

#### DOST ready-to-eat food innovations are now part of DSWD relief packs

Ready-To-Eat Food (RTEF) innovations developed by the Department of Science and Technology (DOST)-such as the RTE Chicken Arroz Caldo, High **Biscuits/Crackers** Protein and RTE Complementary Food Paste (Momsie)-have been added to the Department of Social Welfare and Development's (DSWD) relief goods, which will be distributed to affected families within 24 to 48 hours after the onset of a disaster.

The RTE Chicken *Arroz Caldo* was developed by the DOST Industrial Technology Development Institute (ITDI) to serve as a first-stage relief food when power, gas, and potable water are not available. They are packed in flexible retort pouches that are easy-to-open, enabling direct consumption.

The High Protein Biscuit/Cracker was developed by DOST-FNRI as a snack intended for fitness enthusiasts and health-conscious individuals. It is also ideal as a food item in relief packs, providing a convenient and highprotein option during emergencies and disaster situations. The third featured food innovation, also from DOST-FNRI, is the RTE Complementary Food Paste (Momsie). This item is developed for infants and young children. This nutrient-dense food paste comes in a convenient sachet and is specifically designed to provide



essential nutrients for the growth and development of young children.

Aside from their primary use as emergency rations, the RTE Chicken *Arroz Caldo* and the High Protein Biscuit/Cracker can also be sold as convenience or on-the-go food. Both Momsie and the High Protein Biscuit/

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# Director's Message



As we begin another year of advancing food and nutrition research, I am proud to present the first quarter issue of the DOST-FNRI eDigest for 2025.

This issue reflects the Institute's unwavering commitment to promoting science-based solutions to the country's pressing nutritional concerns. The recently released 2023 National Nutrition Survey (NNS) findings once again underscore the persistent challenges we face such as rising rates of food insecurity, maternal and child malnutrition, and diet-related chronic diseases. Yet alongside these challenges, we are also seeing progress in the form of targeted nutrition technologies, evidence-based policy recommendations, and strengthened stakeholder engagement.

I commend our teams for their collaborative efforts in ensuring that our research not only informs but also empowers. In line with our advocacy for stronger nutrition policies, the Institute took an active role in the Wheat Flour Industry Consultation Workshop where we presented data on folic acid fortification. We also stood with national partners in launching the Philippine Strategic Plan in Addressing Obesity and Other Metabolic Disorders 2024-2028 during the World Obesity Day Forum, reinforcing our commitment to healthier Filipino lifestyles.

Of special note is the integration of the Institute's Ready-to-Eat (RTE) food innovations into the relief operations of the DSWD, ensuring timely and nutritious aid to families in times of crisis. Innovations like the High Protein Biscuits and Momsie Complementary Food Paste are not just products of research, but are also lifelines for vulnerable communities.

The Institute's dedication to inclusive growth extended to grassroots initiatives. Through the Kusina University training and communitybased engagements with Persons with Disabilities (PWDs) and women's groups, DOST-FNRI demonstrated how technical knowledge can uplift lives of Filipinos. Our engagements with partners like the Philippine Army, World Bank, and United Nations Children's Fund (UNICEF) also paved the way for cross-sectoral collaboration that enhances food systems and nutrition outcomes.

Photo news in this issue offers a glimpse of the hardworking teams behind our achievements. Trainings on Deoxyribonucleic acid (DNA) extraction, microbiological analysis, and mobile photography, public exhibits, and international collaborations are all testaments to our dynamic and passionate workforce.

As we look ahead, let us continue working together to ensure that every Filipino family, regardless of circumstance, has access to the nutrition they deserve. Through research, innovation, and inclusive partnerships, we move closer to building a food-secure and well-nourished Philippines.

Mabuhay ang agham at nutrisyon para sa bayan!

hnueder Atty. LUCIEDEN G. RAZ Director III

Officer-in-Charge, Office of the Director

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# News Flash

## DOST-FNRI presents findings on Folic Acid Fortification at Wheat Flour Industry Consultation Workshop

⊯ FJPBatallantes, Science Research Specialit I, TDSTSD



The DOST-FNRI presented its data on folic acid fortification of wheat flour and its stability in various food products in the recently conducted Wheat Flour Industry Consultation Workshop held on January 17, 2025, at the Wynwood Hotel Manila. This consultation workshop was organized by the National Nutrition Council (NNC), Nutrition International, and Food Fortification Initiative (FFI) for the members of the Wheat Flour Industry in preparation for the review of the Flour Fortification Program under Republic Act No. 8976.



Key attendees included Department of Health (DOH) Assistant Secretary NNC Executive and Director Dr. Azucena M. Dayanghirang represented by Nutrition Officer Ellen Ruth Abella, Nutrition International Country Representative Erwin O. Nacuray, FFI Director Mr. Scott Montgomery, and

DOST-FNRI Senior Science Research Specialist Abbie L. Padrones. Representatives from the wheat flour industry, fortificant importers and distributors, the food manufacturing sector, bakery associations, national government agencies, and nongovernment organizations also attended the activity.

The invited participants were identified as key contributors to ensure the efficient roll-out, implementation, and sustainability of the program.

The workshop provided a platform to inform industry stakeholders about the proposed amendments to the Flour Fortification Program and to solicit their feedback, comments, and concerns regarding the potential changes.

### DOST-FNRI conducts Training-Workshop for Kusina University Online Tutorial Services (KU)

& LBLandicho, Senior Science Research Specialist, TDSTSD



The DOST-FNRI, in partnership with the DOST Regional Office No. XI and the Provincial S&T Office of Davao del Norte, conducted a Training-Workshop for Kusina University Online Tutorial Services (KU). The training was held face-to-face at DOST-FNRI from February 10 to 12, 2025.

DOST-FNRI resource persons discussed topics on basic nutrition, meal planning, food buying, food storage, food preparation, food costing, food safety, current Good Manufacturing Practices and Menu Evaluation Plus. Participants were also engaged in workshops wherein they created one-week cycle menu and computed nutritional value of the recipe.

KU is currently implementing a research and development (R&D) project funded by the DOST-Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) under the Women-Helping-Women: Innovating Social Enterprises (WHWISE) program. Their project, titled "Implementation, Deployment, and Validation of Kusina University's OTS Community-Enabled Catering Management System," requires its members to undergo food safetyrelated training.

## **2024 National Nutrition Awarding Ceremony**



No less than His Excellency President Ferdinand R. Marcos, Jr. congratulated the recipients of various nutrition excellence awards from the local government units (LGUs) and local nutrition focal points (LNFPs) during the 2024 National Nutrition Awarding Ceremony (NNAC) held on March 7, 2025, at Crowne Plaza Hotel, Quezon City.

In his message, the President urged all LGUs to strengthen nutritional support for pregnant mothers and children during the First 1,000 Days of Life by integrating health and nutrition interventions into their annual investment programs. He was joined by the Secretary of Health and National Nutrition Council (NNC) Governing Board Chair. Dr. Teodoro J. Herbosa NNC and Secretariat Executive Director and DOH Assistant Secretary Azucena Milana-Dayanghirang.

Held annually, the NNAC recognizes outstanding LGUs and LNFPs for their exemplary efforts in implementing and sustaining their nutrition programs. In 2024, seven national awards were conferred:

- Consistent Regional Outstanding Winner in Nutrition (CROWN) Award;
- 2. First Year CROWN Maintenance Award;
- 3. Provincial Nutrition Action Officer Award;
- 4. City/Municipal Nutrition Action Officer Award;
- 5. District Nutrition Program Coordinator Award;
- 6. City/Municipal Nutrition Program Coordinator) Award; and
- 7. National Outstanding Barangay Nutrition Scholar Award.

The 2024 NNAC highlighted the vital contributions of LGUs and frontline nutrition workers in shaping policies, implementing nutrition programs, and championing nutrition advocacy in their respective communities.

The event was attended by NNC's partners and stakeholders, including DOST-FNRI. Representing the Institute were Atty. Lucieden Raz, Director III and Officer-in-Charge, Office of the Director, Ms. Rosemarie Dumag, Chief Science Research Specialist, Mr. Carl Vincent Cabanilla, Senior Science Research Specialist, and Ms. Jazelle Calayag, MS Graduate Fellow. DOST-FNRI is an active member of the NNC Technical Committee and other NNC-led technical working groups and interagency bodies. ■

#### DOST-FNRI supports national efforts to address obesity at the World Obesity Day 2025 Philippine Forum



The DOST-FNRI joined forces with local partners and stakeholders in celebrating World Obesity Day 2025 through a national forum and exhibit on March 10, 2025 at the Marco Polo Hotel, Ortigas, Pasig City.

With the rising prevalence of overweight and obesity in the Philippines, the National Nutrition Council (NNC), in partnership with the World Health Organization (WHO) Philippines, developed the National Policy on Addressing Obesity and Other Metabolic Disorders and the Philippine Strategic Plan as a roadmap for its prevention and management.

The forum served as a platform to officially launch and disseminate the Philippine Strategic Plan in Addressing Obesity and Other Metabolic Disorders 2024-2028. The event also aimed to challenge misconceptions, break stigmas, and promote a collective, unified approach to addressing overweight and obesity.

During the forum, Ms. Ma. Lilibeth P. Dasco, Supervising Science Research

Specialist of the Nutritional Assessment and Monitoring Division (NAMD) of DOST-FNRI, served as a panelist in the session on "Silent Epidemic: The Weight of Obesity Beyond the Scale."

The DOST-FNRI is an active member of the Technical Working Group on Overweight and Obesity Management and Prevention (TWG-OOMP), alongside NNC, WHO Philippines, the Philippine Association for the Study of Overweight and Obesity (PASOO), and The Policy Center.

# Writers Pool Corner

#### 2 in 10 pregnant women at-risk of giving birth to underweight babies, DOST-FNRI reveals



According to the 2023 National Nutrition Survey (NNS) by the DOST-FNRI, 19.1% of pregnant women, or approximately 2 in 10, are nutritionally at-risk.

Maternal nutrition plays a crucial role in the health of both the mother and the developing infant. Pregnant women who are nutritionally at-risk are more likely to deliver low-birthweight babies, which can lead to serious health issues for both mother and child.

The survey also found that a significant proportion of nutritionally at-risk pregnant women belonged to the poorest wealth quintile, making up 26.5% of the group.

Additionally, the survey revealed that 9.7% of lactating mothers, or about 1 in 10, suffered from chronic energy deficiency (CED). This means they consumed lesser food to get sufficient energy required for their increased nutritional and health needs demanded by lactation. Among lactating mothers, CED is considered a low-to-medium public health concern in the country.

Anemia is another major issue affecting pregnant women, with 21.8% or 2 in 10 being anemic, a problem classified as a mild-tomoderate public health concern. The prevalence of anemia remained relatively unchanged since the 2018-2019 NNS, where the percentage was 23%. Among lactating mothers, 11.2% were found to be anemic, a slight decrease from 13% in the 2018-2019 NNS, though still a notable concern.

The DOST-FNRI recommends that pregnant women and lactating mothers consume a balanced meal with a variety of iron-rich foods to address these nutritional challenges. There are two types of iron in food. Heme iron is found in animal sources such as pork, beef, chicken, fish, and seafood. Non-heme iron, on the other hand, is found in plant-based foods like legumes, leafy greens, whole grains, and nuts. Iron absorption is enhanced with the consumption of vitamin C-rich foods such as oranges, guava, and leafy vegetables.

In addition to dietary recommendations, DOST-FNRI developed technologies for the production of iron-fortified rice (IFR) rice-monao complementary and blends to help address iron deficiencies and improve the overall nutritional intake of mothers and infants.

With the 2023 NNS results as a reference, DOST-FNRI aims to support informed decision-making and foster the development of sustainable solutions that will improve the nutritional well-being of Filipinos. By working together, we can take significant strides toward building a well-nourished future for all.

# Photo News



The DOST-FNRI conducted a three-day Deoxyribonucleic acid (DNA) extraction training on January 8-10, 2025, at the DOST-FNRI Building, Bicutan, Taguig City. The activity was spearheaded by DOST Balik Scientist Dr. Lawrence David, Associate Professor of Molecular Genetics & Microbiology at Duke University.



The DOST-FNRI met the Philippine Army's (PA) Office of the Army Chief Surgeon on January 17, 2025, at the DOST-FNRI Building, to explore services related to the Meal Ready-to-Eat (MRE) products that the Army needs in field operations.



The Microbiological Laboratory of the DOST-FNRI assisted by the Food and Nutrition Training Unit (FNTU) conducted the first batch of Training on Microbiological Analysis of Food Pathogens on January 21-24, 2025, at the DOST-FNRI Building.



United Nations Children's Fund (UNICEF) Philippines met with DOST-FNRI on January 24, 2025, at the DOST-FNRI Building, to discuss collaboration on addressing National Nutrition Survey (NNS) data gaps and improving data dissemination for policy and program use.



The Proficiency Testing Laboratory (PTL) of the DOST-FNRI successfully concluded its first surveillance visit with special assessment based on ISO 17043:2023 on January 27-28, 2025 at the DOST-FNRI Building.



The Camarines Norte State College – Queen Pineapple Research and Development Institute (CNSC-QPRDI) visited DOST-FNRI on February 3, 2025, for a benchmarking activity on best practices in food and nutrition research and development.



The DOST-FNRI presented its nutrition priorities at the Country Programme for Children (CPC9) Outcome Review Meeting with Government Partners on February 3, 2025 at the Marco Polo Ortigas Hotel, Pasig City.



The DOST-FNRI showcased its commitment to driving Philippine R&D forward at the DOST's "ELEV8PH: Pushing S&T Frontiers for National Development" launched on February 5, 2025 at Dusit Thani Manila.



Participants from DOST Regional Offices and Provincial S&T Offices and DOST-attached agencies attended the virtual training "Empowering DOST Canteen Operators and Staff: Meal Management and Safe Food Handling Training" on February 6, 2025 via Zoom.



The DOST-FNRI participated in the 2025 School-Based Feeding Program (SBFP) Nutritious Food Products (NFP) and Milk Suppliers' Expo and Mapping held on February 10 - 14, 2025, at the DepEd Philippines Ecotech, Cebu City.



The DOST-FNRI and Home Development Mutual Fund, also known as the Pag-IBIG Fund, officially signed a Memorandum of Agreement (MOA) on February 11, 2025, at the DOST-FNRI Building, DOST-Compound.



The DOST-FNRI conducted a special career talk entitled "From Proposals to Happily Ever After: Balik Scientists' Journeys of Excellence" on February 14, 2025, at the DOST-FNRI Meeting Room. The event featured Balik Scientists Dr. Lawrence David and Dr. Gerard Bryan Gonzales, who shared their experiences in navigating academic and research careers locally and internationally



The DOST-FNRI successfully passed the ISO 9001:2015 Quality Management System (QMS) Surveillance Audit conducted by TÜV Rheinland on February 14, 2025, at the DOST-FNRI Building, DOST-Compound.



The DOST-FNRI brings back its Webinar on Food Additives: Safety and Usage, now featuring expanded topics and Continuing Professional Development (CPD) units for Registered Chemists and Registered Nutritionist-Dietitians held on March 6, 2025, streamed live via Zoom through the iTrain platform.



The DOST-FNRI and CGIAR engaged in an exploratory meeting to discuss potential partnership in the research areas of nutrition, food environment, food loss, and food waste towards sustainable urban and peri-urban agrifood system, held on March 6, 2025, at the DOST-FNRI

Conference Room.



The Alliance Bioversity International – CIAT visited DOST-FNRI to discuss collaborative efforts under the PALIGID Program—an initiative aimed at mapping and modeling geospatial and observational data to enhance food system sustainability, held on March 6-7, 2025, at the DOST-FNRI Conference Room.



The DOST-FNRI has received clearance from the Philippine Statistics Authority (PSA) to conduct the 2025 Updating of the Nutritional Status of Children and Other Population Groups Survey.



The DOST-FNRI conducted a Training-Workshop on Understanding the Link Between Diet Quality and the Economic Cost of Unhealthy Diets, held on March 11, 2025, at the DOST-ITDI KM-STICA Conference Room.



The DOST-FNRI, the World Bank, and the Food and Agriculture Organization (FAO) unveiled the new data on the economic costs of unhealthy diets in the Philippines, held on March 13, 2025, at the Marco Polo Ortigas Manila.



The DOST-FNRI in partnership with the Philippine Society for Microbiology (PSM) conducted a Training on Molecular Detection of Foodborne Pathogens for the members of the Microbiology Consortium of the Philippines on March 14, 2025, at the DOST-FNRI Building.



The DOST-FNRI conducted the "Capture, Create, Communicate: Training on Basic Mobile Photography, Videography, and Captioning on Social Media" on March 18, 2025, at the DOST-FNRI Meeting Room.



In celebration of National Women's Month, the DOST-FNRI Gender and Development Focal Point System (GFPS), in collaboration with the Technology Diffusion and S&T Services Division's Food and Nutrition Training Unit, conducted a special training session for female janitorial and security personnel, along with other DOST-FNRI employees, held on on March 24, 2025, at the DOST-FNRI Meeting Room.



Around 300 police officers attended the Babaeng Kawani ng NCRPO: Kalusugan at Nutrisyon mo ay Mahalaga" on March 26, 2025, at the Philippine National Police -National Capital Region Office (PNP-NCRPO) Hinirang Multipurpose Hall, Camp Bagong Diwa, in celebration of the 2025 National Women's Month. This initiative reinforces this year's Women's Month commitment to empowering women not just in public service but also in promoting family health and wellness.



The DOST-FNRI, in partnership with the DOST-National Capital Region (DOST-NCR), conducted a livelihood training titled, "Abot Kaalaman at Kabuhayan Para sa PWDs" on March 26, 2025, at the Brgy. Hall San Antonio Valley 1, Parañaque City.

## 1 in 10 Pinoy adults has elevated blood pressure—DOST-FNRI



One in 10 or 13 percent (%) of Filipino adults has elevated blood pressure (BP), the 2023 National Nutrition Survey of the DOST-FNRI revealed.

Elevated BP refers to a reading slightly above the ideal range. Blood pressure helps move blood through the circulatory system.

Having elevated BP causes the heart to work harder to pump blood which can strain the wall of the heart's pumping chamber.

Normal blood pressure is below 120/80 millimeters of mercury (mmHg), while elevated blood pressure means that the systolic blood pressure is greater than or equal to 140 mmHg and the diastolic blood pressure is greater than or equal to 90 mmHg.

Several risk factors contribute to elevated blood pressure, including age, family history of hypertension, poor diet, obesity, and insufficient physical activity.

The same survey found that around 4 in 10 or 39.8% of Filipino adults are obese, using the Asia-Pacific body mass index (BMI) cut-off points (BMI:  $\geq$ 25.0 kg/m<sup>2</sup>) while about 5 in 10 or 46.9% are insufficiently physically active.

The survey also revealed that elevated blood pressure is more common among men at 15.4% than women at 10.4%.

Elevated BP is also more prevalent in urban areas at 13.3% and among the wealthiest households at 29.1%, the survey results further revealed. One of the dangers of elevated BP is that it often has no visible symptoms, earning it the title "silent killer".

Left unmanaged, elevated BP can lead to serious health complications such as stroke, heart failure, and kidney damage.

Thus, the DOST-FNRI strongly advocates for nutrition education and campaigns on awareness and prevention of hypertension and other related diseases.

The Institute also recommends expanding efforts to improve access to healthcare and the quality of health services especially in remote and disaster-prone areas.

Community-based support groups for individuals with hypertension facilitated

#### **DOST-FNRI** recommends iron-fortified rice for anemic women



One in every 10 or 10.9% of nonpregnant and non-lactating women 15 to 49 years old is anemic, according to the 2023 National Nutrition Survey (NNS) of the DOST-FNRI.

This prevalence suggests that anemia is a "mild" public health problem, based on the cut-off set by the World Health Organization (WHO) in 2011.

Likewise, anemia is considered a "mild" public health problem among lactating mothers at 11.2%, the NNS also revealed. The NNS likewise noted that 2 in every 10 or 21.8% of pregnant women are anemic, indicating a "mild to moderate" public health problem.

Anemia is a condition where the number of red blood cells or the hemoglobin concentration in the blood is lower than normal. If the hemoglobin level is low, there will be a decreased capacity of the blood to carry oxygen from the lungs to the different parts of the body, which may result in fatigue, dizziness, and shortness of breath.

The most common cause of anemia is iron deficiency. Inadequate consumption of iron-rich food and the physiological changes experienced by women, such as heavy menstrual bleeding and pregnancy may lead to iron deficiency anemia (IDA).

IDA can be prevented with a healthy, balanced, and iron-rich diet.

Foods, such as red meat, poultry, seafood, and organ meats are recommended to increase iron levels in the body as they contain heme iron – a type of iron that the body absorbs quickly and easily. Dark green leafy vegetables and beans, containing nonheme iron, can also be eaten, but are less absorbable.

Related to this, the DOST-FNRI developed the "Iron-Fortified Rice" or IFR to help reduce the prevalence of anemia in the country.

The IFR is a blend of well-milled rice and an iron fortificant in a rice kernel form, which can be stored for a year without significantly losing its iron content.

Each serving of 65 grams(g) of raw IFR contains 52g total carbohydrates, 4g protein, 230 calories, and 1.3 milligrams(mg) of iron, which can provide 4.6% of the recommended iron intake per day for women of reproductive age (WRA).

Because rice is the staple food in the Philippines, frequent consumption of iron-fortified rice can make a significant difference in reducing and preventing anemia. ■

#### Bring in the tomatoes for tasty soups and nourishing salads

S JRBBanzuela, Project Technical Assistant II, TDSTSD



Tomatoes are extremely versatile cooking ingredients that burst in flavor and boost the nutritional value of any dish.

Technically a fruit, but also considered a vegetable, depending on how it is prepared, tomatoes are an excellent source of lycopene, gammaaminobutyric acid (GABA), and potassium, especially when consumed fresh or raw.

Lycopene is a carotenoid found in tomatoes and is one of the most potent antioxidants among dietary carotenoids.

Studies led by Mozos in 2018 suggest that lycopene can promote heart health, while related research by the team of Kapala in 2022 found that it might play a role in cancer prevention.

Tomatoes are also one of the top sources of GABA among crops.

GABA is a compound that helps regulate mood, enhances stress tolerance, and improves cognitive performance, according to a study led by Liwinski in 2023.

In addition to these benefits, tomatoes are also rich in potassium that support kidney function, bone strength, and muscle mass.

Based on the Philippine Food Composition Tables (FCT) of the DOST-FNRI, a cup of raw tomatoes provides about 273 milligrams (mg) of potassium, which meets roughly 14% of the daily potassium needs of Filipinos 10 years old and above.

However, certain regions in the Philippines still experience periods of tomato surpluses, which can lead to low farm gate prices. This surplus makes it challenging for local farmers to maintain a decent income.

The DOST-FNRI developed techniques for preserving tomatoes and other fruits

and vegetables to help address losses during bumper harvests and even add value to surplus produce that would otherwise go to waste.

These include the Low Heat, Low Humidity Drying System (LH)<sup>2</sup> and the application of GABA powders to mature green tomatoes.

Both methods help preserve the availability and nutritional value of tomatoes and other perishable or seasonal fruits and vegetables throughout the year. These contribute to food security, reducing food waste, and income loss.

Another practical way to preserve tomatoes is by making homemade tomato-based sauces and juices.

These preserved food products can retain the flavors of tomatoes that can be enjoyed in a variety of dishes for a longer time.  $\blacksquare$ 

#### 3 in 10 Pinoy households still suffer from food insecurity



Three in ten Filipino households or 31.4% experience moderate to severe food insecurity, according to the 2023 National Nutrition Survey (NNS) of the DOST-FNRI.

This is a slight improvement from the 33.4% reported in 2021 ENNS. However, there is a percentage increase in severe food insecurity, with 2.7% of households now reporting severe hunger, compared to 2.0% in 2021.

According to the Food and Agriculture Organization (FAO, 1996) of the United Nations (UN), food insecurity is when people are at risk of inadequate food consumption to meet the nutritional requirements of the body as a result of the physical absence of food, lack of social or economic access to adequate food, and poor food utilization. The 2023 NNS also reported that food insecurity is disproportionately higher among households with more than five (5) members, families residing in rural areas, and those with the lowest income.

These groups face greater challenges in accessing food due to limited resources and socio-economic challenges.

The survey likewise identified coping mechanisms of households in mitigating the effects of food insecurity.

According to the 2023 NNS, 7 in 10 or 65.1% of these households resorted to purchasing food on credit while 67.3% turned to non-food coping mechanisms, such as borrowing money from relatives, highlighting their reliance on social networks to meet essential needs.

Food security, according to the FAO, is when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Additionally, the FAO mentioned that food security is built on four pillars: availability, access, utilization, and stability. When these pillars are not adequately supported, households experience food insecurity.

The 2023 NNS also revealed that households that experience moderate to severe food insecurity were concentrated in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), Eastern Visayas, SOCCKSARGEN, Zamboanga Peninsula, and CARAGA.

#### DOST ready-to-eat food innovations... from p. 1

Cracker are ideal for school and community-based feeding programs, helping to ensure that infants, young children, and individuals have access to nutritious food. Currently, the High Protein Biscuit/Cracker is also included in the cycle menu of the school-based feeding program of the Department of Education (DepEd).

Moreover, DOST-FNRI provided a comprehensive nutritional analyses and sensory evaluation to ensure the food products in the RTEF Box from DSWD are not only nutritious but also delicious. and safe. The testing of food items in the RTEF Pack coincided with Science Chief Renato U. Solidum Jr.'s declaration of support for food safety when he said, "We have enhanced the chemical and microbiological testing capabilities for new food safety parameters to address market and regulatory requirements," referring to the DOST's proficiency testing schemes to ensure reliable chemical accurate and measurements food for safety.

The featured RTEFs are still open for technology adoption. Interested entrepreneurs may get in touch with the Technology Licensing Offices of the DOST-ITDI for the RTE Arroz Caldo and DOST-FNRI for the RTE Complementary Food Paste (Momsie) and High Protein Biscuit/Cracker.

#### <u>1 in 10 Pinoy adults has elevated ... from p. 10</u>

by healthcare workers trained in dietary and physical activity counseling are important.

It is also important to increase intake of fiber-rich foods such as whole grains, fruits, and vegetables, reduce dietary fat, quit smoking, and limit





alcohol consumption to prevent further complications.

Regular blood pressure monitoring is a must, especially for individuals who have been diagnosed with hypertension.

3 in 10 Pinoy households... from p. 13

The DOST-FNRI recommends targeted policy interventions such as strengthening social safety nets, improving agricultural productivity, and investing in rural infrastructure that can help address food insecurity and its impacts on food and nutrition outcomes. This allows timely intervention if hypertension or other related forms like primary hypertension or resistant hypertension are detected.

Consulting with a healthcare provider is important in managing any concerns effectively. ■

Partnerships with the private sector are also crucial for fostering innovation and improving food systems. ■

# Employees' Corner

## **CONGRATULATIONS!**

## Newly promoted and staff with original appointments



January 8, 2025 (from left to right) Joanne Jette S. Gulay, Senior Science Research Specialist, Allain Louies P. Dalisay, Science Research Specialist I



January 10, 2025 **Ciara Claire SB. Kahanap,** Science Research Specialist I



February 26, 2025 (from left to right) **Ma. Evette B. Misagal**, Science Research Specialist II, **Mildred O. Guirindola, Ph.D.**, Chief Science Research Specialist



March 25, 2025 **Rose Ann Q. Basilio,** Administrative Assistant II (Bookkeeper)

# Library Acquisitions

Ľ	KMDilag,	Science	Research	Specialist II,	TDSTSD
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Call Number	Title/Author	Publication / Year
FN RA 645.3.P5 M46 2024	Environmental factors affecting the BMI of older adults in the Philippines spatially assessed using machine learning / D.K. Mendoza, A.B. Araza, L.D. Groot, M. Mensink, and R.C. Tan	Heliyon / 2024
FN QP 141.A1 F739pan 2022	2019 Expanded National Nutrition Survey monograph series: the food, health, and nutrition situation of Pangasinan / <i>Food and Nutrition Research Institute</i>	Food and Nutrition Research Institute / 2022
FN QP 141.A1 F739pu 2022	2019 Expanded National Nutrition Survey monograph series: the food, health, and nutrition situation of Puerto Princesa City / <i>Food and Nutrition Research Institute</i>	Food and Nutrition Research Institute/ 2022
FN HJ 4655 A5 2023	A comparative analysis of the cost-utility of the Philippine tax on sweetened beverages as proposed and as implemented / Oliver Huse, Kathryn Backholer, Phoung Nguyen, Anthony Calibo, Mildred Guirindola, Josie P. Desnacido, Gary Sacks, Andrew Colin Bell, Anna Peeters, Imelda Angeles-Agdeppa, and Jaithri Ananthapavan	The Lancet Regional Health - Western Pacific / 2023
FN RA 645.S3 C37 2023	Highlighting the role of nutrition and exercise among older Filipinos: updates on sarcopenia research in the Philippines / Danica Alexis D. Carandang, Charisse Lane Y. Molano, and Robby Carlo A. Tan	Active Aging Consortium Asia Pacific / 2023
FN RA 1236 G85 2024	Dietary exposure assessment of Filipinos to sodium benzoate in water-based beverages / R.E.P. Guilaran, K.B. Nacionales, E.G. Billedo, C.M.B. Agor, P.B.M. Bruiser, M.F.M. Lipana, J.R.A Matanguihan, and A.G. Lundag	Food Research / 2024
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