



**Karunya INSTITUTE OF TECHNOLOGY AND SCIENCES**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

MoE, UGC & AICTE Approved

NAAC A++ Accredited

## **SDG 2- ZERO HUNGER**

# **2 ZERO HUNGER**



## ***End hunger, achieve food security, improve nutrition and promote sustainable agriculture.***

According to the FAO, rapid economic growth and higher agricultural output have resulted in an almost 50% decrease in the number of persons experiencing undernourishment during the last 20 years. In addition to becoming self-sufficient in food production, India has the ability to cover the food needs of a significant portion of the world, according to Union Minister for Agriculture and Farmers Welfare Shri Narendra Singh Tomar. Unfortunately, severe malnutrition and hunger still present major challenges to development in many areas. According to statistics from the fifth National Family Health Survey (NFHS-5), which was carried out in 2019–21, 18% of mothers whose children were between the ages of 6 and 23 months said that their kid had not eaten anything in the 24 hours before the survey, referred to as “zero food” (S V Subramanian, Smriti Sharma, Indian Express, May 3, 2023).

By 2030, the Sustainable Development Goals (SDGs) seek to end all types of hunger and malnutrition and guarantee that everyone, particularly children, has year-round access to enough wholesome food.

Through scientific, social, and technological research, KITS aims to address human issues in the fields of food, water, health care, and sustainable energy. There are 7773 students and 663 academic and staff members at the university, representing a variety of ethnicities, languages, and dietary preferences.

### **Publications related to Zero Hunger: 46 (Annexure-I)**

#### **Campus Food Waste:**

**Campus food waste tracking:** The campus residence halls house close to 8,000 students. Three 80 m<sup>3</sup> biogas plants handle 20% of the 2.5 tonnes of food waste generated daily by the boys' and girls' dormitories. The biogas plant's treated wastewater is redirected to STP in the Bethany Resident Hall for storage and use in gardening and irrigation. Cooking is done with the gas that is produced. Additionally, after composting, the STP sludge is dumped on land as biofertilizer.

#### **Student Hunger**

**Student Food Insecurity and Hunger:** The student body is made aware of food conservation in order to combat hunger and food insecurity among students. All of the students receive regular updates on how to avoid food waste, which are shared in the mess reps' WhatsApp group.

**Students and staff hunger interventions:** On the university campus, there are four dining establishments serving continental, south Indian, and north Indian breakfast, lunch, and snacks. Four more locations are available for tea/coffee and fresh fruit juices between 9:00 am and 5:00 pm. Tamil Nadu, South Indian, Andhra, Kerala, and NRI mess cuisines are offered for students to choose from. Nutritious snacks like boiled peanuts, green or Bengal gram sprouts, and in the evening, tea and milk are offered. Students' and employees' requirements are also met by outsourced food outlets that include bakery goods, steamed dishes, soft coconut, fresh fruit juices, and drinks. Additionally, there are seven food vending machines available on campus at all times.

#### **Sustainable Food Choices on Campus:**

KITS offers five different food mess types: Tamil Nadu, Kerala, Andhra Pradesh, North India, and NRI mess because its students come from many states and countries with different culinary traditions. Students' and employees' meals also include sustainable ingredients. Students pursuing a

B.Sc. (Hons.) in Agriculture participate in the Experiential Learning Programme (ELP) in their final semester as a requirement for their degree. The gathered mushrooms are valued and sold to staff and students in the mushroom growing technology module. Likewise, in the food processing technology module, value-added millet-based goods and other sustainable foods were offered for sale on campus and at a Bethesda sales counter.



**Mushroom Production by ELP Students**



**Value addition in food by ELP Students**

#### **Provide healthy and affordable food choices for all on campus.**

On the proposal of the mess committee, the meal menu is updated every two months based on student preferences. to guarantee that the sanitary food served in the dorms is checked in accordance with the guidelines. All KITS farm products, including organic fruits and vegetables and nutritious food items made during ELP modules of the B.Sc. (Hons.) Agriculture Program, are sold to students and employees at a reasonable price at the company's sales center for farm produce and farm products, which is located at specific locations.

The administration prioritizes the health and well-being of its employees and students by offering a wide range of affordable nutritious food menu catering to the need of various regions of India. The cafeteria in the campus offers a varied menu that accommodates different dietary needs, such as vegetarian, non-vegetarian and gluten-free varieties. The Institution works with the local vendors to provide affordable meal plans in an effort to render healthy food accessible to everyone. By procuring ingredients from the neighbourhood communities, the Institution also promotes environment sustainability and livelihood for the community.

The following aspects ensure students' healthy food habits

1. In order to give students a well - balanced diet, the Institution ensures that the food menu provided in the hostel offers a variety of nutrient-rich meals such as fruits, vegetables, whole grains, lean proteins, meat choices and dairy products.
2. The Institution adhere to unwavering standards of excellence in food preparation at our hostel mess. The paramount focus on maintaining the highest quality and standards to prioritize students' health. Each product is well prepared with precision and care to provide not just meals but also a fine dining experience that meets the quality and nutritional integrity.
3. The Institution provide a variety of vegetarian and non - vegetarian food options to meet the needs of diverse dietary preferences and ensuring that all students have access to protein rich food.
4. Maintaining high standards of hygiene in the kitchen is essential to prevent food borne illnesses. To ensure nutritious food, proper storage of ingredients, regular cleaning, and adherence to food safety regulations are crucial.
5. The Institution makes sure that foods are prepared with the minimal amount of added sugar and salt necessary to support coronary health and lower the risk of lifestyle related diseases among students
6. The hostel administration prioritize use of natural ingredients in preparing food commodities. It is ensured that the food served to the residents is free from artificial food additives and synthetic colours.
7. The menu system ensures minimizing of the usage of processed foods, sugary snacks and beverages to reduce the intake of high calorie junk foods and to promote better body mass index.
8. Feedback system is effectively in place to assess the satisfaction and nutritional adequacy of the menu. Periodic surveys, suggestion boxes and frequent meetings are conducted to gather feedback on taste preferences, dietary concerns and overall satisfaction. This proactive approach enables continuous improvements in the food services, ensuring that the hostel mess remains as a source of healthy and enjoyable meals for all residents.
9. Instead of deep - frying food, we use cooking techniques like baking, grilling, steaming and sautéing to preserve food's nutritional value and cut back on intake of harmful fats.
10. To create a truly inclusive dining experience, Hostel menu provides regional choices. This initiative ensures that students can savour the familiarity and richness of their regional cuisine, promoting a sense of cultural connection and culinary enjoyment within the hostel environment.

11. KITS introduced a low-cost budget menu option in response to the diverse financial needs of our student community. With the help of this scheme, every student will be able to affordably enjoy a balanced and fulfilling dining experience without straining their budget.
12. Hostel menu embraces culinary diversity and changes monthly to give students a dynamic and varied meal experience. In addition to keeping things interesting, this monthly shift enables us to accommodate our students' diverse interests and preferences, making each month a nutritious journey for our students.

Karunya Institute of Technology and Sciences (KITS) offers 8 separate men's residences and 7 distinct ladies' residences, designed to provide comfortable accommodation in cozy single, double, triple, and four-bedded rooms, including air-conditioned options. These residences are organized by year, with separate facilities for first-year, second-year, and senior students. Each residence is self-sufficient, offering spacious rooms, lounges, dining halls, and recreational amenities to cater to both international and NRI students, as well as Indian residents.

The residences feature fully equipped gymnasiums, playgrounds, indoor game areas, utility stores, canteens, photocopy centres, hair salons, and laundry services. The residences are managed by a dedicated team led by the Chief Warden, supported by Joint Chief Wardens, Wardens, Assistant Wardens, Senior Residence Advisors (SRAs), and staff. Tutors are available for academic support, and counsellors regularly visit for student welfare and counselling activities.

Over 20 spacious dining halls serve wholesome and nutritious meals, offering a variety of North Indian, South Indian, Andhra, Kerala, vegetarian, and international cuisines, all prepared using a unique steam-cooking method. Students can choose their preferred mess and menu, with changes made based on the decisions of a student-led mess committee, representing all years and departments.

Residents have access to on-site dining facilities that offer a range of nutritious meal options to accommodate diverse dietary preferences. Each hostel has a dining hall attached to it. Following is the list of menu options.

- South Indian Veg & Non-Veg
- Kerala Veg & Non-Veg
- Andhra Veg & Non-Veg
- North Indian Veg & Non-Veg

- NRI menu

### South Indian Menu

Day	Breakfast	Lunch	Snacks	Dinner
Monday	Masala Dosai, Rava uppuma, Sambar, Coconut Chutney, Bread, Jam, Butter, Coffee/Milk/Tea	Rice, Dhal, Mutton Salna, Potato 65, Butter Milk, Curd Chillies, Ghee, Rasam, Vadagam, Pickle, Payasam	Tea/ Milk/ Coffee, Tea Cake	Chapathi, Egg, Sambar Rice, Gobi Soya Kurma, Mix Cut Fruits, (Veg: Sweet)
Tuesday	Poori, Potato Masala, Semiya, Kichadi, Chutney, Bread, Jam, Coffee/ Milk/ Tea	Rice, Keerai Sambar, Vendaka Puli Kulambu, Rasam, Curd, Carrot & Beans Poriyal, Appalam, Pickle, Water Melon Juice	Tea/ Milk/ Coffee Sundal	Parotta, Chettinadu Chicken, Chicken Salna, veg: Kadai Mushroom Masala, Veg Cutlet, Green Peas masala (Common: White Rice, Rasam, Buttermilk, Pickle, Banana)
Wednesday	Idiyappam, Coconut Milk, Boiled Egg Black Channa Curry, Rava Kichadi, chutney, Bread, Jam, Butter (Veg: Fruit / Banana) Coffee/ Tea/ Milk	Variety Rice, White Rice, Mix Veg Sambar, Butter Milk, Thuvaiyal, Cauliflower 65, Rasam, Vadagam, Pickle, Gulab Jamun	Tea/ Milk/ Coffee Veg Puff	<p>1<sup>st</sup> Week - Rice, Fish Fry, Fish Curry, Sambar, Rasam, (Veg: Cauliflower 65) (Sweet, Chips)</p> <p>2<sup>nd</sup> Week - Chicken Biryani with Chicken, chicken Salna. (Veg: Veg Biryani, Veg Subji, Soya 65) (Sweet) (Common: White Rice, Rasam, Onion Raitha )</p> <p>3<sup>rd</sup> Week - Ghee Rice, Pepper Chicken (Veg: Kadai Paneer, Chips) Chicken Salna, Raitha, Butter Milk, White Rice, Rasam</p> <p>4<sup>th</sup> Week - Chapathi, Channa Curry, Variety Rice, Thuvaiyal, Butter Milk, Fryams, Boiled Egg (Veg: Sweet)</p> <p>(Seasonal Fruit Slice - Common for all The Weeks)</p>
Thursday	Idli, Sambar, Kesari, Chutney, Idly podi, Oil, Semiya Uppuma Bread, Jam, Coffee/Milk/Tea	Rice, Channa Kulumbu, Aravai sambar, Rasam, Curd, Ghee, Beetroot Poriyal, Appalam,	Tea/ Milk / Coffee Coconut Bun	Chapathi, Pepper chicken, Chicken Salna (Veg: Paneer Butter Masala, Chips, Sweet) (Common: Banana,

		Pickle, Lemon Mint Juice		Pickle, White Rice, Rasam, Buttermilk)
Friday	Battura, Channa masala, Semiya, Kichadi, Chutney, Bread, Jam ,Butter, Coffee/Milk/Tea/	Rice, More Kulambu, Chicken Salna, Rasam, Keerai Poriyal, Butter Milk, Curd, Chilli Vadagam, Pickle, Sweet	Tea/ Milk/ Coffee / Samosa	Onion Uthappam, Sambar, Chutney, Lemon Rice, Boiled Egg (Veg: Sweet) Vadagam, Thuvaiyal, Pickle. Common: Seasonal Fruit Slice
Saturday	Pongal, Vadai, Rava Kichadi, Sambar Coconut Chutney, Bread, Jam, Coffee/ Milk/ Tea	Rice, Veg Sambar, Pasi Payaru Kulambu, Rasam, Curd, Curd chilly, Cabbage poriyal, Appalam, Pickle, Sarbath	Tea/ Milk / Coffee Cream Bun	Veg & Soya Biryani, onion Raitha, Veg Kurma, Boiled Egg, White Rice, Rasam, Butter Milk, Fryams (Veg: Sweet) Common: Banana
Sunday	Veg Noodles, Tomato & Chilli Sauce, Boiled Egg (Veg: Banana) Bread, Jam, Butter Coffee/ Milk/ Tea	Non Veg: Chicken Biryani, Chicken 65, Chicken Salna, (Veg: Mushroom Biryani, Kadai Veg Subji, Gobi 65, Chips, Fruit Custard, Sweet) (Common: White Rice, Rasam, Ice Cream, Onion Raitha (Monthly Once Jeera Samba )	Tea/ Milk/ Coffee Gooday Biscuit	Idly, Idli Podi, Oil, Tomato Thokku, Sambar, Coconut Chutney, White Rice, Rasam, Butter Milk, Pickle, Banana- Common

### North Indian Menu

Day	Breakfast	Lunch	Snacks	Dinner
Monday	Masala Dosai, Sambar, Rava Uppuma, Coconut Chutney, Bread, Jam, Butter, Coffee/ Milk / Tea	Chappathi, Dal Fry, Ghee, White Rice, Rasam, Buttermilk, Gobi 65, Mutton Salna, Green Salad, Fryams, Pickle, Payasam	Tea/ Milk/ Coffee Tea Cake	Methi Chappathi, Dhal Makni, Egg, Aloo Soya Subji, White Rice, Rasam, Lassi, Salad, Cut Fruits Mix, (Veg: Sweet)
Tuesday	Poori, Channa Masala, Semiya Kichadi, Chutney, Bread, Jam, Coffee/ Milk/ Tea	Chapathi, Rajma Dal, Ghee, Rice, Rasam, Curd, Cauliflower Soya Baji Green Salad, Pappad, Pickle, Water Melon Juice	Tea/ Milk/ Coffee Sundal	Parotta, Butter Chicken , Chicken Salna, Jal Jeera (Veg: Kadai Mushroom Masala, Veg Cutlet, Green Peas Masala) (Common: White Rice, Rasam, Pickle, Banana)

Wednesday	Toast Bread, Aloo Chat Masala, Omelette, Bread, Jam, Butter (Veg: Fruit Slice/ Banana) Rava Kichadi, Chutney Coffee/ Milk/ Tea	Chapathi, Dal Tadka, Jeera Pulao, Butter Milk, Sugar, Kadai Veg Subji, Rice, Rasam, Green Salad, Fryams, Pickle, Gulab Jamun	Tea/Milk/ Coffee Veg Puff	1 <sup>st</sup> Week - Chapathi, Rice, Fish Fry, Fish Curry, Dal Fry, Butter Milk, Rasam (Veg: Cauliflower 65, Sweet, Chips)  2 <sup>nd</sup> Week - Chicken Biryani with Chicken, Chicken Salna, Butter Milk (Veg: Veg Biryani, Veg Subji, Soya 65, Sweet) (Common: White Rice, Rasam, Onion Raitha )  3 <sup>rd</sup> Week - Veg Pulao, Pepper Chicken, Chicken Salna, Raitha, Butter Milk, White Rice, Rasam (Veg: Kadai Paneer, chips)  4 <sup>th</sup> Week - Methi Chapathi, Green Peas Masala, Masoori Ki Dal, Rice, Rasam, Butter Milk, Fryams, Boiled Egg (Veg: Sweet) (Common: Seasonal Fruit Slice)
Thursday	Aloo Paratha, Semiya Uppuma, Green Peas Masala, Chutney, Plain Curd, Bread, Jam, Coffee/ Milk/ Tea	Chappathi, Channa Dal, Rice, Rasam, Curd, Sugar, Aloo Peas Subji, Ghee, Green Salad, Pappad, Pickle, Lemon Mint Juice	Tea/ Milk/ Coffee Coconut Bun	Chapathi, Kadai Chicken, Chicken Salna (Veg: Paneer Butter Masala, chips, Sweet) (Common: Banana, Pickle, White Rice, Rasam, Buttermilk)
Friday	Battura, Channa Masala Semiya Kichadi, chutney, Bread, Jam, Butter, Coffee/ Milk/ Tea	Chapathi, Dal Palak Kadi pagoda, Rice, Rasam, Ghee, Butter Milk, Green Salad, Fryams, Pickle, sweet	Tea/ Milk/ Coffee / Samosa	Chappathi, Dal Tadka Jeera Rice, Green Salad, Boiled Egg (Veg: Sweet) (Common - Kadai Veg, Rice, Rasam, Butter Milk, Fruit Slice)
Saturday	Bavbun, Bavbun Masala, Poha Namkeen, Rava Kichadi, Chutney, Bread Jam, Coffee/ Tea/ Milk	Chappathi, Lasooni Dal Rice, Rasam, Curd, Sugar, , Bindi Masala, Green salad, Pappad, Pickle, Sarbath	Tea/ Milk/ Coffee Cream Bun	Methi Chappathi, Mix Dal, Veg Soya Biryani, Veg Kurma, Raitha, Green Salad, Fryams, Butter Milk, Rice, Rasam, Boiled Egg (Veg: Sweet) (Common – Banana)

Sunday	Veg Noodles, Tomato & Chilli Sauce, Boiled Egg (Veg: Banana) Bread, Jam, Butter Coffee/ Milk/ Tea	Non Veg: Hyderabadi Chicken Biryani, Chicken 65, Chicken Salna, (Veg: Mushroom Biryani, Kadai Veg Subji, Gobi 65, chips, Fruit Custard, Sweet) (Common; White Rice, Rasam, Ice Cream, Onion Raitha)	Tea/Milk/ Coffee Gooday Biscuit	Chappathi, Dhal Tadka, Lauki Ki Subji, Veg Pulao, Boondhi Raitha, Green Salad, Butter Milk (Common – Banana)
--------	---	---	---------------------------------	--

### Andhra Menu

Day	Breakfast	Lunch	Snacks	Dinner
Monday	Poori, Potato Masala, Rava Uppuma, Coconut Chutney, Bread, Jam, Butter, Coffee/ Milk/ Tea	Andhra Rice, chapatti, Tomato Pappu, Mutton Bone Pulusu, Mango Pickle, Gobi 65, Pappucharu, Podi/Oil, Perugu, Pudhina chutney, Ghee, Fryams, Green Salad, Payasam	Tea/ Milk/ coffee Tea Cake	Egg Fried Rice, Veg Fried Rice, Tomato & Chilli Sauce, White Rice, Rasam, Butter Milk, Fryams, Mix Cut Fruits (Veg: Sweet)
Tuesday	Masala Dosa, Semiya Kichadi, Sambar, Chutney, Bread, Jam, Coffee/Tea/ Milk	Andhra Rice, Chappathi, Munakaya Sambar, Gongura Papu, Puthinacharu, Podi/ Oil, Perugu, Green Salad, Cabbage-65, Pachadi, Pappad, Mango Pickle ,Water Melon Juice	Tea/ Milk/ Coffee Sundal	Parotta, Andhra Chicken, Chicken Salna, (Veg: Kadai Mushroom Masala, Veg Cutlet, Green Peas Masala) (Common: Andhra Rice, Rasam, Butter Milk Pickle, Banana)
Wednesday	Toast Bread, Veg Kurma, Mysore Bonda, Omelette, Bread, Jam, Butter (Veg: Fruit Slice) Rava kichadi, Chutney Coffee/Milk/Tea	Andhra Rice, chappati, Nimakaya Pappu, Tomato Charu, Drumstick Curry, Pickle, Podi, Oil, Perugu, Kothamalli Chutney, Bendakaya Vepudu, Green Salad, Vadagam, Gulab Jamun	Tea/ Milk/ Coffee Veg Puff	1 <sup>st</sup> Week - Chapathi, Andhra Rice, Fish Fry, Fish Curry, Tomato Pappu, Rasam, Perugu (Veg: Cauliflower 65, Sweet, Chips)  2 <sup>nd</sup> Week - Chicken Biryani with Chicken, Chicken Salna, Butter Milk (Veg: Veg Biryani, Veg Subji, Soya 65, Sweet) (Common: Andhra Rice, Rasam, Onion Raitha)  3 <sup>rd</sup> Week - Ghee Rice, Andhra Chicken, chicken Salna, Raitha,

				Butter Milk, White Rice, Rasam (Veg: Kadai Paneer, with Gravy, Chips) 4 <sup>th</sup> Week - Chapathi, Channa Curry, Sambar Rice, Rice, Rasam, Butter Milk, Fryams, Boiled Egg (Veg: Sweet) (Seasonal Fruit Slice - Common for all The Weeks)
Thursday	Aloo Paratha, Semiya Uppuma, Green Peas Masala, Chutney, Plain Curd, Bread, Jam, Coffee/ Milk/ Tea	Andhra Rice, Chappathi, Surakaya Pappu, Kodipulusu, Garlic Rasam, Pickle, Podi/ Oil, Perugu, Goungura Chutney, Lemon Mint Juice , Thondakaya Peanut Veppudu, Pappad, Salad, Ghee	Tea/ Milk/ Coffee Coconut Bun	Chapathi, Hyderabadi Chicken Curry, Chicken Salna, Coriander chutney, Onion Salad (Veg: Paneer Butter Masala, Chips, Sweet) (Common: Banana, Pickle, Andhra Rice, Rasam, Buttermilk)
Friday	Rava Idly, Vada (Without Pepper), Kesari, Semiya Kichadi, Sambar, Chutney, Idly Podi, Oil Bread, Jam, Butter, Coffee/ Milk/ Tea	Andhra Rice, Chappati, Anapkaya Pappu, Bhindi Pulusu, Pappu Charu, Podi/ Oil, Perugu, Kandagadda Veppudu, Veg Chutney, Green Salad, Pickle, Ghee, Fryams, Sweet	Tea/ Milk/ Coffee /Samosa	Chappati, Channa Masala, Tamarind Rice, Thuvayal, Andhra Rice, Rasam, Vadagam Butter Milk, Boiled Egg (Veg: Sweet) (Common: Fruit Slice)
Saturday	Battura, Channa Masala Rava Kichadi, Chutney, Bread, Jam, Coffee/ Milk/ Tea	Andhra Rice, Chappati, Sambar, Potato Tomato Curry, Malicharu, Podi/ Oil, Gee Perugu, Tomato Pachadi, Sarbath, Potato 65, Pappad, Pickle	Tea/ Milk/ Coffee, Cream Bun	Andhra Veg Dum Biryani, Boiled Egg, Veg Kurma, Andhra Rice, Kothamalli Charu, Butter Milk, Fryams, Onion Raitha (Veg. Sweet) (Common: Banana, pickle)
Sunday	Veg Noodles, Tomato & Chilli Sauce, Boiled Egg (Veg: Banana) Bread, Jam, Butter Coffee/ Milk/ Tea	Non Veg: Hyderabadi Chicken Biryani, Chicken 65 , Chicken Salna, (Veg: Mushroom Biryani, Kadai Veg Subji, Gobi 65, Chips, Fruit Custard, Sweet) (Common: White Rice, Rasam, Ice Cream, Onion Raitha)	Tea/ Milk/ Coffee Gooday Biscuit	Idly, Sambar, Chutney, Idli Podi, Andhra Rice, Lemon Charu, Buttermilk, (Common: Banana)

### Kerala Menu

Day	Breakfast	Lunch	Snacks	Dinner
Monday	Poori, Potato Masala, Rava Uppuma, Coconut Chutney, Bread, Jam, Butter Coffee/ Milk/ Tea	Kerala Rice, Dal, Mutton Salna, Rasam, Butter Milk, Chilli, Ghee, Pickle, Potato 65, Green Salad, Curd, Ghee, Vadagam, Injipuli, Payasam	Tea/ Milk/ Coffee Tea Cake	Chapatti, Egg, Sambar Rice, Gobi Soya Kurma, Mix Cut Fruits (Veg: Sweet)
Tuesday	White Puttu, Kadai Curry, Banana, Semiya Kichadi, Chutney Bread, Jam, Coffee/ Milk / Tea	Kerala Rice, Puli Kulambu, Pickle Keerai Sambar, Rasam, Carrot Beans Thoran, Erissery, Curd, Injipuli. Curd Chilli, Kerala Pappad, Water Melon Juice,	Tea/ Milk/ Coffee, Sundal	Kerala Parotta, Malabar Chicken, Chicken Salna, (Veg: Kadai Mushroom Masala, Veg Cutlet, Green Peas Masala) (Common: White Rice, Rasam, Buttermilk, Pickle, Banana)
Wednesday	Toast Bread, Veg Kurma Omelette, Bread, Jam , Butter (Veg: Fruit Slice) Rava Kichadi, Chutney Coffee/ Milk/ Tea/	Kerala Rice, Kerala Sambar, Rasam, Cauliflower 65, Pulissery, Butter Milk, Thenga Chammandhi, Green Salad, Vadagam, Pickle, Curd Chilli, Gulab Jamun	Tea/ Milk/ Coffee, Veg Puff	1 <sup>st</sup> Week - Kerala Rice, Fish Fry, Kappa, Fish Curry, Sambar, Rasam (Veg: Cauliflower 65, Sweet, Chips)  2 <sup>nd</sup> Week - Chicken Biryani with Chicken, Chicken Salna (Veg: Veg Biryani, Veg Subji, Soya 65, Sweet) (Common: White Rice, Rasam, Onion Raitha )  3 <sup>rd</sup> Week - Ghee Rice, Pepper Chicken (Veg: Kadai Paneer, Chips) (Common: Chicken Salna, Raitha, Butter Milk, White Rice, Rasam)  4 <sup>th</sup> Week - Chapathi, Channa Curry, Variety Rice, Thuvaiyal, Butter Milk, Fryams, Boiled Egg (Veg: Sweet) (Seasonal Fruit Slice - Common for all The Weeks)
Thursday	Idly ,Kesari, Vada, Semiya Uppuma, Sambar, Chutney, Idly Podi, Oil Bread, Jam, Coffee/ Milk/ Tea	Kerala Rice, Aravai Sambar, Rasam, Curd Chilli, Ghee, Beetroot Thoran, Channa Curry, Chammandhi, Ghee, Lemon Mint Juice,	Tea/ Milk/ Coffee Coconut Bun	Ghee Rice, Pepper Chicken, Chicken Salna (Veg: Paneer Butter Masala, Chips, Sweet) (Common: Banana, Pickle, White Rice,

		Kerala Pappad, Curd, Pickle, Injipuli,		Rasam, Butter Milk)
Friday	Idiyappam, Coconut Milk, Semiya Kichadi, Black Kadalai Curry, Chutney, Bread, Jam, Butter Coffee/ Tea/ Milk.	Kerala Rice, More Curry, Chicken Salna, Rasam, Aviyal, Sadya Kottu Curry, Butter Milk, Ghee, Charulli Chammandhi, Green Salad, Pickle Curd Chilli, Fryams, Sweet	Tea/Milk/ Coffee /Samosa	Chappathi, Channa Masala, Coconut Rice, Chammandhi, Vadagam Boiled Egg (Veg: Sweet) (Common: Seasonal Fruit Slice)
Saturday	Battura, Channa Masala Chutney, Rava Kichadi Bread, Jam, Coffee/ Milk/ Tea	Kerala Rice, Veg Sambar, Cherupayaru Curry, Rasam, Cabbage Thoran, Kalan, Curd, Kaicurry Chammandhi, Curd Chilli, Kerala Appalam, Pickle, Sarbath	Tea/ Milk / Coffee Cream Bun	Payaru Kanji, Chammandhi, Veg Soya Biryani, Egg, Veg Kurma, Onion Raitha, Fryams, Pickle, Butter Milk (Veg - Sweet) (Common: Banana)
Sunday	Veg Noodles, Tomato & Chilli Sauce, Boiled Egg (Veg: Banana) Bread, Jam, Butter, Coffee/ Milk/ Tea	Non Veg: Malabar Chicken Biryani, Chicken 65, Chicken Salna. (Veg: Mushroom Biryani, Kadai Veg Subji, Gobi 65, Chips, Fruit Custard, Sweet) (Common: White Rice, Rasam, Ice Cream, Onion Raitha)	Tea/ Milk/ Coffee, Gooday Biscuit	Crispy Dosa, Thakali Thokku, Sambar, Payaru Kanji, Coconut Chutney, Rice, Rasam, Fryams Butter Milk, Pickle, (Common: Banana)

### NRI Menu

Days	Breakfast	Lunch	Snacks	Dinner
Monday	Bombay Toast, Masala Dosa, Chutney, Sambar, Fried Egg, Corn Flakes, Peanut Butter, Oats, Bread, Boiled Channa, Coffee, Tea, Milk, Fresh Juice	Chappathi, Dhall Fry, Ghee, White Rice, Rasam, Buttermilk, Gobi 65, Mutton Salna, Chicken Fry, Ice Cream, Green Salad, Fryams, Pickle, Payasam, Banana	Tea/ Milk/ Coffee Tea Cake	Chapatti, Gobi Soya Kurma, Egg Fried Rice, (Tomato & Chilli Sauce) Sambar Rice, Tawa Chicken, Green salad, Boiled Egg, Sweet Lassi, Mix Cut Fruits
Tuesday	Poori, Channa Masala, Semiya Kichadi, Chutney, Boiled Egg, Boiled Vegetable, Oats, Bread, Corn flakes, Peanut Butter, Coffee, Tea, Milk, Fresh Juice	Chapathi, Rajma Dall, Ghee, Rice, Rasam, Curd, Cauliflower Soya Baji, Keerai Sambar, Carrot & Beans Poriyal, Green Salad, Pappad, Pickle, Water Melon Juice, Pepper Chicken, Ice Cream, Banana	Tea/ Milk/ Coffee Sundal	Kerala Parotta, Beef Fry, Chicken Salna, Green Salad, Pasta with White Sauce, Rice, Curd, Rasam, Papaya, Rose Milk

Wednesday	Pan cake, Toast Bread, Veg Kurma, Honey, Rava kichadi, Chutney, Masala Omelette, Oats, Corn Flakes, Peanut Butter, Bread, Boiled Peanut, Milk, Coffee, Tea, Fresh Juice	Chapathi, Dhall Tadaka, Sambar, Jeera Pulao, Butter Milk, Kadai Veg Subji, Rice, Rasam Green Salad, Fryams, Pickle, Gulab Jamun, Mutton Chettinadu, Ice Cream, Banana	Tea/ Milk/ Coffee, Veg Puff	1 <sup>st</sup> Week: Fish Menu 2 <sup>nd</sup> Week: Chicken Biryani Menu - Along with Other Items 3 <sup>rd</sup> & 4 <sup>th</sup> Week: Tawa Naan, Butter Chicken Masala, Egg Noodles, Tomato & Chilli Sauce, Rice, Rasam, Grapes, Green Salad, Badam Milk
Thursday	Aloo Paratha, Green Peas Masala Idly, Sambar, Chutney, Kesari, Curd, Boiled Egg, Sprouted Salad, Oats, Bread, Peanut Butter, Coffee, Tea, Milk, Corn Flakes, Fresh Juice	Chappathi, Channa Dhal, Rice, Rasam, Curd, Aravai Sambar, Aloo Peas Subji, Ghee, Beetroot Poriyal, Green Salad, Pappad, Pickle, Lemon Mint Juice, Chicken 65, Ice Cream, Banana	Tea/ Milk/ Coffee, Coconut Bun	Phulka, Corn salad, Ghee Rice, Chicken Chettinadu, Pasta with Tomato Sauce, Salna, Rice, Rasam, Apple, Grape Juice, Butter Milk
Friday	Veg Sandwich, Battura, Channa Masala, Oats, Scrambled Egg kichadi, Chutney, Boiled Peanuts, Bread, Honey, Peanut Butter, Coffee/ Milk/ Tea, Fresh Juice	Chapathi, Dhal Palak Keerai Poriyal, Rice, Anapkaya Pappu, Rasam, Ghee, Butter Milk, Green Salad, Fryams, Pickle, Sweet, Ice Cream, Butter Chicken, Banana	Tea/ Milk/ Coffee / Samosa	Chapathi, Mix Dhal Fry, Chicken Biryani, Boiled Egg, Onion Raitha, Chicken Salna, Green Salad, Pomegranate, Butter Milk, Banana Milk Shake
Saturday	Bavbun, Bavbun Masala, Poha Namkeen, Rava kichadi, Chutney, Pongal, Vada ,Sambar, Coconut Chutney, Boiled Egg, Oats, Boiled Channa, Bread, Jam ,Peanut Butter, Coffee/ Milk/ Tea/ Fresh Juice	Chappathi, Lasooni Dal, Veg Sambar, Rice, Rasam, Curd, Bindi Masala, cabbage Poriyal, Green Salad, Pappad, Pickle, Fruit Chat, Beef Fry, Ice Cream , Sarbath, Banana	Tea/ Milk / Coffee Cream Bun	Chapathi, Channa Masala, Chicken Manchurian, Masala Egg, Mushroom Fried Rice, Green Salad, Orange, Butter Milk, Sapota Milk Shake,
Sunday	Veg Maggi , Tomato & Chilli Sauce, Corn Flakes, Oats, Boiled Eggs, Bread, Boiled Vegetables, Pea Nut Butter, Coffee/ Milk / Tea	Hyderabadi Mutton Biryani, Chicken 65, Chicken Salna, Salad, Onion Raitha, Boiled Egg, Rice, Rasam, Ice Cream, Lemon Mint Juice, Fruit Custard	Tea/ Milk/ Coffee Gooday Biscuit	Romali Roti, Luki Ka Subji, Egg Noodles, Rice, Rasam, Butter Chicken Masala, Tomato Chilli Sauce, Water Melon, Vanilla Milk Shake

**Proportion of graduates in agriculture and aquaculture including sustainability aspects:**

Total number of graduates: 1948

Total number of agriculture graduates in the year 2023: 322

Proportion of graduates in agriculture: 16.5%

## National Hunger

### Access to Food Security Knowledge

Good agricultural practices boost crop productivity, which raises food security. Therefore, farmers need to have access to sustainable agricultural practices in order to boost crop yield. In order to facilitate knowledge sharing with farmers in Tamil Nadu, Kerala, and Telangana for final-year B.Sc. (Hons.) Agriculture students taking part in their Rural Agricultural Work Experience Programme (RAWE), KITS has signed Memorandums of Understanding (MoUs) with 13 ICAR-Krishi Vigyan Kendra (Farm Science Centres).

Students contributed to the dissemination of agricultural information to more than 700 farmers in the districts of Tamil Nadu and Kerala through a range of outreach programs, field demonstrations, exhibitions, and local attachments. Our students demonstrate to farmers how to employ advanced agricultural technologies, such drones for fertilizer and pesticide spraying, to boost farm productivity during the RAWE program.



**Knowledge Sharing with Farmers through live Demonstrations**

## Events for Local Farmers and Food Producers

As part of the RAWE program, KITS hosts events for local farmers and food producers through plant clinics and exhibits to engage with the farming community and share information.



**Knowledge Sharing with Farmers through method demonstrations**

## University Access to Local Farmers and Food Producers

Modern laboratory facilities in the fields of soil science and agricultural chemistry, plant pathology, plant genetics and breeding, entomology, and horticulture are available at the School of Agricultural Sciences. These facilities act as a knowledge centre to provide farmers with pertinent information.



**Soil and Water Testing Lab in School of Agricultural Sciences**

## **Soil Health Cards and advisories given to farmers**

The Soil Science and Agricultural Chemistry lab provides free soil and water sample testing, and farmers receive free consulting services in the form of Soil Health Cards.

The School of Agricultural Sciences' Pathology lab assists farmers in identifying plant diseases and offers suggestions for their management. Farmers can purchase lab-produced biofertilizers and bioagents at a reasonable cost.



## **Biofertilizers and bio-agents production**

Students of B.Sc (Hons) Agriculture in their ELP programme module on Commercial Nursery Management, Turmeric and small onion production were cultivated vegetables, propagated fruits and medicinal planting materials which are sold to farmers at reasonable prices.





### Sustainable Food Purchases

To enable local farming community to generate income KITS purchases fruits and vegetables for the hostel mess from the local wholesale traders at Irrutupallam, 3 km away from the university campus.

### Publications related to Zero Hunger

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
1.	Azadirachtin-based biopesticide affects the respiration and digestion in <i>Anticarsia gemmatalis</i> caterpillars	Farder-Gomes, C.F.  Saravanan, M.  Martínez, L.C.  Plata-Rueda, A.  Zanuncio, J.C.  Serrão, J.E.	2022	Toxin Reviews	41	2
2.	SARS-CoV-2 emerging Omicron subvariants with a special focus on BF.7 and XBB.1.5 recently posing fears of rising cases amid ongoing COVID-19 pandemic	Dhama, K.  Chandran, D.  Chopra, H.  Aminul Islam, M.  Emran, T.B.  Rehman, M.E.U.  Dey, A.  Mohapatra, R.K.  Praveen, S.V.  Mohankumar, P.  Sharma, A.K.  Bhattacharya, P.	2022	Journal of Experimental Biology and Agricultural Sciences	10	6
3.	Drought assessment in paddy rice fields using remote sensing technology towards achieving	Shams Esfandabadi, H.  Ghahary Asl, M.  Shams Esfandabadi, Z.  Gautam, S.  Ranjbari, M.	2022	British Food Journal	124	12

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	food security and SDG2					
4.	Leaf Pathology Detection in Potato and Pepper Bell Plant using Convolutional Neural Networks	Aldhyani, T.H.H.  Alkahtani, H.  Eunice, R.J.  Hemanth, D.J.	2022	7th International Conference on Communication and Electronics Systems, ICCES 2022 - Proceedings	-	-
5.	Genetic diversity, allelic variation and marker trait associations in gamma irradiated mutants of rice ( <i>Oryza sativa</i> L.)	Ramchander, S.  Leon, M.T.A.P.  Soufmanien, J.  Arumugam Pillai, M.	2022	International Journal of Radiation Biology	98	1
6.	Futuristic IoT based Smart Precision Agriculture: Brief Analysis	Swamidason, I.T.J.  Pandiyarajan, S.  Velswamy, K.  Leela Jancy, P.	2022	Journal of Mobile Multimedia	18	3
7.	A Novel Approach for Effective Crop Production using Machine Learning	Chowdary, V.T.  Robinson Joel, M.  Ebenezer, V.  Edwin, B.  Thanka, R.  Jeyaraj, A.	2022	Proceedings of the International Conference on Electronics and Renewable Systems, ICEARS 2022	-	-
8.	Scope and recent trends of artificial intelligence in Indian agriculture	Mary, X.A.  Popov, V.  Raimond, K.  Johnson, I.  Vijay, S.J.	2022	The Digital Agricultural Revolution: Innovations and Challenges in Agriculture through Technology Disruptions	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
9.	Drought prediction using artificial neural network	Metta, P.S.  Chintamaneni, A.  Kumar, A.  Yadav, J.  Kumar, V.  Bhaskar, B.	2022	2022 2nd International Conference on Advance Computing and Innovative Technologies in Engineering , ICACITE 2022	-	-
10.	Multi-omics intervention in Setaria to dissect climate-resilient traits: Progress and prospects	Aggarwal, P.R.  Pramitha, L.  Choudhary, P.  Singh, R.K.  Shukla, P.  Prasad, M.  Muthamilarasan, M.	2022	Frontiers in Plant Science	13	-
11.	Dryland Livestock Rearing Relies Heavily on Tree fodders: A Narrative Review	Manuvanthra, A.  Chandran, D.  Emran, T.B.  Aslam, M.M.K.  Savanth, V.V.  Kumar, M.  Sharma, R.  da Silva, L.E.  Pran, M.  Lishma, N.P.  Sureshkumar, R.	2022	Indian Veterinary Journal	99	10
12.	Comparative Study on Recognition of Food Item from Images for Analyzing the Nutritional Contents	Sreetha, E.S.  Naveen Sundar, G.  Narmadha, D.	2022	Lecture Notes in Electrical Engineering	905	-
13.	Enabling technologies for future robotic agriculture systems: A case study in Indian scenario	Mary, X.A.  Mani, K.  Raimond, K.  Johnson, I.  Dinesh Kumar, P.	2022	The Digital Agricultural Revolution: Innovations and Challenges in Agriculture through Technology Disruptions	-	-
14.	Performance of black rice ( <i>Oryza sativa</i> ) varieties grown in Namsai	Sangma, R.R.  Manpoong, C.  Sharma, A.  Devadas, V.S.  Singh, D.  Pandey, H.	2022	Research on Crops	23	1

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	district of Arunachal Pradesh, India					
15.	Robotic Utilization in Farming Field—A Review	Arulkirubakaran, D.  Malkiya Rasalin Prince, R.  Neil Anand, K.  Manikandan, N.  Jenny Manaswitha, D.  Lavanya, A.  Suresh, M.N.  Kishore, K.C.S.  Chauhan, B.  Vishal, S.	2022	Lecture Notes in Mechanical Engineering	-	-
16.	Integrating Genomics and Phenomics Tools to Dissect Climate Resilience Traits in Small Millets	Pramitha, L.  Choudhary, P.  Das, P.  Sharma, S.  Karthi, V.  Vemuri, H.  Muthamilarasan, M.	2022	Omics of Climate Resilient Small Millets	-	-
17.	A preliminary study on design of a modular agricultural mobile robot	Joseph, D.M.  Santhosh, S.  Yesudas, K.  Sojan, A.  Mahanta, G.B.	2022	AIP Conference Proceedings	2670	-
18.	UAVs for multidisciplinary applications: Introduction	Govarthan, R.  Hariharan, S.  Paul, J.  Mary, T.B.  Sagayam, K.M.  Elngar, A.A.	2022	Unmanned Aerial Vehicles and Multidisciplinary Applications Using AI Techniques	-	-
19.	A preliminary study on autonomous drone systems for agriculture pesticide spraying	Vishal, R.  Mahanta, G.B.	2022	AIP Conference Proceedings	2670	-
20.	Impact of Plant Health on Global Food Security: A Holistic View	Srinivasan, T.S.  Thankappan, S.  Balasubramaniam, M.  Bhaskar, V.	2022	Agriculture, Environment and Sustainable Development: Experiences and Case Studies	-	-
21.	Impact of IoT based Autonomous Farming Equipment on Crop Culture and	Kumar, N.  Singh, A.  Das, D.  Srivastava, D.  Talari, V.S.R.  Kurukwar, A.D.	2022	International Conference on Edge Computing	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	Management in the Agricultural Sector			and Applications, ICECAA 2022 - Proceedings		
22.	Drip Fertigation with Fertilizer Prescription Through STCR—IPNS—A Way Forward Towards Climate Change Mitigation	Rangasamy, S.  Subramaniyam, M.  Stephen, P.K.  Dey, P.	2022	Lecture Notes in Civil Engineering	176	-
23.	In vitro bio-efficacy of biocontrol agents and oil cakes against Pythium aphanidermatum from tomato	Madhumitha, B.  Gnanaprakash, S.  Jayapradha, C.  Thankappan, S.  Rathikannu, S.  Priyanga, T.	2022	Journal of Environmental Biology	43	6
24.	An Investigation on Impact of Malnutrition in Human Health and Technique to Evaluate the Nutrient Intake from the Food Image	Sreetha, E.S.  Sundar, G.N.  Narmadha, D.	2022	2022 IEEE International Power and Renewable Energy Conference, IPRECON 2022	-	-
25.	Wearable Environmental Monitoring System for Measurement of Environmental Parameters: A Pilot study	Jegan, R.  Evangeline, A.B.  Nimi, W.S.	2022	Proceedings - International Conference on Augmented Intelligence and Sustainable Systems, ICAISS 2022	-	-
26.	Approaches to Plant Nutrient Management Through Fertilization in India: Then, Now and the Future	Praveena Katharine, S.  Suguna Devakumari, M.	2022	Reviews in Agricultural Science	10	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
27.	An analysis on farmers awareness and perception towards Pradhan Mantri Fasal Bima Yojana Scheme in Coimbatore District of Tamil Nadu.	Kavitha, V.  Nandhini, S.U.	2022	International Journal of Agricultural and Statistical Sciences	18	2
28.	Synergizing artificial intelligence, 5G, and cloud computing for efficient energy conversion using agricultural waste.	Agrawal, A.V.  Shashibhushan, G.  Pradeep, S.  Padhi, S.N.  Sugumar, D.  Boopathi, S.	2023	Sustainable Science and Intelligent Technologies for Societal Development		
29.	DeepRice: A deep learning and deep feature based classification of Rice leaf disease subtypes	Ritharson, P.I.  Raimond, K.  Mary, X.A.  Robert, J.E.  J, A.	2024	Artificial Intelligence in Agriculture	11	-
30.	Revolutionizing the food industry: The transformative power of artificial intelligence-a review	Zatsu, V.  Shine, A.E.  Tharakan, J.M.  Peter, D.  Ranganathan, T.V.  Alotaibi, S.S.	2024	Food Chemistry: X	24	-
31.	A Study on AI-ML-Driven optimizing energy distribution and sustainable agriculture for environmental conservation	Glady, J.B.P.  D'Souza, S.M.  Priya, A.P.  Amuthachenthiru, K.  Vikram, G.  Boopathi, S.	2024	Harnessing High-Performance Computing and AI for Environmental Sustainability	-	-
32.	Capsule network-based disease classification for Vitis Vinifera leaves	Andrushia, A.D.  Neebha, T.M.  Patricia, A.T.  Sagayam, K.M.  Pramanik, S.	2024	Neural Computing and Applications	36	2
33.	Advanced deep learning approach	Zekrifa, D.M.S.  Lamani, D.  Chaitanya,	2024	Journal of Intelligent	46	2

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	for enhancing crop disease detection in agriculture	G.K.  Kanimozhi, K.V.  Saraswat, A.  Sugumar, D.  Vetrithangam, D.  Koshariya, A.K.  Manjunath, M.S.  Rajaram, A.		and Fuzzy Systems		
34.	Energy-efficient and location-aware IoT and WSN-based precision agricultural	Pushpavalli, M.  Jothi, B.  Buvaneswari, B.  Srinitya, G.  Prabu, S.	2024	International Journal of Computational and Experimental Science and Engineering	10	4
35.	Impact of Cloud Computing on the Future of Smart Farming	Johnraja, J.I.  Leelipushpam, P.G.J.  Shirley, C.P.  Princess, P.J.B.	2024	Signals and Communication Technology	2461	-
36.	Navigating climate change in southern India: A study on dynamic dry-wet patterns and urgent policy interventions	Gautam, S.  Shany V, J.	2024	Geosystems and Geoenvironment	3	2
37.	A review on the types of nanomaterials and methodologies used for the development of biosensors	Ghosh, S.  Sagayam, K.M.  Haldar, D.  Anton Jone, A.A.  Acharya, B.  Gerogiannis, V.C.  Kanavos, A.	2024	Advances in Natural Sciences: Nanoscience and Nanotechnology	15	1
38.	Beyond the surface: Microplastic pollution its hidden impact on insects and agriculture	Gautam, S.  Rathikannu, S.  Katharine, S.P.  Marak, L.K.R.  Alshehri, M.	2024	Physics and Chemistry of the Earth	135	-
39.	Foodomics: A sustainable approach for the specific nutrition and diets for human health	Mahato, D.K.  Kamle, M.  Pandhi, S.  Pandey, S.  Gupta, A.  Paul, V.  Kalsi, R.  Agrawal, S.  Islam, D.  Khare, S.  Singh, A.  Kumar, P.  Rab, S.O.  Saeed, M.	2024	Food Chemistry: X	24	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
40.	Integrated Pest Management Strategies Using Endophytic Entomopathogenic Fungi	Sumaiya Parveen, S.  Rashtrapal, P.S.	2024	Plant Science Today	11	1
41.	Temporal dynamics of urban air pollutants and their correlation with associated meteorological parameters: an investigation in northern Indian cities	Soni, P.S.  Singh, V.  Gautam, A.S.  Singh, K.  Sharma, M.  Singh, R.  Gautam, A.  Singh, S.P.  Kumar, S.  Gautam, S.	2024	Environmental Monitoring and Assessment	196	6
42.	Farm-era: Precision Farming with GIS, AI Pest Management, Smart Irrigation, Data	Reddy, K.P.  Roshni Thanka, M.  Edwin, E.B.  Ebenezer, V.  Stewart Kirubakaran, S.  Joy, P.	2024	7th International Conference on Inventive Computation Technologies, ICICT 2024	-	-
43.	Deep-millet: a deep learning model for pearl millet disease identification to envisage precision agriculture	Johnson, I.  Anitha Mary, X.  Peniel Winifred Raj, A.  Chalmers, J.  Karthikeyan, M.  Andrew, J.	2024	Environmental Research Communications	6	10
44.	Valorization of plant proteins for meat analogues design—a comprehensive review	Siddiqui, S.A.  Khalifa, I.  Yin, T.  Morsy, M.K.  Khoder, R.M.  Salauddin, M.  Farzana, W.  Sharma, S.  Khalid, N.	2024	European Food Research and Technology	250	10
45.	Assessing LDPE microplastics' impact on green gram ( <i>Vigna radiata</i> L. Wilczek)	Sravya, G.C.  Gautam, S.  Kumar, K.U.  Poonguzhali, R.S.  Manuel, R.I.	2024	Physics and Chemistry of the Earth	136	-
46.	Genome editing of Plant Growth-Promoting	Thankappan, S.  Binodh, A.K.  Kumar, P.R.  Kurien, S.	2024	Genome Editing in	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	Microbes (PGPM) towards developing smart bioformulations for sustainable agriculture: Current trends and perspectives	Narayanasamy, S.  Prabina, J.B.  Uthandi, S.		Bacteria (Part 2)		
47.	Plant-based biopolymers for wastewater pollutants mitigation	Harshan, K.  Rajan, A.P.  Kingsley, D.  Sheikh, R.A.  Aashmi, J.  Rajan, A.P.	2024	Physical Sciences Reviews	9	5
48.	Unveiling mungbean yellow mosaic virus: molecular insights and infectivity validation in mung bean ( <i>Vigna radiata</i> ) via infectious clones	Balasubramaniam, M.  Thangavel, T.  Aiyanathan, K.E.A.  Rathnasamy, S.A.  Rajagopalan, V.R.  Subbarayalu, M.  Natesan, S.  Kangarajan, S.  Muthurajan, R.  Manickam, S.	2024	Frontiers in Plant Science	15	-
49.	Crop water management using machine learning-based evapotranspiration estimation	Meenal, R.  Jala, P.K.  Samundeswari, R.  Rajasekaran, E.	2024	Journal of Applied Biology and Biotechnology	12	2
50.	Abiotic stress tolerance and antifungal activities of rhizobacteria for the management of soil-borne pathogens	Poria, V.  Jhulta, P.  Kumar, S.  Kumar, P.  Singh, S.  Rana, A.  Thankappan, S.  Goswami, A.K.	2024	Journal of the Saudi Society of Agricultural Sciences	-	-
51.	Spatial analysis and assessment of soil erosion in the southern Western Ghats region in India	B, A.  K.R, R.  R, S.R.  M, M.D.  K, R.	2024	Environmental Monitoring and Assessment	196	9
52.	Dynamics of Microbial Ecology, Particulate Matter, and Bacterial Aerosols in Agriculture:	Gautam, S.  Rathikannu, S.  T, J.J.  Bhagat, P.S.  Singh, V.V.  Lakra, A.R.	2024	Water, Air, and Soil Pollution	235	12

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	Implications for Health and Sustainability					
53.	Diagnosis of Plant Leaf Disease using Vision Transformer	Sundaraj, A.  Isravel, D.P.  Dhas, J.P.M.	2024	Proceedings of the 2024 10th International Conference on Communication and Signal Processing, ICCSP 2024	-	-
54.	Crop Recommendation and Disease Prediction Using IOT and AI	Sathya Priya, K.  Ancy Jenifer, J.  Janani, S.P.  Shilpa Aarthi, M.  Kavitha, T.	2024	Proceedings of the 2024 10th International Conference on Communication and Signal	-	-
55.	Smart Farming with Improved Security using Ascon Encryption and Authentication	Rahul, R.  Venkatesan, R.  Jebaseeli, T.J.	2024	2nd International Conference on Intelligent Data Communication Technologies and Internet of Things, IDCIoT 2024	-	-
56.	The Role of Digital Twins and Estimating their Impact on the Field of Agriculture in	Shirley, C.P.  Benny, B.  Vidhya, K.  Berin Jeba Jingle, I.	2024	Proceedings - 2024 4th International	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
	Promoting Sustainability			Conference on Pervasive Computing and Social Networking, ICPCSN 2024		
57.	Molecular and physiological characterization of early semi-dwarf mutants of rice and localization of SNP variants in Sd1 locus generated through gamma radiation	Ramchander, S.  M. T, A.-P.-L.  Khan, Y.J.  Soufmanien, J.  Arumugam Pillai, M.	2024	International Journal of Radiation Biology	100	4
58.	Unlocking the potential of Kodo millet: reviving an indigenous super grain for tomorrow's nutrition	Jeeva, G.  Suhasini, B.  Pramitha, L.  Jency, J.P.  Joshi, P.  Ravikesavan, R.  Elango, D.	2024	Planta	259	6
59.	Refining the major-effect QTL and candidate genes associated with grain number per panicle by QTL-seq in rice ( <i>Oryza sativa</i> L.)	Ariharasutharsan, G.  Karthikeyan, A.  Geetha, S.  Saraswathi, R.  Raveendran, M.  Krishna-Surendar, K.  Ananda-Lekshmi, L.-D.  Kailappan, A.  Suresh, R.  Devasena, N.	2024	Euphytica	220	10
60.	Mitigation of drought stress effects on alfalfa ( <i>Medicago sativa</i> L.) callus through CaO nanoparticles and graphene oxide in tissue culture conditions	YAZICILAR, B.  NADAROĞLU, H.  ALAYLI, A.  NADAR, M.  GEDİKLİ, S.  BEZİRĞANOĞLU, İ.	2024	Plant Cell, Tissue and Organ Culture	157	3
61.	Comprehensive Data Analysis of <i>Bacillus Thuringiensis</i> Cry Gene	Evangeline, M.S.  Thankappan, S.  Raimond, K.	2024	10th International Conference on	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
				Advanced Computing and Communication Systems, ICACCS 2024		
62.	DEEP LEARNING APPROACH WITH STACKED AUTOENCODERS AND DEPTHWISE	Jothimalar, T.  Daniel Madan Raja, S.  Thangammal, C.B.	2024	Journal of Environmental Protection and Ecology	25	2
63.	Design of Greenhouse System with Internet of Things and Machine Learning	Pari Pugazh, M.  Arul Xavier, V.M.  Shyni, S.S.	2024	10th International Conference on Advanced Computing and Communication Systems, ICACCS 2024	-	-
64.	The Fergusson squathopper, <i>Messena sinuata</i> Atkinson (Hemiptera: Eurybrachidae) and its egg parasitoids from Southern India	Binoy, C.  Hiremath, S.R.  Prathapan, K.D.	2024	Journal of Natural History	58	29-32
65.	Sustainable groundwater development using semi-supervised learning and community-led total forestry and pasture approach	S, U.M.  Alphy, A.  Deivasikamani, G.  Prakash, U.  Shadrach, F.D.  Kumar, M.A.  Manoj, S.	2024	Groundwater for Sustainable Development	25	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
66.	Integrated management of Fusarium wilt disease of banana in Kerala, India	Lishma, N.P.  Cherian, K.A.  Louis, V.  Sureshkumar, R.  Kumar, P.N.  Chandran, D.  Pran, M.  Sharma, R.	2024	Vegetos	37	1
67.	Enhancing the Spatial Resolution of Aerial Images using a Deep Generative Approach with Multi-Stage Residual Refinement	Shree Hari, B.  Joy, E.  Aroma, J.	2024	2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science, AMATHE 2024	-	-
68.	Smart Sensing Technologies and Data Analytics for Precision Agriculture	Isravel, D.P.  Silas, S.  Issac, T.  Kathrine, J.W.  Rajsingh, E.B.	2024	Artificial Intelligence for Precision Agriculture	-	-
69.	VGG-16 based Deep Learning Approach for Plant Species Detection	Praveen, B.  Israel, D.P.  Malar Dhas, J.P.	2024	2024 International Conference on Advances in Modern Age Technologies for Health and Engineering Science, AMATHE 2024	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
70.	Revolutionising Crop Yield Prediction in Agriculture: Harnessing Machine Learning and Environment Factors for Effective Solutions in the Face of Climate Change	Joel, M.R.  Ebenezer, V.  Kirubakaran, S.S.  Edwin, E.B.  Thanka, M.R.  Alex, E.J.	2024	Artificial Intelligence for Precision Agriculture	-	-
71.	Nanoencapsulation, Nano-Based Formulations of Graphene-Based Materials for Plant Growth Fertilizers and Nutrient Enhancers	Nadiger, S.  Jebasingh, B.  Muralakar, P.  Kumar, B.N.A.  Balakrishnan, M.E.N.  Tayade, A.	2024	Graphene-Based Nanomaterials: Applications in Food, Agriculture and Healthcare	-	-
72.	Thermophilic Microbes: Their Role in Plant Growth Promotion and Mitigation of Biotic Stress	Kumar, S.  Rahman, M.  Gayithri, M.  Anjali  Bouket, A.C.  Naveenkumar, R.  Ranjan, A.  Rajput, V.D.  Minkina, T.  Singh, R.K.	2024	Extremophiles for Sustainable Agriculture and Soil Health Improvement	-	-
73.	Knowledge Visualization Tools Relating to Agriculture	Samuel, P.  Reshmy, A.K.  Berna, I.E.  Ravikumar, S.  Udendhran, R.	2024	Artificial Intelligence for Precision Agriculture	-	-
74.	Scouting rice ( <i>Oryza sativa L.</i> ) landraces for moisture stress tolerance using morphometric diversity analysis	Kathireshan, P.K.  Binodh, A.K.  Thankappan, S.  Francis, N.  Selvaraj, R.  Ramasamy, N.K.  Alagarswamy, S.	2024	Plant Science Today	11	4
75.	Plant Disease Detection using CNN and Image Processing	Dhivinkumar, A.J.  Sophia, S.	2024	15th International Conference on	2	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
				Advances in Computing, Control, and Telecommunication Technologies, ACT 2024		
76.	Artificial Intelligence for Precision Agriculture	Raj, P.   Gayathri, N.   Kathrine, G.J.W.	2024	Artificial Intelligence for Precision Agriculture	-	-
77.	Ocimum Sanctum Linn Plant Fertilizer and Insecticide Spraying System with Disease Prediction using Machine learning	Aagaash, K.R.   Ramalakshmi, K.   Venkatesan, R.   Sundar, G.N.   Nancy, G.   Shirly, S.	2024	Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024	-	-
78.	Rainfall Prediction using Machine Learning Algorithms	Sai, P.S.   Thiyyagu, T.M.   Soumya, P.G.	2024	Proceedings of the 3rd International Conference on Applied Artificial Intelligence and Computing, ICAAIC 2024	-	-
79.	Ocimum Sanctum Linn Plant growth monitoring and irrigation system	Darwin Raj, A.   Ramalakshmi, K.   Venkatesan, R.   Sundar, G.N.   Nancy, G.   Shirly, S.	2024	Proceedings - 2024 4th International Conference on Pervasive	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
				Computing and Social Networking, ICPCSN 2024		
80.	Microbiome engineering to improve biocontrol and plant growth-promoting mechanisms	Shiny, E.  Mathew, J.  Jacob, A.  Rajashree, H.S.	2024	Microbiome Engineering : The New Dimension of Biotechnology	-	-
81.	Molecular interactions and genetic improvements of fungal entomopathogens	Parveen, S.S.  Radha, R.V.  Sridhar, R.P.	2024	Plant Science Today	11	3
82.	IoT based automatic temperature monitoring and adjustment system for the organic farm	Venkatesan, R.  Jebaseeli, T.J.  Ramalakshmi, K.  Hemanthkumar, P.B.	2024	AIP Conference Proceedings	3035	1
83.	Studies on genetic diversity in green gram ( <i>Vigna radiata</i> L. Wilczek) for yield and its attributing traits	John Kingsly, N.B.  Aravinth, R.	2024	Euphytica	220	1
84.	Smart farming in 6G navigating security challenges for agricultural innovations	Tirlangi, S.  Babu, B.H.  Meenakshi, S.  Sugumar, D.  Manikandan, R.  Dhanraj, J.A.	2024	6G Security Education and Multidisciplinary Implementation	-	-
85.	Genetic Improvement of Proso Millet Through Advanced Biotechnological Approaches	Francis, N.  Indhu, S.M.  Mohanapriya, B.  Ravikesavan, R.	2024	Genetic Improvement of Small Millets	-	-
86.	Exploration of Entomopathogenic Fungi for Insect Pest Management	Dhanapal, R.  Naveenkumar, R.  Vasanthi, E.A.P.  Parveen, S.S.	2024	Entomopathogenic Fungi: Prospects	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
		Sangeetha, B.  Ramkumar, G.		and Challenges		
87.	Monsoon Shifts and Their Impact on Air Quality and Weather: A Case Study of the Amaravathi River Basin, India	Kumar, R.P.  Brema, J.  Gautam, S.  Catherine, G.	2024	Aerosol Optical Depth and Precipitation: Measuring Particle Concentration, Health Risks and Environmental Impacts	-	-
88.	Development of CNN Model for Detecting Groundnut Leaf Diseases Using Mobile Net	Sree, Y.S.S.  Reddy, V.C.  Dolly, D.R.J.	2024	Proceedings of 2024 International Conference on Science, Technology, Engineering and Management, ICSTEM 2024	-	-
89.	Revolutionizing agricultural efficiency with advanced coconut harvesting automation	Yona Davincy, R.  Veemaraj, E.  Bijolin Edwin, E.  Stewart Kirubakaran, S.  Roshni Thanka, M.  Dafny Neola, J.	2024	International Journal of Informatics and Communication Technology	13	3
90.	A comprehensive review on mutation breeding milestones in cereals: Conventional to advanced molecular approaches to achieve sustainable goals in trait improvement	Jasmin, A.S.  Nilavu, E.D.  Jayakumar, A.  Petchiammal, I.K.  Pramitha, L.J.  Devasena, N.  Francis, N.  Madhavan, A.P.  Selvaraj, R.	2024	Plant Science Today	11	1

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
91.	Effect of Spacing, Nutrition and Their Interaction on Growth and Yield of Nerium (Nerium oleander L.) cv. Pink Single	Manjula, B.S.  Kulkarni, B.S.  Munikrishnappa, P.M.	2024	Indian Journal of Agricultural Research	58	4
92.	Precision Farming with Versatile Robotic Systems	Sharan, D.  Leelipushpam Paulraj, G.J.  Jebadurai, I.J.  Sharon Jemimah Peace, C.  Karan, I.	2024	2nd International Conference on Artificial Intelligence and Machine Learning Applications: Healthcare and Internet of Things, AIMLA 2024	-	-
93.	Multi-class Classification and Pretrained Sustainable Agriculture Model for Plant Leaf Disease Detection Using Resnet-101	Teja, A.R.  Stephen, S.  Subathra, M.S.P.  Edwards, S.E.V.  Mahmood, Md.R.  Mohan, A.  George, S.T.	2024	IET Conference Proceedings	2024	23
94.	From Farmers to Consumers: Optimization of Food Supply Chain Using Blockchain Technology	Denny, R.  Stewart Kirubakaran, S.  Santhiya, P.  Bijolin Edwin, E.  Ebenezer, V.  Roshni Thanka, M.	2024	Proceedings - 2024 3rd International Conference on Sentiment Analysis and Deep Learning, ICSADL 2024	-	-

S.No.	Title	Authors	Year	Scopus Source title	Vol	Issue
95.	Identifying Drought-Tolerant Rice Genotypes using Drought Response Indices and Machine Learning	Daniels, D.A.  Binodh, A.K.  Raimond, K.  Thankappan, S.	2024	2024 International Conference on Cognitive Robotics and Intelligent Systems, ICC - ROBINS 2024	-	-
96.	Utilizing IoT for Animal Farming Waste Detection: YOLO-Based Plastic Component Tracking with Buzzer Alert System	Nithisha, A.  Edwin, E.B.  Thanka, M.R.  Ebenezer, V.  Kirubakaran, S.  Mathu, T.	2024	Proceedings - 2024 4th International Conference on Pervasive Computing and Social Networking, ICPCS 2024	-	-