

QUARTERLY PHYSICAL REPORT OF OPERATION
as of 4th Quarter 2022

Department: DEPARTMENT OF SCIENCE AND TECHNOLOGY
Agency: INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE
Operating Unit:
Organization Code: 190050000000

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☒ Current Year Appropriations
☐ Supplemental Appropriations
☐ Continuing Appropriations
☐ Off-Budget Account

| Particulars | UACS CODE | Physical Targets | | | | | Physical Accomplishments | | | | | Variance as of Q4 | Remarks |
|--|-----------|------------------|-------------|-------------|-------------|-------|--------------------------|-------------|-------------|-------------|-------|-------------------|---|
| | | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Total | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Total | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 | 10 | 11 | 12 | 13 | 14 |
| I. Industrial Technology R&D Program | | | | | | | | | | | | | |
| Outcome Indicators | | | | | | | | | | | | | |
| 1. Number of partnerships with public and private stakeholders and international organizations | | 2 | 3 | 3 | 2 | 10 | 10 | 5 | 6 | 4 | 25 | +15 | <p>Q4 2022:</p> <p>1. Research and Development Center (RDC), Army Support Command, Philippine Army (R&D Collaboration)</p> <p>2. Swiss Pharmaceutical Corp. (R&D, S&T, and use of facilities)</p> <p>3. Cris Purificacion (Contract R&D- Product Improvement of Plant-Based Milk Derived from Pili Nuts)</p> <p>4. The Good Harvest Farm (Contract R&D - Provision of blue pea flowers for the development of natural colorants)</p> <p>Q3 2022:</p> <p>1. De La Salle University Manila (contract R&D)</p> <p>2. Zamcor Soap and Detergents Manufacturing (contract R&D)</p> <p>3. Korea Food Research Institute (R&D Collaboration)</p> <p>4. Philippine Metrology, Standards, Testing and Quality, Inc. (Technical Partnership)</p> <p>5. Greenstone Pharmaceutical H.K., Inc. (Contract R&D)</p> <p>6. DOST Philippine Nuclear Research Institute (Technical Assistance/Service)</p> <p>Q2 2022:</p> <p>1. Mapua University (Technical Collaboration:MATDEV)</p> <p>2. UERMMC (Technical Collaboration:MATDEV)</p> <p>3. Batangas State University (Technical Collaboration:MATDEV)</p> <p>4. Pasig LGU thru Schools Division Office (Technical Services: Support to the Laboratory Testing Needs in Research Capstone and Science Investigatory Project of Pasig City JHS and SHS Learners)</p> <p>5. Bureau of Soils and Management (Technical Services: Analysis of Tomato Fruits)</p> <p>Q1 2022:</p> <p>1. PCIERRD (Grant for R&D and Technical Services: Facilities and Laboratory Access Grant (FLAG))</p> <p>2. UP College of Home Economics-Dept. of Food Science and Nutrition (CHE-DFSN) (Technical Collaboration: Philippines Food Safety Risk Profiling Project (PRPP))</p> <p>3. Dr. Sandy Uy (Contract R&D: Design improvement thru AeroDynamic Simulation of Mask and Shield)</p> <p>4. Colegio de Muntinlupa (Technical Collaboration: Additive Manufacturing)</p> |

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| | | | | | | | | | | | | | 5. Adamson University (Technical Collaboration: Additive Manufacturing) 6. CENMACO, Inc. (Technical Assistance thru the project: Pilot-Scale Treatment of Fruit Waste for Biogas Production) 7. Consumer Care Products, Incorporated (Special Technical Services: Bioefficacy of Household-Aerosol Insecticides) 8. Aldawah Producers Farm Cooperative (Technical Assistance: Upgrading of Essential Oil Extraction Facility) 9.-10. Davao City LGU & DOST Region XI (DOST-GIA project "Upgrading the Capability of Existing Distribution Centers /Trading Posts in the Delivery of Fresh and Semi-Processed....."). |
| 2. Amount of revenue generated from partnerships | | 25 M | 25 M | 25 M | 25 M | 100 M | 26,497,533.5 | 144,928,047.3 | 41,307,441.8 | 303,571,526.37 | 516,304,548.98 | +416,304,548.98 | Amount of additional resources generated from partnership with DOST and its attached agencies and other government agencies for the conduct of assisted projects. |
| Output Indicators 1. Number of projects completed | | 3 | 3 | 0 | 14 | 20 | 5 | 4 | 1 | 20 | 30 | +10 | Q4 2022 completed project: 1.RDR-EBD-2022-01: Pilot Scale Treatment of Fruit Waste for Biogas Production using Trichoderma harzianum (formerly Pilot Scale Treatment of Fruit Waste for Biogas Production) 2.RDR-EBD-2022-02: Biofilm inhibitory activity of Talisay leaf extract against shrimp pathogen Vibrio sp. and its potential as feed supplement Phase 2: Immunomodulatory effects of Talisay-supplemented feed on Vibrio-challenged whiteleg shrimp (Penaeus vannamei) 3.RDR-EBD-2022-03: Microbial and Chemical Profile of Kombucha Tea made from Different Symbiotic Colonies of Bacteria and Yeasts (SCOBYs) in the Philippines Phase 1: Phenotypic and Genotypic Characterization of Microorganisms Responsible for Kombucha Fermentation 4.RDR-EBD-2022-04: Detection of Enteroviruses (EnV) in Wastewater System using Polymerase Chain Reaction (PCR) 5. RDR-CED-2022-01: Development of Copper-Based Nanomaterial as Additional Layer for Masks 6. RDR-CED-2022-02: Design of Energy Material from Biomass-derived Starting Material as Nanofilter for Fabrication of Hybrid Composite for Fuel Cell Application 7. RDR-MSD-2022-01: Porous Inorganic Nanocarriers In Drug Delivery System - Year 2 8. RDR-MSD-2022-02: 3D-Printed Carbon-based Flexible Piezoresistive Wearable Sensor for Smart Device Gesture to Speech Applications - Phase 2 9. RDR-MSD-2022-03: Development of an Antimicrobial Wound Dressing from Bacterial Cellulose-Nanoclay composite - Phase 2 10. RDR-MSD-2022-04: Cellulose Nanocrystals (CNC) derived from Ananas Comosus leaves for Industrial Applications and Biomedical Applications - Phase 1 11.RDR-MSD-2022-05: Development of Bioinspired Composite Membrane Separators for Advanced Rechargeable Lithium-ion Batteries - Phase 2: Evaluation and Testing of the Bioinspired Membrane Separators in Rechargeable Lithium-ion Batteries 12. RDR-PTD-2022-03: Development of Four Generic Cushion Designs Made from Corrugated Boards for Non-Food Product Protection 13. RDR-PTD-2022-05: Preliminary Study on PFAS (Per- and Poly-Fluoroalkyl Substances) in Paper-Based Packaging of Takeout and Delivery Food Products in Metro Manila During the COVID-19 Pandemic |

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| | | | | | | | | | | | | | 14. RDR-FPD-2021-02 Thermal Process Validation of Traditional and Ethnic Bottled Products- Acidified-Pasteurized Vegetables (Ubod, Ampalaya and Mixed Vegetables) 15. RDR-FPD-2022-02 Physicochemical characterization of Used Palm Olein and Coconut Oil from Vacuum Frying of Okra as Affected by the Frying Cycle 16. RDR-FPD-2022-04 Development and Assessment of Gender-Responsive Food Technologies Appropriate for Business Enterprises Development (Phase 3) GAD project 17. RDR-STD-2021-02 Development of Soil Quality Control Material for As, Cd, Hg, and Pb 18. RDR-STD-2022-01 Program: Enhancement of ITDI-STD Fuel Testing Services Phase 1: Validation of Test Methods for Self-heating, Proximate and Ultimate Analyses in Coconut Shell-based Charcoal Briquettes and Activated Carbon 19. RDR-STD-2022-02: Development of Internal Quality Control Material (IQCM) for Anions in Aqueous Solution from Laboratory Chemical Wastes 20. RDR-STD-2022-04 Validation of Test Method for the Determination of Arsenic in Fish Q3 2022 completed project: RDR-CED-2021-04: Sensory and Physicochemical Refinements in Some Personal Healthcare Products using Calamansi Essential Oils Q2 2022: 4 projects were completed: 1. RDR-FPD-2021-03: Development of Potential Natural Antimicrobial from Local Food Ingredients and Food Application 2. RDR-EBD-2020-05: Development of Air Biofilters for the Control of Ammonia 3. RDR-EBD-2020-04: Design, Modeling, and Simulation of an Improved In-vessel Composting System 4. RDR-EBD-2021-01: Development of ALBA Wastewater Treatment System for Swine Wastewater Q1 2022: 5 projects were completed: 1. RDR-PTD-2021-03: Quality and Safety Monitoring of Chilled Ready to Heat/Eat Foods Using Intelligent Packaging with Time Temperature Indicators 2. RDR-EBD-2021-03: Biofilm inhibitory activity of Talisay (Terminalia catappa L.) leaf extract against shrimp pathogen Vibrio sp. and its potential as feed supplement 3. RDR-EBD-2020-07: Upgrading of the Emergency Water Disinfection System 4. RDR-CED-2021-03: Development of Microcontroller & Minicomputer Applications for Selected Equipment units of the MMIC and a Bench-Scale Hydrothermal Carbonization Equipment of the CED Laboratory 5. RDR-STD-2021-01: Development and Validation of HPLC Methods for Food Samples |
| 2. Percentage of projects implemented within the approved timeframe | | 100% | 100% | 100% | 100% | 100% | 100% 49/49 | 100% 46/46 | 100% 46/46 | 100% 45/45 | 100% | 0% | |

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| 3. Percentage of projects completed which are published in peer-reviewed journals, presented in national and/or international conferences, or with IP filed or approved | | 5% | 5% | 5% | 5% | 5% | 4.96% (6/121) | 9.91% (12/121) | 15.70% (19/121) | 19.83% (24/121) | 19.83% (24/121) | +14.83% | * 24 out of 121 completed GAA projects from the last 5 years (2017-2021) were published/ presented/ filed for IP as of Q4 2022. |
| II. Industrial Technology Transfer Program | | | | | | | | | | | | | |
| Outcome Indicators 1. Percentage of clients that rate the technology transfer as satisfactory or better | | 90% | 90% | 90% | 90% | 90% | 100% (2/2) | 100% (3/3) | 100% (1/1) | 100% (1/1) | 100% (7/7) | +10% | *7 out of 7 clients rated technology transfer as satisfactory or better as of Q4 2022 |
| Output Indicators 1. Number of knowledge/technologies diffused | | 8 | 12 | 15 | 10 | 45 | 69 | 33 | 12 | 21 | 135 | +90 | <p>Q4 2022: 21 knowledge/technologies were diffused through different online platforms and media:</p> <ol style="list-style-type: none"> 1. Upgraded Emergency Disinfection System (UpEDS) 2. Gourmet Salts 3. Drum Dried Fruit Flakes 4. Packaging for Frozen Durian 5. Packaging for Pork Lechon 6. VF Gabi 7. VF Jackfruit 8. VF Banana 9. VF Tahong 10. VF Kamote 11. Improved Packaging for shelf life extension of Bukayo and Budin 12. Packaging of monay 13. Packaging Technology for Cut-Flowers 14. OL Trap 15. Spray Drying Technology 16. Smoked salts 17. Pineapple jam 18. Pineapple Juice 19. Pineapple Puree 20. Pineapple Chutney 21. Electric Plastic Densifier <p>Q3 2022: 12 knowledge/technologies were diffused through different online platforms and media:</p> <ol style="list-style-type: none"> 1. Freeze Drying 2. Jatropha Methyl Ester 3. Guyabano (Soursop) Puree 4. Pickled Jackfruit 5. Dehydrated Onion 6. Dried Bagoong 7. Ready-to-Heat Technology 8. Camote Flour 9. Squash Flour 10. Fabric Conditioner 11. Okra Flakes 12. Management of Dredge Material: Characterization, Treatment and Disposal (CharTed DreaM) |

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| | | | | | | | | | | | | | Q2 2022: 33 knowledge/technologies were diffused through different online platforms and media: 1. Analgesic Balm 2. Banana Chips 3. Biomass-fired steam kettle 4. Bukayo 5. Calamansi Jelly 6. Calamansi juice 7. Cassava Processing 8. Ceramic Water Filter 9. Citronella oil 10. Coco Jam 11. Coconut Flour 12. Coconut Macaroons 13. Coconut Water Vinegar |
| | | | | | | | | | | | | | 14. DOST Tablea 15. Emergency Disinfection System 16. Essential oil Extraction 17. Evaporating Machine 18. Fish Sauce 19. Guyabano Herbal Supplements 20. Hand Wash 21. Mango Juice 22. Meatless Burger Patty 23. Meatless Spring rolls 24. Mosquito Repellent Lotion 25. Pickled Papaya 26. Pineapple Vinegar 27. Portable Biogas Digester 28. RTD Rice Milk 29. RTE Beef-filled Suman 30. Slimming Cream 31. Smoked Fish Processing 32. VC-enriched Hand and Body Lotion and Cream 33. VF pineapple |
| | | | | | | | | | | | | | Q1 2022: 69 knowledge/technologies were diffused through different online platforms and media: 1. Abaca Fiber Composites 2. Back-up system using motor control for lighting application as sample electric load 3. Banana powder 4. Banana Puree 5. Biogas Digester 6. Bioreactor 7. Cacao Desheller 8. Cacao Grinder 9. Cacao Roaster 10. Calamansi Concentrate 11. Chitosan-based antioxidant film 12. Colorant from Monascus Purpureus 13. Dalandan Concentrate 14. Dietary Fiber from Calamansi 15. Dried Mango 16. Drum Carbonizer 17. Drum Dried Banana 18. Drum Dried Makapuno 19. Drum Dried Mango 20. Dual Drum Composter Technology 21. Elemi Gum Essential Oil 22. Emergency Food Reserve - Sagip Nutriflour 23. Emulsified Chicken Burger Patty 24. Emulsified Chicken Nuggets 25. Emulsified Chicken Sausage 26. Fish processing 27. Halal Lipbalm 28. Halal Lipstick |

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| | | | | | | | | | | | | | 29. Halal Shampoo 30. Halal Soap 31. Halal Toothpaste 32. Hand Sanitizer Making 33. Household Tumbling Composter 34. Isotonic Beverage 35. Mango Puree 36. Nanoclay 37. Nata de Coco 38. Natural Colorants 39. Natural Repellent Lotion 40. Nipa Sap Sweetener 41. RTD Calamansi 42. RTD Coconut Milk 43. RTD Coconut Mungbean 44. RTD Dalandan |
| | | | | | | | | | | | | | 45. RTD Tablea 46. RTE Cassava in Syrup 47. RTE Chicken Arroz Caldo 48. RTE Chicken Egg 49. RTE Smoked Fish Meal 50. RTE Sweet Potato 51. Salt Iodization Machine 52. Salt Spin-dryer 53. Salt Washer Machine 54. Salted Ube Snack Chips 55. Shelf-stable Suman 56. Spray Dried Egg 57. Styro-Plastic Densifier 58. Sweetened Ube Snack Chips 59. Thermal Processing 60. Ube Butterscotch 61. Ube Halaya 62. Ube Powder 63. VCO 64. VF Carrots 65. VF Okra 66. VF Squash 67. Vinegar Acetator Kit 68. Waste Analysis and Characterization Study (WACS) 69. Wine Fermentation Kit |
| 2. Number of technologies transferred/ commercialized through technology transfer agreement | | 1 | 1 | 2 | 1 | 5 | 4 | 1 | 2 | 3 | 10 | +5 | Q4 2022 1. RTE Chicken Egg (Batangas Egg Producer Cooperative (BEPCO)) 2 Vacuum Frying Technology (Sentrong Pamilihan ng Produktong Agrikultura sa Quezon Foundation Inc.) 3. Upgraded Disinfection System (Batangas State University) Q3 2022 1. Dual Drum Composter (LAMACO) 2 RTD Tablea (Argao Guilang Tablea) Q2 2022 1. EFR (Aklan State University, DOST R6, and Kapatiran para sa Progresong Panlipunan) Q1 2022: 1. RTE Arroz Caldo (Kai-Anya Foods International Inc.) 2 - 4. Cacao Roaster, Cacao Desheller/Winnower and |
| 3. Percentage of request for technology transfer that have been provided within the required time frame | | 95% | 95% | 95% | 95% | 95% | 100% (2/2) | 100% (3/3) | 100% (2/2) | 100% (3/3) | 100% (10/10) | +5% | *10 out of 10 requests for technology transfer were provided within the required time frame for 2022 |

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| III Industrial Technology Technical Services Program Outcome Indicators 1. Percentage of customers that rate the technical services as satisfactory or better | | 90% | 90% | 90% | 90% | 90% | 99.7% (1,020/1,023) | 99.92% (1,184/1,185) | 98.72% (1,083/1,097) | 99.44% (1,064/1,070) | 99.45% (4,351/4,375) | +9.45% | *4,351 out of 4,375 clients (who filled-out/returned the Customer Feedback Form) rated the technical services as satisfactory or better as of Q4 2022 |
| Output Indicators 1. Number of technical services rendered | | 5,000 | 5,000 | 5,000 | 5,000 | 20,000 | 8,568 | 15,418 | 13,615 | 9,799 | 47,400 | +27,400 | |
| 2. Percentage of request for technical services that have been provided within the required time frame | | 90% | 90% | 90% | 90% | 90% | 100% (8,568/8,568) | 99.98% (15,415/15,418) | 100% (1,628/1,628) | 100% (9,799/9,799) | 99.99% (35,410/35,413) | +9.99% | *35,410 out of 35,413 of technical services were provided within the required timeframe |
| 3. Number of clients benefitting from technical services | | 500 | 1,000 | 1,000 | 500 | 3,000 | 1,632 | 1,112 | 2,931 | 1,378 | 7,053 | +4,053 | |

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