

PERSONAL INFORMATION		
Name, Surname	Aysun ÖRÇÜN	
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Telefon	0090552 728 1888	
Place and date of birth	Sapanca/Sakarya 28.02.1985	
Nationality	TURKIYE	
Gender	Female	
Driver's License	Class B Driving License	
FOREIGN LANGUAGES		
Turkish, English		
EDUCATION INFORMATION		
2023-continue	Student (Agricultural Engineering/Field Crops) Sakarya University of Applied Sciences	Shoot Regeneration in Different Explants of Sunflower (<i>Helianthus annuus</i> L.) Plant, Sakarya University of Applied Sciences BAP Project No: 252-2024. (Recent Research Highlights)
2012 – 2021	PhD (Food Engineering/ Ankara University/ TÜRKİYE)	Development of Cereal and Pseudo-Cereal Based Fermented Functional Beverage and Determination of Some Properties, November 2016-November 2019, Ankara University BAP. Project no: 16L0443011.
2008 – 2011	Master's degree (Food Engineering/ Sakarya University/ TÜRKİYE)	Determination of Decarboxylation Activities and Biogenic Amine Production Abilities of Lactic Acid Bacteria Isolated from Shalgam (Şalgam), March 2010-September 2011, Sakarya University BAP. Project no: 2011-50-01-061.
2003 – 2008	Bachelor's degree (Biology/Ankara University/ TÜRKİYE)	-----
WORK EXPERIENCE		
2024 – Continue	Researcher, Directorate of National Botanical Garden of Türkiye-ANKARA	

2024 (for 9 months)	Researcher, Maize Research Institute-SAKARYA
2020 – 2023	Coordinator (Administrative Coordination and International Delegation), Biodiversity and Genetic Resources Working Group, Department of Horticulture Research, TAGEM-ANKARA
2019 – 2020	Researcher, Directorate of National Botanical Garden of Türkiye-ANKARA
2016 – 2019	Researcher, Internal Control Officer, Maize Research Institute - SAKARYA
2011 – 2016	Biologist, Quality Control Officer, Internal Control Officer Directorate of Çorum Food Control Laboratory - ÇORUM
COMPUTER INFORMATION	
Microsoft Office	
SOCIAL ACTIVITIES	
Camping, Traveling, Dancing, Trekking, Watching Theater, Cinema	
RESPONSIBILITIES	
<p>2022-2023 Secretariat of National Focal Point to the Commission on Genetic Resources for Food and Agriculture</p> <p>2022-2023 Secretariat of National Focal Point to International Treaty on Plant Genetic Resources for Food and Agriculture</p> <p>2022-2023 Asistant of National Coordinator European Cooperative Programme for Plant Genetic Resources (ECPGR)</p>	
ACADEMIC STUDY TOPICS	
<ul style="list-style-type: none"> • Biodiversity • Biotechnology (Tissue Culture and Molecular Biology) • Food Microbiology, Fermentation • Biology 	
PROJECTS	
<p>BAP (Research) Projects</p> <ul style="list-style-type: none"> • Shoot Regeneration in Different Explants of Sunflower (<i>Helianthus annuus</i> L.) Plant, Sakarya University of Applied Sciences BAP Project No: 252-2024. • Development of Cereal and Pseudo-Cereal Based Fermented Functional Beverage and Determination of Some Properties, November 2016-November 2019, Ankara University BAP. Project no: 16L0443011. • Determination of Decarboxylation Activities and Biogenic Amine Production Abilities of Lactic Acid Bacteria Isolated from Shalgam (Şalgam), March 2010-September 2011, Sakarya University BAP. Project no: 2011-50-01-061. <p>In Working Projects</p> <ul style="list-style-type: none"> • 2025- Researcher, Management of National Herbarium and Microscopic Slide Collections in the National Botanical Garden of Türkiye. 	

- **2021-2023** Project specialist, Project Contact Point, Biodiversa+ (European Biodiversity Partnership).
- **2022-2023** Expert on Biodiversa+ Task 2.5 Biodiversity Monitoring, Soil Sub-pilot (active participant) and Sub-pilot Invasive Alien Species (IAS) (observer) projects.
- **2018-2019** (Speaker) Plant Breeding and Agricultural Innovation Awareness in Sustainable Agriculture (Project No: 118B655), TÜBİTAK 4007.
- **2017-2019** (Researcher) Determination of the Reactions of Genotypes Developed in Maize Breeding Research in the Marmara Region against *Fusarium moniliforme*, which causes stem and cob rot disease, TAGEM.
- **2016-2018** (Researcher) Determination of Harmful Lepidoptera Species, Predators and Parasitoids in Egypt (*Zea mays*) in the Eastern Marmara Region, TAGEM.

RESEARCH&INNOVATION

- **Patent**

1. **A Fermented Gluten-Free Functional Beverage Production Method**” Turkish Patent and Trademark Office, **Patent No: TR 2017 12931 B**, Prof. Kamuran AYHAN, **Aysun METE**, PhD, Prof. Kezban CANDOĞAN, Associate Prof. Seçil TURKSOY, Ankara University.

- **Articles Published in International Journals**

1. **Mete, A.**, Cosansu, S., Demirkol, O., Ayhan, K. 2016. Amino acid decarboxylase activities and biogenic amine formation abilities of lactic acid bacteria isolated from shalgam. International Journal of Food Properties. <http://www.tandfonline.com/doi/full/10.1080/10942912.2016.1152479>

- **Papers Presented at International Scientific Meetings And Summaries (Proceedings) Book**

1. **Mete, A.** Ayhan, K. 2018. Functional Fermented Beverage Production by Using Cereal and Pseudo-Cereal. Page 56. International Eurasian Conference on Biological and Chemical Sciences, 26-27 April 2018 Ankara/Türkiye.
2. Coşansu, S., **Mete, A.**, Demirkol, O., Ayhan K. Amino acid decarboxylase activity of lactic acid bacteria isolated from shalgam. 4rd International Congress on Food and Nutrition, 12-14 Ekim 2011, İstanbul.

- **Poster Presentations Presented at International Congresses**

1. **Mete, A.**, Orhan, E. Ayhan, K. Mycotoxin Detection and Food Safety. 2nd International Forensic Toxicology. 26-30 May 2016, P149, Ankara/Türkiye
2. **Mete, A.**, Onar, D. Türksoy, S., Ayhan, K. Cereal-based fermented and non-fermented food and beverages. 15th International Cereal and Bread Congress. İstanbul-Türkiye. April 18-21, 2016, Nutrition and Health Section, Poster 45.
3. A. Yuksel, G. Yaldrak, **A. Mete**, C. Sebat, S. Cosansu and O. Demirkol. “Biogenic amine content of shalgam sold in Türkiye” International Food Congress Novel Approaches in Food Industry, 2011 MAY 26 – 29, 2:940, İzmir, Türkiye (poster).

- **Articles Published in National Congress**

1. G. Yaldrak, **A. Örcün**, S. Coşansu, O. Demirkol. A traditional cereal-based product “Uhut” Traditional Foods from Adriatic to Caucasus Symposium 15-17 April 2010 Tekirdağ, Türkiye.

MEMBERSHIP, TRAINING, COURSE, MEETING, CONGRESS, SYMPOSIUM AND OTHER ACTIVITIES

- Training Course of Chinese Academy of Sciences on “Belt and Road” and Developing Countries’ Modern Agriculture Efficient Cultivation and Management Technology, 08-21 September 2024, Center For Agricultural Resources Research (CAS), Shijiazhuang/China.

- Training Course on “Advancing Food Security through Sustainable Agricultural Inputs: Strategies and Practices for OIC Member Countries”, 27-29 August 2024 (online).
- 10th Session of the FAO International Agreement on Plant Genetic Resources for Food and Agriculture (ITPGRFA) Governing Body Meeting, Turkish Delegate, Rome, Italy, 20-24 November 2023.
- Participation in the “Practicalities for Biodiversa+ Pilot Workshop” in the European Biodiversity Partnership Horizon Europe program “Soil Biodiversity in Protected Near Forests” project, Bolzano, Italy, 14-16 November 2023.
- Dr. Mirza Gökgöl International Plant Genetic Resources Symposium, Member of Scientific Committee and participant, 6-9 November 2023, İzmir/Türkiye.
- Seminar on New Technologies for Storage, Preservation and Commercial Distribution of Fruits and Vegetables for Developing Countries, China National Research Institute of Food and Fermentation Industries Corporation Limited, 16 August-05 September 2023, Beijing/China.
- Biodiversa+ Workshop on “Monitoring Non-Indigenous Species Through Introduction Sites“, Organization and Speaker, 18-19 July 2023, Trabzon/Türkiye.
- European Cooperation Program on Plant Genetic Resources (ECPGR) 17th Steering Committee Meeting, Online, 30 May-01 June 2023, Lisbon/Portugal.
- European Cooperation Program on Plant Genetic Resources (ECPGR), Cryopreservation Working Group Meeting, Oral Presentation, Online, 03-04 May 2023, Prague / Czech Republic.
- “Genetic Resources and Gene Bank Management Training” Held in Collaboration with IOFS-TIKATAGEM, Oral Presentation, 26-30 September 2022, Ankara/Türkiye.
- Training Webinar on Acquisition, Conservation, Exchange and Safety Duplication of Plant Genetic Resources in OIC Member Countries - ASIA Chapter, Organized by COMSTECH, IOFS and BCI-PARC, trainer, 13-14 July 2021, Islamabad, Karachi, Tashkent.
- Ethnobotanical Research Techniques Training (Online), Harran University, 26-29 March 2021/Türkiye.
- 2018, ISO 9001:2015 Quality Management System Basic Training, GMP-Good Manufacturing Practices, GLP-Good Laboratory Practices, ISO-14001 Environmental Management System, Ankara.
- 2018, “Training on plant improvement using molecular markers and on next generation sequencing technologies”, 7th International Congress on Molecular Biology and Biotechnology, 27-28 April, Konya/Türkiye.
- 2017, The International Symposium on Biodiversity and Edible Wild Species (BEWS2017), 3-5 April 2017 in Antalya/Türkiye.
- 2016, Sensory Evaluation in Foods, Ankara University/Türkiye.
- 2015, Internal Control System Setup Training in Laboratories, Directorate of Hatay Food Control Laboratory/Türkiye.
- 2015, Occupational Health and Safety, Çorum/Türkiye.
- 2015, ICP-MS (Inductively Coupled Plasma – Mass Spectrometer) User Training, Directorate of Çorum Food Control Laboratory/Türkiye.
- 2014, Tempo Device User Training, Directorate of Çorum Food Control Laboratory/Türkiye.
- 2014, Internal and External Quality Control, Directorate of Çorum Food Control Laboratory/Türkiye.
- 2014, Internal Inspection Training, Directorate of Çorum Food Control Laboratory/Türkiye.
- 2013, Internal Control System, Antalya/Türkiye
- 2013, Method Validation and Measurement Uncertainty, Directorate of Çorum Food Control Laboratory.
- 2012, TS EN ISO / IEC 17025 Training, Directorate of Çorum Food Control Laboratory/Türkiye
- 2012, Training on Paint Analysis with HPLC, Directorate of Isparta Food Control Laboratory/Türkiye.
- 2010, Second International Molecular Methods in Food Microbiology Symposium and Workshop Series (April 29th - 30th), METU, Türkiye.

- 2007, cDNA Synthesis Workshop, ITU 1st National Molecular Biology and Genetics Student Congress (8-11 September), İstanbul/Türkiye.

Second Bachelors Thesis

SHOOT REGENERATION in DIFFERENT EXPLANTS of SUNFLOWER

(*Helianthus annuus* L.) PLANT

Aysun ÖRÇÜN

Sakarya University of Applied Sciences

Faculty of Agriculture

Supervisor: Associate Prof. Dr. Ferzat TURAN

This study aimed to develop an efficient and reproducible *in vitro* organogenesis method for sunflower (*Helianthus annuus* L.) by evaluating different explants and plant growth regulator concentrations. Sun 2239 CL hybrid sunflower seeds were used as genetic material. Cotyledon node and root node explants were cultured in MS medium supplemented with various concentrations of BAP (0, 0.25, 0.50, 0.75, and 1.00 mg/L) in combination with NAA (0.1 mg/L). The results indicated that cotyledon node explants exhibited the highest shoot regeneration potential, with the highest number of shoots (3) observed at BAP 0.25 mg/L + NAA 0.1 mg/L. Shoot length varied between 3.33 cm and 11.00 cm, with the longest shoots observed in the control group. Root node explants did not produce adventitious shoots but showed callus formation, with the highest callus weight (1.60 g) at BAP 1.00 mg/L + NAA 0.1 mg/L. These findings confirm that cotyledon node explants are more suitable for *in vitro* sunflower regeneration, providing a promising approach for the genetic improvement and micropropagation of sunflower.

January 2025, 35 pages.

Keywords: BAP, micropropagation, NAA, sunflower.

Ph.D Thesis

**THE DEVELOPMENT of CEREAL and PSEUDO-CEREAL BASED FERMENTED
FUNCTIONAL BEVERAGE and DETERMINING SOME CHARACTERISTICS**

Aysun METE

Ankara University

Graduate School of Natural and Applied Sciences

Department of Food Engineering

Supervisor: Prof. Dr. Kamuran AYHAN

In this thesis, developing a new fermented functional beverage, obtaining using 6 types of cereals and 3 types of pseudo-cereals and *Lactobacillus plantarum* ATCC 14917 and *Saccharomyces cerevisiae* (strain S288c, Kalecik and S1) were aimed. Sensory acceptability characteristics of all produced beverages were prioritized, various natural sweeteners were tried, optimization of the substrate, microorganisms and sweetener ratios used, achieving with the Response Surface Method (RSM) Box-Behnken model. Within the scope of the research, 89 beverages, 45 of which were for optimization, prepared and sensory evaluation analyzes (using 9-point hedonic scale (1-extremely bad; 9-excellent)) were tested. Trials were continued on beverages (pH: 4.00-4.50) with a general taste score of 6 (above the middle) and above, so two new different fermented beverages (gluten-containing and gluten-free) were produced with cereal and pseudocereal based functional properties. In the produced quinoa-oat and quinoa-buckwheatamaranth beverages were determined both physico-chemical, nutritional and functional properties by performing analyzes, respectively; volatile aroma compounds; organic acids; total sugar; ethyl alcohol (0.62 ± 0.02 ; 0.30 ± 0.00 g/L); color; energy value (28.33 ± 0.33 ; 24.50 ± 1.50 kcal/100g); soluble solids content (Brix); mineral substances; total amount of phenolic substance (9.94 ± 0.87 ; 10.25 ± 0.34 mg GAE / 100 g); antioxidant activity (1.00 ± 0.02 ; 0.70 ± 0.07 mg TE / 100 g), gluten (TE) and during shelf life pH, titratable acidity, total mesophilic aerobic bacteria counts and sensory evaluation.

July 2021, 103 pages

Key Words: Cereal, pseudo-cereal, fermented, functional beverage, functional food

Master Thesis
DETERMINATION OF DECARBOXYLATION ACTIVITY AND
BIOGENIC AMINES-PRODUCING ABILITY OF LACTIC ACID
BACTERIA ISOLATED FROM SHALGAM

Aysun Mete

Sakarya University

Department of Food Engineering

Supervisor: Associate Prof. Dr. Serap C. AKDEMİR

Serial dilutions from shalgam samples produced by traditional method were spread onto De Man Rogosa Sharpe (MRS) Agar and typical colonies were isolated. Out of 85 isolates, 56 confirmed as lactic acid bacteria (LAB). These isolates were identified as follow; 40 streptobacteria, 11 Lactobacillus spp., 3 Lactococcus spp., 1 Leuconostoc sp and 1 Streptococcus sp. Decarboxylase activity of isolates were tested using modified decarboxylase medium, added one of the histidine, ornithine, tyrosine, lysine, phenylalanine, arginine or tryptophan amino acids. Fifty three of 56 LAB isolates gave positive results for both arginine and tyrosine decarboxylase. One of the isolates (2C5) was tyrosine decarboxylase negative while two isolates (4C10 and 4E9) gave negative reaction for arginine decarboxylase. None of isolates could decarboxylate histidine, ornithine, lysine, phenylalanine or tryptophan. After LAB strains were grown in MRS Broth containing tyrosine and arginine, biogenic amines were detected quantitatively by HPLC (High Pressure Liquid Chromatography). All strains produced agmatine (105.78 – 867.53 mg/l) and tyramine (24.52 – 649.72 mg/l). Production of putrescine was not detected only for one isolate (0A8) while other isolates produced putrescine at the range from 2.09 to 33.34 mg/l. Tyrosine decarboxylase negative isolate (2C5) produced tyramine and arginine decarboxylase negative isolates (4C10 and 4E9) produced agmatine and putrescine. In other words, these three isolates gave false-negative results at decarboxylase test for corresponding amino acids. Although none of the isolates decarboxylated ornithine, almost all of the isolates produced putrescine suggesting these bacteria produced putrescine via agmatine deaminase or agmatinase and N-Carbomoylputrescine hydrolase enzymes. Therefore, it was concluded that during shalgam fermentation LAB were mainly responsible for tyramine and agmatine formation, as well as a small amount of putrescine.

August 2011, 60 pages

Key Words : Shalgam, Lactic acid bacteria, Decarboxylase activity, Biogenic amine