



## PEF President's Message

We hope everyone had a healthy and happy holiday season and we welcome the New Year 2021. While I have formally entered retirement, I will continue to serve on the PEF board of directors and provide advice and guidance for the officers of the foundation. In the past 10 years the PEF Board of Directors has provided training for hundreds of young professionals in more than 30 countries, and I feel we have been able to share our skills and multiply our reach as food loss reduction trainers and consultants by more than one hundredfold. I will be now be depending on all of you to continue the work of postharvest training and capacity building for smallholder growers, traders, processors and marketers. One of my final activities in 2020 has been to update our e-learning manual and its supporting resources. We have 25 people enrolled at the present time, including 12 from Tuskegee University. I would like to call upon each of our PEF e-learning grads to recruit someone from your country to begin the new 2021 PEF Global E-learning Program.



**Dr. Lisa Kitinoja**  
President & Founder  
[kitinoja@postharvest.org](mailto:kitinoja@postharvest.org)

## 2021 International Year of Fruits and Vegetables



INTERNATIONAL YEAR OF  
FRUITS AND VEGETABLES

2021

The UN General Assembly designated **2021 the International Year of Fruits and Vegetables (IYFV)**. The United Nations Food and Agriculture Organization (UNFAO) is the lead agency for celebrating the year in collaboration with other relevant organizations and bodies of the United Nations system. **QU Dongyu**, The Director-General, UNFAO, launched the **International Year of Fruits and Vegetables-2021** on the 15th of December 2020, with an appeal to improve healthy and sustainable food production through innovation and technology and to reduce food loss and waste. It is a unique opportunity to raise awareness on the important role of fruits and vegetables in human nutrition, food security and health and as well in achieving UN Sustainable Development Goals.



# The Postharvest Education Foundation

Website: [www.postharvest.org](http://www.postharvest.org) E-mail: [postharvest@postharvest.org](mailto:postharvest@postharvest.org)

## PEF Postharvest E-learning Manual – 3rd Edition

### PEF Postharvest E-learning Manual

3rd Edition

Training of Postharvest Trainers and Extension Specialists:  
Small-scale Postharvest Handling Practices and Improved  
Technologies for Reducing Food Losses

Lisa Kitinoja

The Postharvest Education Foundation (PEF)



January 2021

ISBN 978-1-62027-024-0

PEF published the 3<sup>rd</sup> edition of PEF Postharvest E-learning Manual, which consists 12 self-managed assignments on practical postharvest extension methods. This training manual, first published in 2016, moved the postharvest e-learning program into the public/open access space, so individuals or groups can participate at no cost, and on their own schedules. We are disseminating this training manual as a free pdf document.

Assignments include identifying the causes and sources of postharvest losses, performing commodity systems assessments, determining local postharvest research, training and advocacy needs, assessing the local suitability of the

“best postharvest practices”, performing cost/benefit analyses, and designing practical postharvest technology demonstrations and training programs.

Website: [http://postharvest.org/postharvest\\_elearning\\_program1.aspx](http://postharvest.org/postharvest_elearning_program1.aspx)

## 2020 PEF Cooperative Ventures Grant

PEF has awarded **The Kader Awards in Postharvest Training** in honor of Professor Adel A. Kader during 2013-2019, to the PEF e-learning graduates who has had greatest impact in providing education and helping local farmers and other stakeholders to reduce food losses. The Kader Awards have been won by 11 young professionals during the past 8 years, and we hope the celebration of their accomplishments and their attending international postharvest events has been helpful in career building.

This year since most international events were cancelled or postponed, instead of annual Kader Award, PEF decided to sponsor **“Cooperative Ventures”** grant to encourage local collaborative efforts in postharvest education (training, outreach, community projects). This grant will provide a cash award of **US\$ 1000** for PEF e-learning graduates who demonstrate the need for funding to develop a new program or improve an existing training program in which they will work cooperatively with a local organization.

We received **44 applications** from PEF e-learning graduates in **18 countries**. Their topics included postharvest handling for fruits and vegetables, improved storage for cereals and beans, and processing practices for extending shelf life. The top 10 were selected based upon their vision, commitment and proposals for cooperative training efforts. Through the winners, the new training programs we will be able to reach more than **1000 people in 8 countries** in 2021.

Funding has been provided by Cooperative Ventures, **PEF board members (past and present)**, **PEF supporters and many donors via our 2020 Facebook campaign**, and by a grant from **CIRAD (Paris, France)** with support from FAO (Rome, Italy) as part of their promotion of the United Nations' 2021 International Year of Fruits & Vegetables. *Contd...*





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## 2020 PEF Cooperative Ventures Grant

### Winners of PEF 2020 Cooperative Ventures Grants for Postharvest Training

Name	Country	Crops	Proposed topics	Participants
Adams Abdul-Rahaman	Ghana	Soybean	Drying and storage	75 growers and storage operators
Regina Kamba	Cameroon	Vegetable crops	Postharvest handling	25 growers
Kwizera Mudenge Ernest	Rwanda	Vegetables	Postharvest handling, ZECC storage	55 growers and marketers
Jacinta Nyaiika	Malawi	Vegetables	Cold storage, reusable plastic crates	50 growers
Frederick Mbah	Benin	Pineapples	Solar drying	Study tour for 10 growers
Robert Nshizirungu	Rwanda	Vegetables and maize	Postharvest handling and demonstrations	770 farmers and traders
Chantal Pali	Togo	Okra and hot peppers	Postharvest handling, drying	50 growers and marketers
Mildred Osei-Kwarteng	Ghana	Leaf lettuce	Postharvest handling, ZECC storage	34 growers who supply to restaurants
Abdi Keba Wirtu	Ethiopia	Avocado	Training of postharvest trainers	75 trainers
François Olivier Ouedraogo	Burkina Faso	Fruit and vegetables, root crops	Drying and processing	30 growers



Adams Abdul-Rahaman (Ghana)



Regina Kamba (Cameroon)



Kwizera Mudenge Ernest (Rwanda)



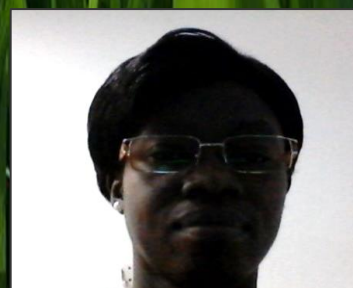
Jacinta Nyaiika (Malawi)



Frederick Mbah (Benin)



Robert Nshizirungu (Rwanda)



Chantal Pali (Togo)



Mildred Osei-Kwarteng (Ghana)



## Small-Scale Postharvest Handling Practices: A Manual for Horticultural Crops – L. Kitinoja and A.A. Kader

The manual includes the practices for postharvest handling for reducing losses, maintaining quality and ensuring food safety during small-scale handling and food processing of horticultural commodities. Manuals in 12 languages can be downloaded for free from UC Postharvest Technology Center website.

**Dr Feryal Varasteh** (2014 PEF graduate) from Iran is translating the manual into the Persian language, while **Dr Olubukola Odeyemi** (2015 Kader Award winner) from Nigeria is translating it into the Yoruba language.

**Umid Sayfudinov** (Tashkent, Uzbekistan) working with USAID Agribusiness Development Activity project as an extension services development specialist, is translating the manual into the Uzbek language.

Postharvest Horticulture Series No. 8E  
November 2015Small-Scale Postharvest Handling Practices:  
A Manual for Horticultural Crops (5<sup>th</sup> Edition)

Lisa Kitinoja and Adel A. Kader

University of California, Davis  
Postharvest Technology Research and Information Center

## Fresh produce food safety risks and their mitigation

### Fresh produce food safety risks and their mitigation

PEF White Paper 20-01

Deirdre Holcroft

The Postharvest Education Foundation, La Pine, Oregon, USA  
Holcroft Postharvest Consulting, Lectoure, France

Lisa Kitinoja

The Postharvest Education Foundation, La Pine, Oregon, USA



December 2020

A new white paper was published by The Postharvest Education Foundation (PEF) on the topic "Fresh produce food safety risks and their mitigation". It was authored by two of the PEF Board of Directors - **Dr Deirdre Holcroft and Dr Lisa Kitinoja**

This white paper highlights some concepts of food safety and possible risks while handling perishable crops. It also covers ways of preventing and reducing these risks. [\[Download full document\]](#)

For other white papers published by PEF:  
[http://postharvest.org/pef\\_training\\_materials.aspx](http://postharvest.org/pef_training_materials.aspx)

## Funding for Proven Off-grid Solar Cooling Technology

The **World Food Preservation Center® LLC** has partnered with **MN Capital Africa Advisors** to fund off-grid solar cooling technology for the transport and storage of food in developing countries to build stronger cold chains.

If you have proven off-grid solar cooling technology for the postharvest transport or storage of food that requires funding contact WFPC at the email:

[worldfoodpreservationcenter@gmail.com](mailto:worldfoodpreservationcenter@gmail.com).

### WORLD FOOD PRESERVATION CENTER® LLC SOLAR COLD CHAIN INITIATIVE™ for FOOD TRANSPORT AND STORAGE IN DEVELOPING COUNTRIES

Charles L. Wilson, Ph.D., Founder/CEO  
World Food Preservation Center® LLC  
Box 1629, Shepherdstown, WV 25443

Developing and emerging countries have over 1.2 billion people who have no access to energy. Another 3 billion people have access to energy from a power grid with BLACKOUTS. Lack of poor access to an energy grid in the developing world results in **Poor or Nonexistent Cold Chains** for the transport and storage of food. Consequently, postharvest food loss and waste in developing countries often exceed 50% of the harvested crop. **With world hunger on the rise, we cannot afford these losses.**

### Postharvest Losses in Developing Countries Often Exceed 50% of the Harvested Crop



The World Food Preservation Center® LLC on December 5, 2020 launched the **SOLAR COLD CHAIN INITIATIVE™** to substantially reduce postharvest food losses and waste in developing countries by developing off-grid solar power sources for food preservation.






## InspiraFarms – Product Configurator


1 — 2 — 3 — 4 — 5 — 6

**Do you need to store or process your crops on-farm?**

Our on-farm solutions can offer a broad range of alternatives for your post-harvest operations. Do you only need to lower and maintain cold temperatures or do you also need to process and pack your fresh produce? If you would like to use an existing facility you can choose 'No'.



Yes, I would like additional processing space!



No, I only need to cool down and store my produce.

[← Back](#)

InspiraFarms - Their new product configurator is up and running. It has launched with the slogan - 'Improve shelf-life with our smart cooling solutions - Best on-farm cold rooms, precooling and packhouses for fruit and vegetable in Africa'. It aims to make it easier to find the best solutions for cold rooms, pre-coolers and pack-houses, tailored to meet your crop's high-quality standards.

Website: <https://product.inspirafarms.com/>

## Lab to Land: Innovative cold storage technologies for smallholder horticultural farmers



To address the challenge of lack of affordable cold storage for smallholder farmers, the University of Nairobi's Multi-disciplinary Postharvest Research Team has been conducting adaptive research on innovative and affordable cold storage solutions. In the effort to build capacity and create awareness about these innovative technologies for cold storage the University of Nairobi Postharvest Research team recently established the "Innovative Cold Storage Technologies: Research, Training and Demonstration Unit".

**Dr. Jane Ambuko** (2012 PEF graduate) published a new article explaining different innovative cold storage technologies present in the unit.

## Congratulations Regine Kamga on completion of PhD

Regine Kamga completed her doctoral degree in Integrated Rural Development at the University of Dschang, Cameroon. Thesis title - "Promotion of traditional African vegetables (TAVs) in Cameroon: Consumers preferences and appropriation of innovations by producers".



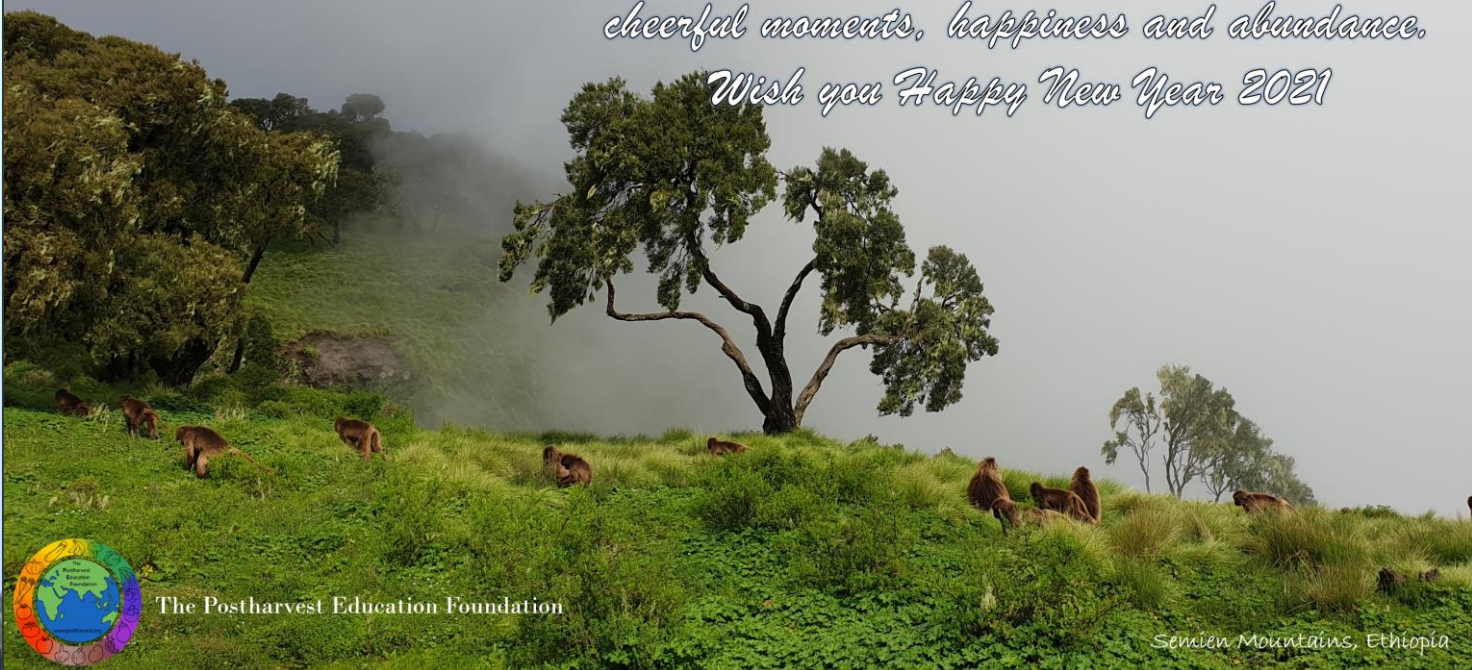




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*May every day of the new year glow with  
cheerful moments, happiness and abundance.  
Wish you Happy New Year 2021*



The Postharvest Education Foundation

Simien Mountains, Ethiopia

## PEF's 'Global Postharvest E-learning Program' is Free to all!

Check the website for further details and register by completing Assignment #1:

[http://postharvest.org/postharvest\\_earning\\_program1.aspx](http://postharvest.org/postharvest_earning_program1.aspx)

### Postharvest Queries:

Mail us at [postharvest@postharvest.org](mailto:postharvest@postharvest.org) any postharvest related questions you wish to be answered.

### SUPPORT OUR WORK

The Postharvest Education Foundation is a 501(c)(3) non-profit public charity with aim to reduce global food losses, which are as high as up to 50%.

General donations to The Postharvest Education Foundation are used for 3 major program activities:

- Postharvest tool kit: For e-learners from developing country who complete their training (US\$400 each).
- Postharvest Closing Workshops for e-learning graduates (Estimated as \$1200 per e-learner).
- Travel Support: To pay for the travel expenses to attend international postharvest training programs (air tickets, hotels, food, local transport costs) (Estimated as \$1500-\$2000 per e-learner).

Kindly check our website (<http://www.postharvest.org/donate.aspx>) for other alternate ways to donate.

Thanks in advance for your tax-deductible donation, which will be used to train young horticultural professionals via low cost internet based programs, with reading assignments, fieldwork on improved practices for postharvest handling, storage, processing and marketing.

Email us at [newsletter@postharvest.org](mailto:newsletter@postharvest.org) to subscribe to the PEF newsletter.

### Contact Us:

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