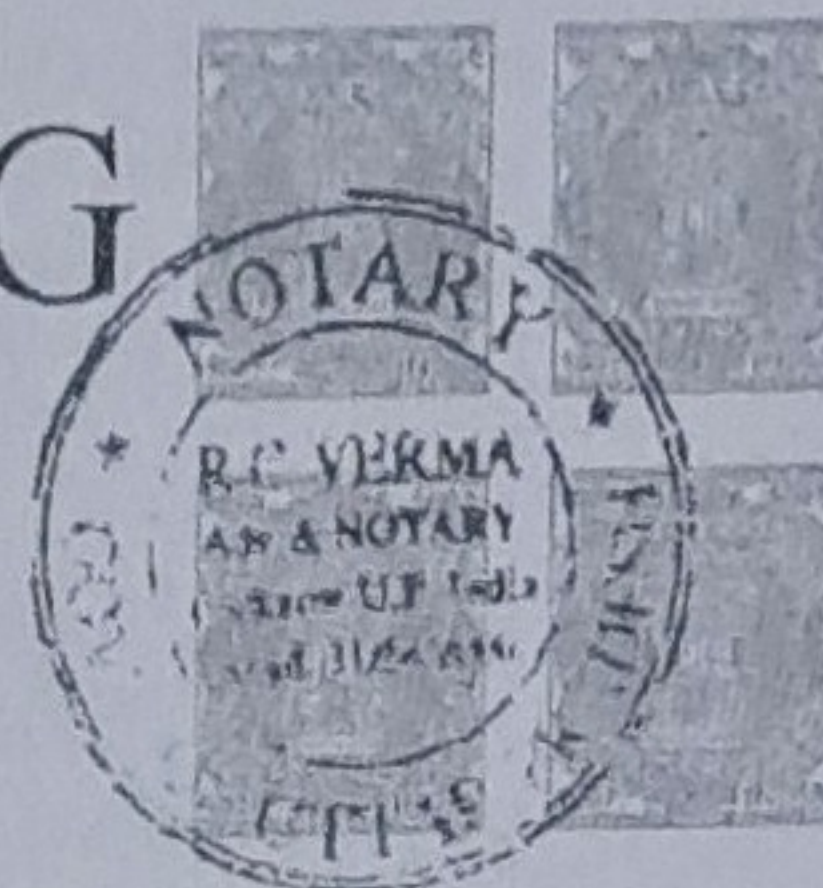


**INTEGRAL
UNIVERSITY**

LUCKNOW - INDIA

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MEMORANDUM OF
UNDERSTANDING
BETWEEN
INTEGRAL UNIVERSITY
AND
WORLD FOOD
PRESERVATION
CENTER® LLC



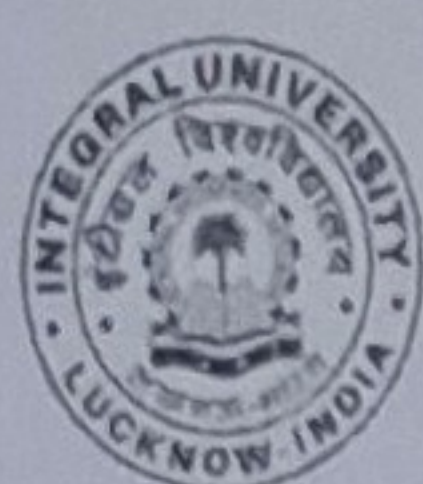
INTEGRAL
UNIVERSITY
KURSI RD.
LUCKNOW, UTTAR PRADESH-
226026
INDIA

WORLD FOOD PRESERVATION
CENTER® LLC
PO BOX 1629
SHEPHERDSTOWN, WV 25443
USA

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I. PREAMBLE

Following discussion and exchanges of correspondence between Integral University, Lucknow, India and the World Food Preservation Center® LLC, a limited liability company in Shepherdstown, WV 25443 and incorporated in the State of West Virginia, USA, a formal memorandum of understanding is hereby made between the Integral University (hereinafter "IU") and the World Food Preservation Center® LLC (hereinafter "COMPANY"). Collectively, IU and the COMPANY will hereafter be known as the ("PARTIES").

IU and COMPANY both recognize that the world is facing one of the most urgent problem of how to feed a rapidly ballooning population. It is estimated the world's population will grow one-quarter by 2050 and reach 9.6 billion people. This means that we will have to double our food production by 2050 in order to feed this expanded population. It has been shown that given our present capability to annually increase crop yields we are going to fall far short of enough food to feed the world's population by 2050. Therefore, a new strategy is needed other than just producing more food. The UN FAO has shown that one-third of the world's food that we already produce is actually lost after it is harvested and before it is consumed. The logical solution to the world's pending food shortage is to find ways to save more of the food that we already produce.

There are a number of good programs in place to reduce the postharvest loss of food in developing countries. However, most of these are dependent on the continual input of experts from the developed world with uncertain budgets in order to be sustainable. Also, because we have invested only 5 % of our agricultural resources into the preservations of food as opposed to 95% into its production, we find ourselves with a shortage of competent postharvest professionals in developing countries and a paucity of technologies that we can recommend to developing countries for the preservation of their food.

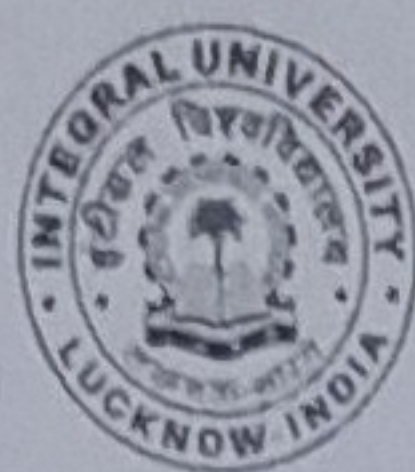
In order to address the shortcomings, IU and World Food Preservation Center® LLC are partnering to form a World Food Preservation Center at the Integral University that will provide a world-class education to young students/scientists in developing countries and conduct research on much needed new technologies to preserve food targeted to the need of developing countries.

WORLD FOOD PRESERVATION CENTER® LLC

The World Food Preservation Center® LLC is a consortium of twenty five major research universities and two research institutes (ARO Volcani Center, Israel and Institut National de la Recherche Agronomique, Morocco) on six continents dedicated towards providing an advanced world-class postharvest education (M.S and Ph.D.) to young students in developing countries and supporting their research on much needed new postharvest technologies. The non-profit World Food Preservation Education Foundation Corporation has been formed to solicit

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INTEGRAL UNIVERSITY

LUCKNOW - INDIA

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scholarship funds for students to attend "Sister" Universities of the World Food Preservation Center® LLC.

With 40 years of experience in the development of biologically based technologies for the postharvest preservation of food as alternatives to synthetic pesticides; Dr. Charles L. Wilson conducting research at the USDA Agricultural Research Station (ARS) in West Virginia; came up with the idea of an excellent model for a **WORLD FOOD PRESERVATION CENTER** that would be more self-sustainable in comparison to the other programs to reduce postharvest food losses in developing countries. The objective of the **WORLD FOOD PRESERVATION CENTER® LLC** is to provide young students/scientists in developing countries an excellent education in the most advanced methodologies and technologies for the postharvest preservation of food in addition to conduct research and development on much needed innovative technologies targeted toward the postharvest preservation of food in developing countries.

INTEGRAL UNIVERSITY:

IU, the first enacted Minority University in the country, started functioning from 1st April, 2004. The President of the Islamic Council for Productive Education, Dr. Seed-Ur-Rahman Azmi, and its General Secretary, Prof. Syed Waseem Akhtar, respectively took over as Founder Chancellor and Founder Vice Chancellor of the University. Integral University was accorded recognition by U.G.C under section 2 (f) of U.G.C. Act, 1956. The University stated its journey for providing quality education in 2004. The existing faculties in the University were re-organized and new faculties of Engineering, Science, Pharmacy, Education, Management Studies, Health & Medical Sciences, Agricultural Science & Technology, Humanities & Social Sciences, Computer Applications, College of Nursing and Faculty of Law were added. Besides this, progressively, a number of new programmes were added, including Master Level programmes in Biotechnology, Industrial Chemistry, Electronics Circuits and Systems, Bioinformatics, Instrumentation & Control, Microbiology, Production and Industrial Engineering, Machine Design, Computer Science, Civil Engineering, Power Systems and Drives, Agribusiness Management etc. At present the University has 11 faculties and 38 departments. It offers 35 Undergraduate programmes, 48 Postgraduate programmes and 22 Diploma courses, 3 Certificate courses and 2 PG Diploma Courses. The University has also taken up research programmes on a priority basis in almost all faculties of study. At present 343 research scholars are enrolled in the university under the PhD programmes and 201 scholars have already received doctoral degrees in the last 6 years. All courses conducted are approved by the concerned statutory bodies like CoA, PCI, NCTE, MCI, IAP, BCI. The University is accredited by NAAC. The University has a marvelous ambience and academically lively and vibrant environment, highly conducive to higher and dedicated academic pursuits. "Go Green" is one of the mottos of Integral University.

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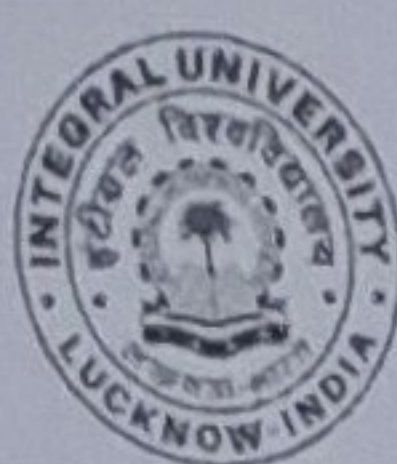
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Vision and Mission of IU:

Vision:

- To lead the teeming millions of the world through the wilderness of ignorance and illiteracy, as "Kindly Light" (Exodus 13:21) with the resounding divine proclamation "Read: Thy Lord Is the most bounteous (Quran 30:96:3)." and to educate them in the most constructive and innovative ways.

To integrate the ebullience, intellect and dynamism of youth with decency, decorum, discipline and dedication through value-based quality education.

Mission:

- To make every student a role model of intellectuals and torch bearers for others all over the world through his/her inspiring existence.
- To inculcate a spirit of confidence, self-respect and firm commitment in students alongwith far-sighted wisdom and understanding.
- To make India a self-reliant and dominant G-1 country recognized for quality education, higher economic growth and valuable moral practices.

Relevance of the Memorandum in the current scenario of Indian Agriculture:

The Indian subcontinent is situated in the tropical region of the world, where excess of rainfall and temperature prevails throughout the year. This leads to the development of heavy moisture in the climate. The humidity present in the atmosphere is responsible for a lot of agriculture related aspects in which storage and postharvest of the cereal crops, staple crops, and vegetable crops are most affected.

Nearly 60% of the grain, annually produced in the country is retained by the farmers for their own food, cattle feed, seed etc. The farmers generally store their grain in traditional storage structures. According to a World Bank Study (2009), postharvest losses of food grains in India are 8-10% of the total production. The losses during storage are estimated at 6.6% out of which insects alone cause around 2.5% losses. The monetary value of these losses amounts to more than Rs. 50,000/- crores per year (Singh, 2010). The postharvest losses have an impact at both the micro and macro levels of the economy by affecting the per capita food grain availability and hence threatening the Food Security of our Nation. Among biotic and abiotic factors which affects grains in storage, insects play a major role in the deterioration of food grains causing both quantitative and qualitative losses. It is well proved that no granaries can be filled with grains without insects as the harvested produce contain egg (or) larvae (or) pupae in them because of field carryover infestation which cannot be avoided in developing countries like India.

There is a worldwide need for a "Storage Revolution" in recognition of the fact that in hot, humid climates crop yields and crop production have been greatly increased by the "Green

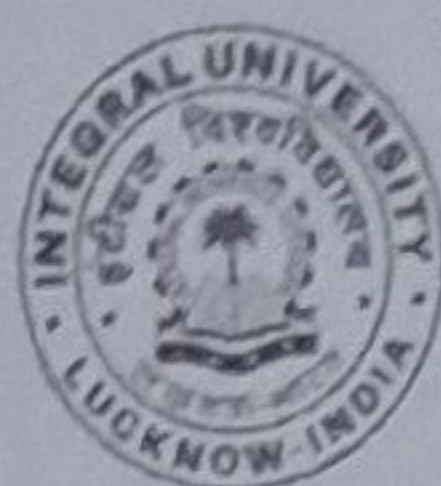
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Revolution's", breakthroughs in crop yields, but the problem of storage losses which often reach 25% (and in some cases exceed it), has received very little attention.

2. Parties of the MoU

2.1 Integral University located at Lucknow-226026 Uttar Pradesh, India through its authorized signatory: Prof. Jamal Mohammed Arif, Pro-Vice Chancellor, Integral University, Kursi Road, Lucknow-226026, U.P., India

2.2 The World Food Preservation Center LLC, a limited liability company in Shepherdstown, WV 26443 and incorporated in the State of West Virginia, USA, through its authorized signatory: Dr. Charles L. Wilson, Founder Chairman & CEO, WFPC LLC, West Virginia, USA.

Both the parties have mutually agreed upon the following terms and conditions:

3. Aim of the MoU

3.1 The primary aim of this MoU is to promote and assist in research of the most advanced methodologies and technologies for the postharvest preservation of food and to formulate a framework for active cooperation on the research and academic activities of the two institutions.

3.2 This MoU aim to strengthen the mutual understanding, foster friendly cooperation, and provide a World-class education to young students/researchers of IU in postharvest and conduct research on much needed new technologies to preserve food targeted to the needs of developing countries.

3.3 This MoU shall also involve the exchange of students/ researchers of IU and "Sister" Universities of the World Food Preservation Center® LLC.

4. Scope of the MoU

In contemplation of achieving the aims as provided under this MoU, the parties agree as follows:

4.1 This agreement replaces all previous agreements between the parties, and subsequent discussions, agreements and understanding, whether verbal or in writing, is subsumed by this agreement.

4.2 This agreement is designed to lead to a further understanding and arrangements between the PARTIES to establish a World Food Preservation Center at Integral University, Lucknow.

4.3 It is agreed that the World Food Preservation Center® LLC will provide the following services to IU:

4.3 (i) Providing technical, intellectual and other additional support (Acquisition of supplemental funds) for the World Food Preservation Center at the IU.

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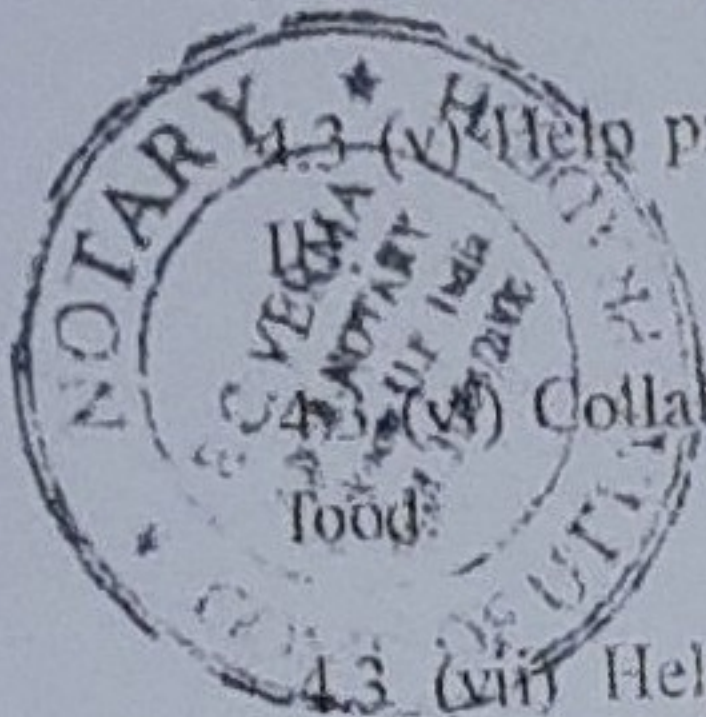
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4.3 (ii) Consulting and utilizing its international "think tank" of postharvest scientists to assist IU in the formulation of postharvest curriculum for IU.

4.3 (iii) Utilizing COMPANY'S "think tank" of leading international postharvest scientists, to assist IU in the formulation of a research agenda for the World Food Preservation Center at IU.

4.3 (iv) Provide IU the opportunity to license the registered trademarked name World Food Preservation Center®.



4.3 (v) Help provide scholarships to students attending the World Food Preservation Center at IU.

4.3 (vi) Collaborate with IU in the organization of conferences on postharvest preservation of food.

4.3 (vii) Help coordinate the activities of IU with other universities of the World Food Preservation Center® LLC

4.4 It is agreed that the IU will provide the following to the COMPANY:

4.4 (i) Cooperation with COMPANY in the development of a curriculum for the World Food Preservation Center at IU.

4.4 (ii) Cooperation with COMPANY in the development of a research agenda for the World Food Preservation Center at IU.

4.4 (iii) Cooperation with COMPANY in coordinating the research and curriculum activities of the World Food Preservation Center at IU with other sister universities of the World Food Preservation Center® LLC.

4.4 (iv) Cooperation with COMPANY in publicizing the activities of the World Food Preservation Center at IU.

5. Commencement and Duration

5.1 This memorandum will come into effect from the date of signature by both the parties and will remain in force for an initial period of five years.

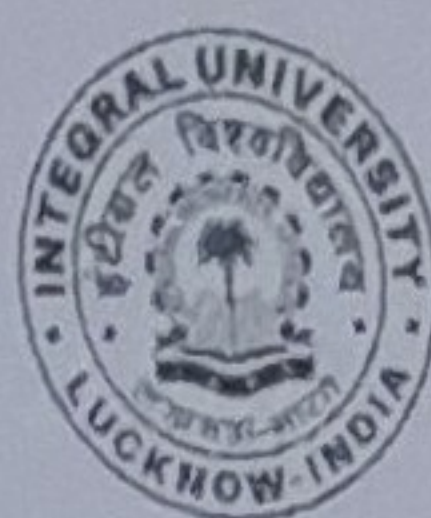
5.2 This memorandum may be amended /extended by the written agreements and mutual consent of both the parties.

5.3 This agreement may be renewed for a period by mutual consent of the IU and COMPANY. Renewals shall be in writing and subject to the same terms and conditions set forth herein, and shall be contingent upon a satisfactory performance evaluation by the parties. The evaluation will be initiated by the respective International Programs offices.

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6. Confidentiality

Both the parties acknowledge that any information disclosed by or on behalf of any of the parties which is not in the public domain is confidential and may not be used or disclosed to any other party (whether before or after the termination of this MOU) for any reason whatsoever save as may be strictly necessary for the due and effectual rendering of the services. Any scientific data exchanged/shared between the parties for joint research/supervision will not be transferred to third party without consent of the parties.

7. Intellectual Property

7.1 Any and all research derived from the collaborative efforts of the two parties will be the joint property of both the parties proportionate to the parties respective contributions.

7.2 In the event of IP generated out of joint efforts that IU, Lucknow and COMPANY will be joint holders of IPR/patents.

7.3 The parties of this MoU shall recognize and respect the pre-existing intellectual property (IP) rights in any data, images, analysis or any other form owned and contributed by either parties to the projects or activities contemplated by this MOU.

7.4 The parties further agree that all the IP Rights arising out of the activities or projects at IU by either of the parties shall be separate written agreements to be entered into by the parties which will include details on patent filing, maintenance of IP, commercialization and benefit sharing before filing patent.

8. General Terms & Understandings between Parties

8.1 This agreement provides the foundation and framework for, the particular projects developed by academic and administrative units from the two PARTIES and embodied in the implemented agreements.

8.2 Both PARTIES are committed to the policy that all persons shall have equal access to programmes, facilities, admission and employment without regard to personal characteristics, performance, or qualifications as determined by the respective IU and COMPANY policies.

8.3 Resources in form of equipments, machineries, apparatus, tools, experts and intellectual required for the smooth and adequate implementation of the aims and scope of this MoU may come from either party, depending upon terms and conditions discussed and negotiated between the parties. Neither party is obligated to expand any resources in connection with this agreement. No implementation of any portion of this agreement or commencement of any specific projects may be initiated prior to the written assurance of adequate resources.

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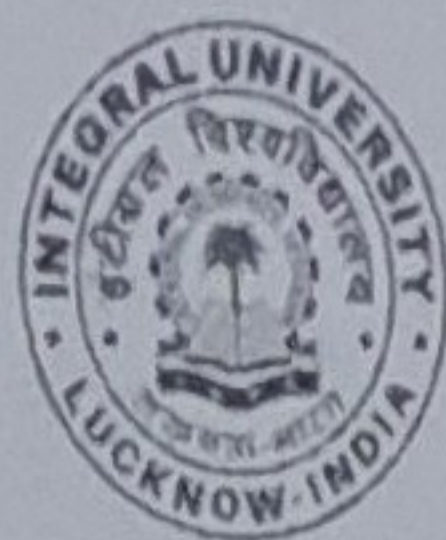
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8.4 This agreement shall not be construed to create a relationship of brokers, employees, servants, joint ventures or agents as between the parties. The parties to this agreement are acting as independent participants.

8.5 This agreement shall be governed by and construed under the laws of India with respect to IU, and the laws of West Virginia, USA with respect to COMPANY. The parties shall cooperate mutually to resolve any dispute or misunderstanding by collaboration and discussion.

8.6 Either party shall have the absolute right to terminate this agreement with or without cause upon sixty (60) days prior written notice to the other party. Such termination shall not become effective as to students already enrolled and participating in a programme at the Host Institution.

8.7 This MOU does not constitute any legal or contractual obligation on the part of either party. It reflects an arrangement that is currently satisfactory to the parties involved. The parties agree to negotiate amendments to this memorandum as needed to meet the evolving requirements.

8.8 As a part of this MOU both Integral University, Lucknow and World Food Preservation Center® LLC, USA have jointly agreed upon to host the "1st All Asia Postharvest Congress & Exhibition" at Integral University, Lucknow, India from 11th November'2019 to 13th November'2019. Other formalities and modalities will be discussed and finalized as and when required from time to time.

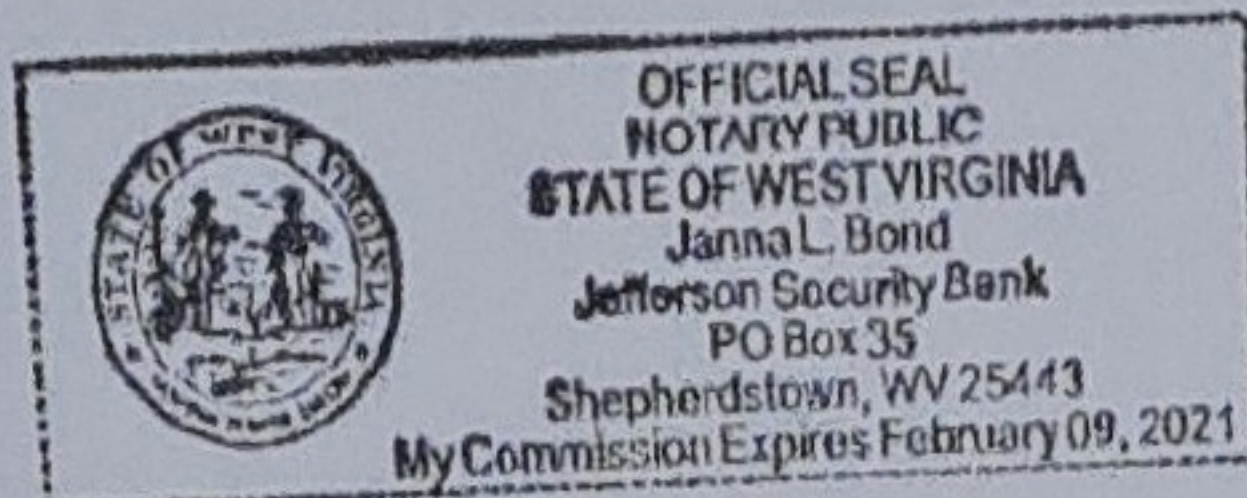
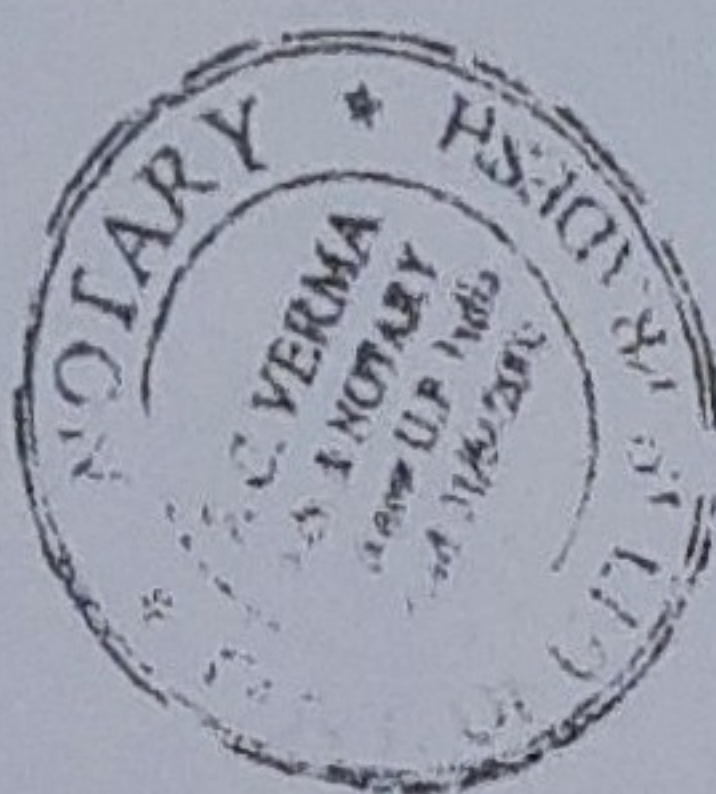
IN WITNESS WHEREOF the authorized representatives of IU and COMPANY have executed two (2) copies of the agreement.

Signed at Lucknow, Uttar Pradesh, India on <u>4th</u>day of <u>May</u>2017	Signed at Shepherdstown, West Virginia, USA on <u>23rd</u>Day of <u>May</u>, 2017
INTEGRAL UNIVERSITY By: <u>[Signature]</u> Prof. (Dr.) Jamal M. Arif Pro-Vice Chancellor Integral University, Lucknow. Witness: 1) <u>[Signature]</u> (Dr.) I.A. Khan Registrar Integral University, Lucknow 2) <u>[Signature]</u> Nader Director, Planning & Research Integral University, Lucknow.	WORLD FOOD PRESERVATION CENTER® LLC By: <u>[Signature]</u> Witness: 1) <u>[Signature]</u> Toby Twigg 2) <u>[Signature]</u> Brooke Dillaw Brooke Dillaw

CW



3)	3)
Date: 04 th May' 2017. Dr. (Er.) Mohd. Haris Siddiqui Director Integral Institute of Agricultural Science & Technology (IIAST) Integral University, Lucknow	Date: 5/23/2017



Sworn and Subscribed before me this
23rd Day of May 2017

Notary Public Janna L. Bond

My commission expires 2/9/2021

Sworn and Verified
Before me

R.C. VERMA
Adv. & NOTARY
Lucknow U.P. India
Regd 31/84/2000

Janna L. Bond
Adv.
know and identify the deponent
who has signed put his TI before me