

# Haile Tesfaye Duguma

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## Education

### Ph.D. Student:

Packaging Science  
Specialize in Food  
Packaging  
Michigan State  
University, USA, since  
May 2021  
summer 2025

**M.Sc.** Post-Harvest  
Management of  
Perishable crops.  
Jimma University,  
Ethiopia September  
2013- June 2016

**B.Sc.** Post-Harvest  
Management, Jimma  
University, Ethiopia.  
September 2010 – July  
2013

## Skills

- Microsoft excels.
- Qualtrics
- Minitab software
- SAS
- R software
- PowerPoint
- Data analysis
- Teaching

## References

1. Dr. Eva Almenar,  
professor at the School  
of Packaging Michigan  
State University, USA.  
Email;  
[ealmenar@msu.edu](mailto:ealmenar@msu.edu)

## Personal information

Haile Tesfaye Duguma is a Ph.D. student at the School of Packaging Michigan State University, US, and an academic staff at the Department of Post-harvest Management at Jimma University, Ethiopia. Haile has 4 years of teaching experience in Food Science and Post-Harvest Technology. Currently, his Ph.D study focuses on developing biobased food packaging material using agro waste as a filler for plastic packaging materials. His research interests include biocomposite food packaging, antimicrobial food packaging, Food Safety, post-harvest loss reduction, and value addition.

## Professional Experience

- Assistant professor and lecturer at Jimma University, Ethiopia, Since October 2020
- Lecturer at Department of Post-Harvest Management Jimma University Ethiopia Since September 2017
- Lecturer Department at Food technology and process engineering at Arba Minch University, Ethiopia from November 2016 to September 2017.

## Scientific Services and Contributions

- **Delivered training.**
  - Analysis of Food Products, Thermal processing and Preservation of perishable food” for the instructors of Agricultural Technical and Vocational Education Training
  - Child complementary food preparation for lactating mother,

## Reviewed Paper Submitted to Journals

- Heliyon,
- Journal of Stored Product Research,
- Ethiopian Journal of Science and Technology
- Asian Journal of Biotechnology and Genetic Engineering

- **Reviewed a grant research proposal submitted to Jimma University**

## Publications

1. Sirawdink Fikireyesus, **Haile Tesfaye Duguma**, Tefera Belachew Lema, Sturm B, Hensel O., 2019. Nutritional and sensory quality of composite extruded complimentary food. *Food Sci Nutr.*; 00:1-8. <https://doi.org/10.1002/fsn3.940>
2. Abebe Yimer Tadesse, Ali Mohammed Ibrahim, Sirawdink Fikireyesus Forsido, **Haile Tesfaye Duguma**, 2019 "Nutritional and sensory quality of complementary foods developed from bulla, pumpkin and germinated amaranth flours", *Nutrition & Food Science*, <https://doi.org/10.1108/NFS-01-2018-0001>.
3. Haile, M., **Duguma, H. T\***, Chameno, G., & Kuyu, C. G. (2019). Effects of location and extraction solvent on physico chemical properties of Moringa stenopetala seed oil. *Heliyon*, 5(11), e02781. <https://doi.org/10.1016/j.heliyon.2019.e02781>.
4. **Haile Tesfaye Duguma**, 2020 "Wild Edible Plant Nutritional Contribution and Consumer Perception in Ethiopia", *International Journal of Food Science*, vol. 2020, 2958623, 16 pages, 2020. <https://doi.org/10.1155/2020/2958623>.
5. **Haile Tesfaye Duguma**, 2020. Review on indigenous knowledge of Farmer on grain storage and management practice in Ethiopia. *Food Science and Nutrition Technology* 2020. <https://medwinpublishers.com/FSNT/>.
6. **Haile Tesfaye Duguma\*** Sirawdink Fikireyesus, Tefera Belachew, Hensel O., 2021. Effects of extrusion on functional properties and anti-nutritional factor contents of composite flour *Front. Sustain. Food Syst.*, | <https://doi.org/10.3389/fsufs.2021.713701>.

3. Dr. Yetenayet Bekele Tola  
Associate professor at the Department of Post-Harvest Management  
Jimma University  
Ethiopia  
Email;  
yetenayet@gmail.com;  
[yetenayet.bekele@ju.edu.et](mailto:yetenayet.bekele@ju.edu.et)

7 Chacha, J.S., Zhang, L., Ofoedu, C.E., Suleiman, R.A., Dotto, J.M., Roobab, U., Agunbiade, A.O., Duguma, H.T., Mkojera, B.T., Hossaini, S.M. and Rasaq, W.A., (2021). Revisiting Non-Thermal Food Processing and Preservation Methods—Action Mechanisms, Pros and Cons: A Technological Update (2016–2021). *Foods*, 10(6), p.1430.  
<https://doi.org/10.3390/foods10061430>.

8. **Duguma, H. T.** (2022). Potential applications and limitations of edible coatings for maintaining tomato quality and shelf life. *International Journal of Food Science & Technology*, 57(3), 1353-1366. <https://doi.org/10.1111/ijfs.15407>. **This paper is considered as paper of the month for April by *International Journal of Food Science & Technology***

9 Agunbiade, A.O., Song, L., Agunbiade, O.J., Ofoedu, C.E., Chacha, J.S., **Duguma, H.T.**, Hossaini, S.M., Rasaq, W.A., Shorstkii, I., Osuji, C.M. and Owuamanam, C.I., 2022. Potentials of 3D extrusion-based printing in resolving food processing challenges: A perspective review. *Journal of Food Process Engineering*, p.e13996. <https://doi.org/10.1111/jfpe.13996>.

10. **Tesfaye, D.H.**, Meseret, A., Gebrmedhin, C. and Meseret, H., 2022. Antimicrobial properties of Moringa Stenopetala seed oil. *African Journal of Microbiology Research*, 16(11), pp.343-348. <https://doi.org/10.5897/AJMR2022.9660>.

### Book chapter

1. Eva Almenar, Melvin Pascall, Min Degruson, **Haile Duguma**, 2023. Sustainable Food Packaging.  
<http://dx.doi.org/10.1016/B978-0-12-822521-9.00096-4>.

2. Contributed to Post-Harvest and Processing Technology. Practical guidebook, first edition, 2019.  
[https://www.researchgate.net/profile/Ashenafi\\_Gebeye2/publication/345307298\\_Postharvest\\_Instructor\\_Final/links/5fa25a00458515b7cfba5dcd/Postharvest-Instructor-Final.pdf](https://www.researchgate.net/profile/Ashenafi_Gebeye2/publication/345307298_Postharvest_Instructor_Final/links/5fa25a00458515b7cfba5dcd/Postharvest-Instructor-Final.pdf)

### Papers on Progress

1. **Haile Tesfaye Duguma**, Jack Fehlberg, Peter Macke, Sungeun Cho, Eva Almenar 2022. Orange Peel Powder as A Filler for Plastic Films for Food Packaging Applications: A Case Study In Bread.
2. **Haile Tesfaye Duguma**, Melkamu Mamuye, Gezahagn Barecha. Purdue Improved Crop Storage Bag for Kocho Fermentation; Traditional Fermented Food from *Enset (Ensete ventricosum)*. Under review ( *Heliyon* ).
3. **Haile Tesfaye Duguma**, Purva Khule, Aidan McArdle, Korey Fennell, and Eva Almenar. 2023. Turning Agricultural Waste into Packages for Food: a literature review from origin to consumer. Food packaging and Shelf life.

### Training Attended

- Design of Experiment
- Human Nutrition and Food Science,
- Nutrition Sensitive Agriculture
- Post-Harvest Education Foundation E-Learning of 2016.
- Instructional Skill from Arba Minch University
- Postharvest Technology of Horticultural Crops Short Course, delivered by the university of Davis, California, USA.

### Conference presentation and participation

- Presented a research paper on the Effects of location and extraction solvent on physico chemical properties of moringa stenopetala seed oil. The 10<sup>th</sup> Annual research conference of Jimma University and the 9<sup>th</sup> Global knowledge exchange network annual event, Jimma, Ethiopia, April, 2019

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- Presented a research paper on the Effects of location and extraction solvent on physicochemical properties of moringa stenopetala seed oil at the Annual Symposium Arba Minch University 2021
- Participate on 2<sup>nd</sup> All African Post-Harvest Conference
- Presented a poster entitled ' Potential Application and Limitation of Edible Coatings for Maintaining Tomato Quality and Shelf Life' MSU postgraduate student 14<sup>th</sup> annual research conference, February 19, 2022.
- Presented a paper entitled ' Indigenous Knowledge of Farmer on Grain Storage and Management Practice in Ethiopia on MSU African study center teatime February 17, 2022
- Presented poster entitled ' Potential Application and Limitation of Edible Coatings for Maintaining Tomato Quality and Shelf Life' at the American Chemistry Society Fall Scientific Meeting, 2021.
- Presented poster and research showcase on Orange Peel Powder as A Filler for Plastic Films for Food Packaging Applications: A Case Study in Bread at the IFT Annual event and Expo in Chicago, US, July 2022
- Oral presentation on Orange Peel Powder as A Filler for Plastic Films for Food Packaging Applications: A Case Study in Bread at MSU postgraduate student 15<sup>th</sup> annual research conference, April 29, 2023.

### **Award and Grant Received**

- One of the Spring and Fall 2022 School of Packaging graduate fellowship winner
- Evaluation of the Extent of adulteration of honey along the value chain in Southwest Ethiopia granted 6500\$ (168000 ETB) as a principal investigator 2020.
- Assessment of acrylamide contents of street food in Jimma town, Southwest Ethiopia granted \$8771 (240,000 ETB) as a co-investigator, 2018
  - Development and Participatory Evaluation of Fruit Harvester Impact on Quality, Phytonutrients and shelf life of Selected Fruits in Manna District, Granted \$5500 (165000 ETB) 2019.