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RESEARCH INTERESTS

- Processing of fruit and herbal powders
- Tableting of fruits and herbal powders Design of Food related machinery
- Value addition of fruits and agricultural products



EXPERIENCE

LECTURER, DEPARTMENT OF FOOD ENGINEERING

From October 11, 2008 to Date

Teaching B.Sc Food and Agricultural Engineering courses. Research on design, development and fabrication of Food and Agricultural machinery.

EDUCATION

DEGREE / DATE EARNED

B.Sc Agri. Engineering from University of Agriculture Faisalabad (2003-2007).

M.Sc Agri. Engineering from University of Agriculture Faisalabad (2007-2009).

Ph.D Food Engineering from University Putra Malaysia (2014-2016).
FSSC 22000 v.6 (2024)

HACCP level 4 (2024)

RESEARCH ACTIVITIES

PUBLICATIONS

- I. Muhammad Usman, Amna Sahar, Muhammad Haseeb Ahmad, Muhammad Issa Khan, Muhammad Faizan Afzal, Hafiz Ubaid Ur Rahman, Muhammad Azhar Ali, Waseem Khalid, Muhammad Zubair Khalid, and Felix Kwashie Madilo.

(2024). Augmenting the Oxidative Stability of Chicken Nuggets by incorporating cumin and Black cumin as natural preservatives. INTERNATIONAL JOURNAL OF FOOD PROPERTIES. 27(1); 352–366.

2. Rimsha Younas, Amna Sahar, Aysha Sameen, Muhammad Issa Khan, Muhammad Azhar Ali, Muhammad Arbaz Tahir, Muhammad Mohsin, Muhammad Usman and Rana Muhammad Aadil. (2023). A narrative review on extraction techniques of phytosterols and their applications in food industry. Biomass Conversion and Biorefinery. <https://doi.org/10.1080/10942912.2024.2317744>
3. BADSHAH F., LATIF A., MAQBOOL M., AHMAD M., ZAFAR MB., **ALI MA.**, FAIZ S., SARWAR MI., ADNAN M. and SOHAIL M. (2023). EFFECT OF ENZYME SUPPLEMENTATION ON THE PERFORMANCE OF BROILER CHICKENS. Biological and Clinical Sciences Research Journal. DOI: <https://doi.org/10.54112/bcsrj.v2023i1.63>
4. **ALI, M.A.**, HUSSAIN, Y., BUTT, A., ALI, M., RIZWAN, M., MUNIR, N., KABIR, A., & MATEEN, L. (2023). EXAMINATION OF THE PHYSIOLOGICAL AND BIOCHEMICAL CHANGES AFFECTING NUTRITIONAL REQUIREMENTS THAT OCCUR IN DIFFERENT LIFE STAGES OF FISH. Biological and Clinical Sciences Research Journal, 2023(1), 578. <https://doi.org/10.54112/bcsrj.v2023i1.578>
5. Muhammad Azhar Ali, Nor Shazwani Shaari, Muhammad Yamin, Amna Sahar, Yus Aniza Yusof. (2023). Investigating the compressibility and flowability of cocoa powders: A solution for chocolate industry. Journal of Food Process Engineering, 1-10. (IF = 2.889)
6. Muhammad Yamin, Usama Ali Zafar, Ghulam Usman, Muhammad Nauman, Muhammad Rizwan, Muhammad Nadeem, **Muhammad Azhar Ali** and Usman Haider. (2021). Development and Validation of Internet of Things (IoT) based Automated System for Controlling the Environmental Factors in Tunnel Farming. Sarhad Journal of Agriculture, 37(3), 839846.
7. Nur Syahida Roslan, Yus Aniza Yusof, **Muhammad Azhar Ali**, Nyuk Ling Chin, Mohd Shamsul Anuar, Kar Yong Pin. (2021). Compaction, flowability, and dissolution kinetics of Andrographis paniculata, Eurycoma longifolia, Labisia pumila, and Orthosiphon stamineus powders. Journal of Food Process Engineering, 1-10. (IF = 2.889)
8. Hafiz M. Safdar, Abdul Nasir, Haroon Rashid, Shanawar Hamid, Mohsin Noor & **M. Azhar Ali**. (2020). Development, Optimization and Performance Evaluation of Indigenous Piston Press Briquetting Machine for Crop Residue. Pak. J. Agri. Sci. 43(3), 258-273.

9. Waseem Amjad, Gohar Ali Gilani, Anjum Munir, Furqan Asghar, **Muhammad Azhar Ali**. (2020). Energetic and exergetic thermal analysis of an inline-airflow solar hybrid dryer. *Applied Thermal Engineering*, Volume 166, 114632. (IF = 2.04)
10. **Muhammad Azhar Ali**, Muhammad Yamin, Ch. Arslan, Usman Farid and Abdul Nasir. (2020). A FEASIBILITY STUDY: OFF-GRID PHOTOVOLTAIC SOLAR POWER SUPPLY TO THE REMOTE AREAS OF PAKISTAN. *Pak. J. Agri. Sci.* 57(5), 1313-1316.
11. Muhammad Ilyas, **Muhammad Azhar Ali**, Abdul Nasir Awan, Sajjad Haider, Adnan Shahid. (2019). Estimation of noise levels in the road side parks and study of its impact on health of visitors in Faisalabad. *Earth Sciences Pakistan*. 3(1),14-22
12. Faiza Jamil, Rizwan Arshad, **Muhammad Azhar Ali** (2019). Design, fabrication and evaluation of rotary hot-air dryer for the value addition of fruit waste. *Earth Sciences Pakistan*. 2(2),7-11
13. **M.A. Ali**, Y.A Yusof, N.L. Chin, M.N. Ibrahim & S. Munir (2018). Development and Standardization of Moringa oleifera Leaves as a Natural Dietary Supplement. *Journal of Dietary Supplements*. 16(2):1-20
14. Raza, A., **Ali, M. A.**, Yusof, Y. A., Nasir, A. and Muneer, S. 2018. Effect of different drying treatment on concentration of curcumin in raw curcuma longa L. *International Journal of Food Research*. (IF = 0.33)
15. N.S. Zafisah, Y.A. Yusof, **M.A. Ali**, N.S. Roslan, A. Tahir, M.G. Aziz, N.L. Chin. (2017). Processing of Raw Coconut Milk for its Value Addition using Spray and Freeze Drying Techniques. *Journal of Food Process Engineering*. <https://doi.org/10.1111/jfpe.12602>. (IF = 2.889)
16. **M.A. Ali**, Y.A Yusof, N.L. Chin, M.N. Ibrahim. (2016). Effect of different drying treatments on colour quality and ascorbic acid concentration of guava fruit. *International Journal of Food Research*. (IF = 0.33)
17. **M.A. Ali**, Y.A Yusof, N.L. Chin, M.N. Ibrahim. (2016). Processing of Moringa Leaves as Natural Source of Nutrients by Optimization of Drying and Grinding Mechanism. *Journal of Food Process Engineering*. <https://doi.org/10.1111/jfpe.12583> (IF = 2.889)
18. **M.A. Ali**, Y.A Yusof, N.L. Chin, M.N. Ibrahim. (2016). Compaction Behaviour of Moringa Oleifera Leaves Powder by Fitting into Compression Models. *Proceedings of CAFEi 2016* pp. 375-381
19. **Muhammad Azhar Ali**, Abdul Nasir, Anjum Muneer, Shoukat Ali, Umer Rashid. (2015). Compaction Characteristics of Sawdust, Cotton Stalks, Maize Straw and Rice Straw

Briquettes. Journal of Energy, Environment & Carbon Credits. 5(1): 1-9


20. Salman Ghaffar, Abdul Nasir, **Muhammad Azhar Ali** and Muhammad Usman Farid. (2015). Physico-thermal characterization of biomass materials of different nature of briquettes. J. Agric. Res., 2015, 53(4): 555-565
21. **M.A. Ali**, Y.A Yusof, N.L. Chin, M.N. Ibrahim. (2015). Effect of oven drying temperature on nutrients concentration and color quality of banana slices. The 8th Asia-Pacific Drying Conference (ADC 2015). Kuala Lumpur, Malaysia, 10-12 August 2015 22.
M.A. Ali, Y.A Yusof, N.L. Chin, M.N. Ibrahim, S.M.A. Basra. (2014). Drying Kinetics and Colour Analysis of Moringa Oleifera Leaves. Agriculture and Agricultural Science Procedia 2:394-400
23. **Muhammad Azhar Ali**, Abdul Nasir, Usman Haider, M. Usman Farid. (2014). Development and performance evaluation of an indigenous wet scrubber unit. Sci. Int. 26(5): 2269-2272
24. Abdul Nasir, Ch Arslan, Muhammad Azam Khan, Nabeel Nazir, Usman Khalid Awan, **Muhammad Azhar Ali** and Umar Waqas. (2012). Industrial waste water management in district gujranwala of pakistan- current status and future suggestions. Pak. J. Agri. Sci. 49(1), 79-85. (IF = 1.049)
25. **Muhammad A. Ali**, Abdul Nasir, F.H. Khan and M.A. Khan. (2011). Fabrication of ultra low volume (ULV) pesticide sprayer test bench. Pak. J. Agri. Sci., 48(2), 139-144. (IF = 1.049)

PATENT

1. Development of Moringa leaves orally disintegrating tablets as multivitamins. (2017). Patent no. **PI2017701083**.
2. Development of turmeric rhizome polisher tumbler machine. (under process)

PROJECTS

1. Biomass production of moringa and its utilization in livestock, food and pharmaceutical industries. Continue. Funded by Punjab Agricultural Research Board (PARB). From August 2019 to July 2022.
2. Performance evaluation and modification of existing indigenous biomass briquette forming machine. (PKR 5.42 millions). Completed. Funded by HEC. From 01-09-2014 to 31-10-2017.
3. Processing of raw turmeric using newly developed dryer and tumbler to preserve curcumin (PKR 1.586 millions). Completed. Funded by Endowment Fund Secretariat. From 01-07-17 to 30-06-18.
4. Optimization of drying mechanisms to produce nutritious ginger powder as tea (PKR 0.485 millions) Completed. Funded by HEC. From 01-07-2017 to 31-12-2017.


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5. On-Farm Processing of Moringa leaves as Cattle Feed Supplement (PKR 1.29 millions) Completed. Funded by Punjab Agricultural Research Board (PARB). From 01.04. 2018 to 31.03. 2019.
 6. Development and Fabrication of Biomass Compactor Machine as Source for Producing Bio Fuel Energy. (0.746 millions). Completed. Funded by Endowment Fund Secretariat. From 01-0712 to 30-06-13.
 7. Installation of “Demonstration Solar Model” for lecture rooms in Faculty of Agricultural Engineering & Technology. (0.60 millions). Completed. Funded by Endowment Fund Secretariat. From 01-0912 to 30-09-12.
 8. Developing Agricultural Waste Management System to Produce Different Kinds of Organic Fertilizers for Sustainable Agriculture (42.399 million) on-going. Funded by PARB. From 30.12.21 to 30.12.24.
 9. Extraction and Characterization of Gelatin and Pectin from Various Local Sources. (22.226 millions). on-going. Funded by PARB. From 30.12.21 to 30.12.24.
 10. Promoting the use Nutritious Grain Flour as a Strategy to Combat Malnutrition and Alleviate Pressure on Wheat Production in Pakistan. (2.81 million). On-going. Funded by Endowment Fund Secretariat. From 15-02-24 to 15-02-26.
 11. Development of an AI-based Small-scale Automated Citrus Grading Plate for Small Farmers. (1.66 millions). On-going. Funded by Endowment Fund Secretariat. From 15-02-2024 to 14-08-2025.

AWARDS

1. **Silver Medal** (Patent Competitions PRPi2016, Malaysia)

LIST OF COMMERCIALIZED PRODUCTS

1. Moringa leaf powder
2. Peeled Quinoa seeds
3. Chia seeds
4. Turmeric powder
5. Icing sugar
6. Stevia leaf powder
7. Cocoa powder
8. Multigrain flour
9. Gluten-free flour
10. Oats flour
11. Barley flour
- Barley porridge
13. Oats porridge
14. Moringa tea
15. Ginger tea

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16. Aloe Vera moisturizing soap
 17. Gluten-free biscuits
 18. Moringa leaf capsules
 19. Turmeric/Curcumin capsules
 20. Ginger capsules
 21. Cinnamon capsules

INSTRUMENTS/EQUIPMENTS EXPERTIES

1. **Food Drying** (Freeze, vacuum, spray, microwave, convection oven dryers).
2. **Food Processing** (hammer, cutter, disc, ball, vertical toothed and turbo mills).
3. **Food Nutrition** (HPLC, Soxhlet extraction, UV-Spectrophotometer, Refractometer etc.)
4. **Food Physical Properties** (bulk, true & tapped densities, particle size analyzer, colorimeter, texture analyzer, powder flow analyzer, liquid-liquid and solid-liquid extractors).
5. **Mechanical Manufacturing** (10 years' experience of design and manufacturing of agricultural and food machinery)

SOFTWARE EXPERTIES

1. Simulation and Mathematical Modelling
2. Autodesk Simulation Mechanical software
3. AutoCAD
4. Mendeley
5. Design of Experiments
6. Statistix
7. MS Office (Word, Excel, Power Point and Visio)

MEMBERSHIPS

1. Pakistan Engineering Council
2. Society of Agricultural Engineers and Technologists

REFERENCES

1. Dr. Yus Aniza Yusof, Prof./Deputy Director, Halal Food Laboratories/Department of Process and Food Engineering, University Putra Malaysia. Email: yus.aniza@upm.edu.my
2. Dr. Abdul Nasir, Prof./Chairperson, Department of Structures and Environmental Engineering, University of Agriculture, Faisalabad. Email: anawan@uaf.edu.pk

