



**PHILIPPINE NUCLEAR RESEARCH INSTITUTE (PNRI)**

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**Nuclear Applications in Food and Agriculture**

- Crop Improvement Through Mutation Breeding
  - Composition or Quality Crop Breeding in Rice: Improvement of Grain Quality In Rice (*Oryza Sativa*)
  - Drought Tolerance of Soybean (*Glycine max L .*) in the Philippines
  - Enhancing Agricultural Productivity in Mindanao Through Radiation Technology : Component I -Fruit
  - Induction and Evaluation of Beneficial Mutations in Asexually Propagated Crops: I- Pineapple
  - Mutation Breeding of Priority Agricultural Crops: Component II - Ornamentals
  - Varietal Improvement of Selected Ornamental Crops (Spathoglottis Orchids, Foliage-type Anthurium)
  - Improvement of Crop Quality and Stress Tolerance for Sustainable Crop Production Using Mutation Breeding
  - Development of Radiation Modified Natural Polymers as Plant Growth Promoter
  - Quality Evaluation of Philippine Super Mangoes Irradiated at Maximum Tolerable Dose ( Funded by DAAP)
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- Soil Quality Improvement
  - Assessment of Soil Erosion Using Fall-Out Radionuclides In Selected Agriculture Watersheds ( DOST-GEI)
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- Pest Control (Sterile Insect Technique)
  - Improvement of Mass Rearing Methods for Oriental Fruit Fly, *Bactrocera philippinensis* ( Funded by DAAP)
  - Improvement of Sterile Male Performance of Oriental Fruit Fly, *Bactrocera philippinensis*, for SIT Program
  - Establishment of Radiation Dose for Quarantine Treatment of Mango Pulp Weevil, *Sternonchetus fraxinipes*
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- Improvement of Animal Production
  - Integrated Approach to Improve Cattle Production Using Indigenous Resources and Conserving the Environment

### **Human Health and Medicine**

- Clinical Trials of the PVP-Chitosan Hydrogels for Vesicoureteral Reflux (VUR)
- Semi-Commercial Production of PVP-Carrageenan Hydrogel for Burn/Wound Dressing and Bedsores
- Comparative Analysis of Locally-Manufactured and Imported Cigarettes for Polonium-210 Concentration
- Efficacy of Gamma Radiation for the Sterilization of American Foul Brood (AFB) infected Materials
- Development of Radiation-Processed Honey Dressing for Health Care Management

### **Nuclear Techniques in Industry**

- Radiotracer and Sealed Sources Application in Industry
- Survey for Nuclear and Other Industrial Minerals: Characterization of the Natural Radioelement Signatures

### **Environmental Protection and Management**

- Urban Waste Management
- Management of CTBTO Stations in the Philippines (Comprehensive Nuclear Test Ban Treaty Organization)
- Radiological Assessment for Release of TENORM into the Environment
- Marine Radioactivity Monitoring: Dose Assessment of Exposure to Population Due to Consumption of Seafood
- Hydrogeochemical Process Studies/ Environmental Surveillance : Radon Monitoring of the Valley of the Philippines
- Application of Nuclear Techniques in Harmful Algal Bloom (HAB) Studies: Transfer of Receptor Binding Assays
- Application of Nuclear Techniques in Harmful Algal Bloom (HAB) Studies: Historical Profile of Harmful Algal Blooms
- Particulate Matter Monitoring by Nuclear and Related Analytical Techniques and Source Apportionment

### **Isotope and Nuclear Techniques Application**

- Assessment of Trends in Freshwater Quality Using Environmental Isotopes and Chemical Techniques
- Isotope Applications in Delineating Recharge of Bacolod City Groundwater System (DOST Grants)
- Isotope Applications in Verifying Recharge Processes in Bulacan Province Groundwater System (DOST Grants)
- High Technology Materials: Development and Applications of X-Ray Spectroscopic Techniques in

- Development of Thermoluminescent Dosimeters
- Basic Research and Other Applications in Radiation Processing of Natural Polymers for Health, Ag
- Development and Application of Nuclear-Based and Related Analytical Techniques

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