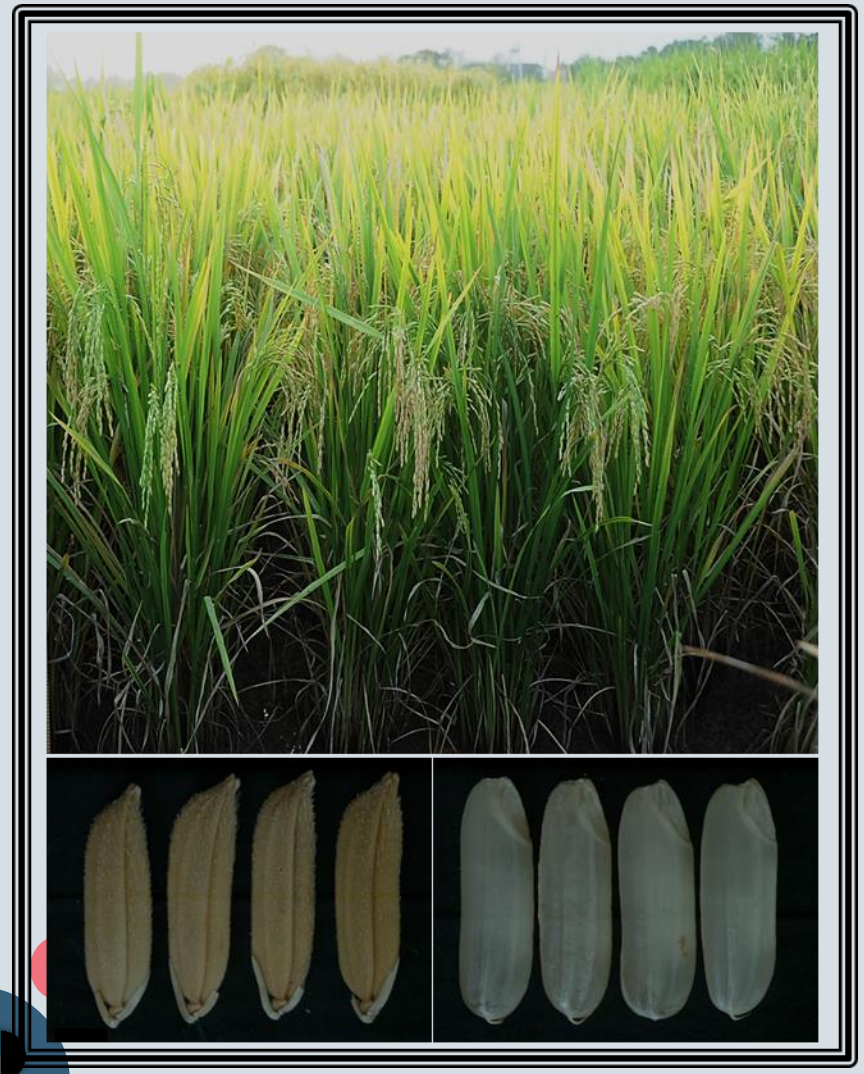
21st FNCA Forum for Nuclear Cooperation in Asia

PHILIPPINES

COUNTRY REPORT

NSIC 2019 Rc572 (Sahod Ulan 28)



Agronomic Characteristics

Ave. Yield (t-ha^{-1})	**2.8**
Max. Yield (t-ha^{-1})	**4.5**
Maturity (DAS)	**109**
Height (cm)	**99**
Number of tillers	**74**

Ecosystem: Rainfed-drought
Year Released: 2019
Breeding Institution: PhilRice

Other characteristics:

Drought Tolerant

Disease resistance: blast, tungro
Amylose content: 20.9% (intermediate)
%Head rice recovery: 53.4% (Grade 1)
Grain size and shape: Long and intermediate

- Palliative Radiation Therapy Clinical Trials; Online 2020 Workshop via Zoom November 27, 2020.
- Promotion of multidisciplinary team approach in the management of malignancies specifically on increasing awareness on the roles and indications of radiotherapy/radiation oncology.
- Increase in Image Guided Brachytherapy (IGBT) procedures specifically in cervical cancer in the Philippines.

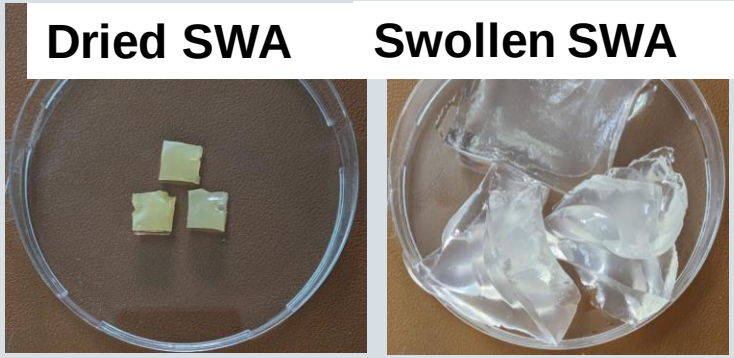
ReforeStable Carbon-Plus:

Stable Isotopes-Based Evaluation of the Climate Change Mitigation Potential, Recovery Status, and Resilience of Reforested Soils Under the National Greening Program

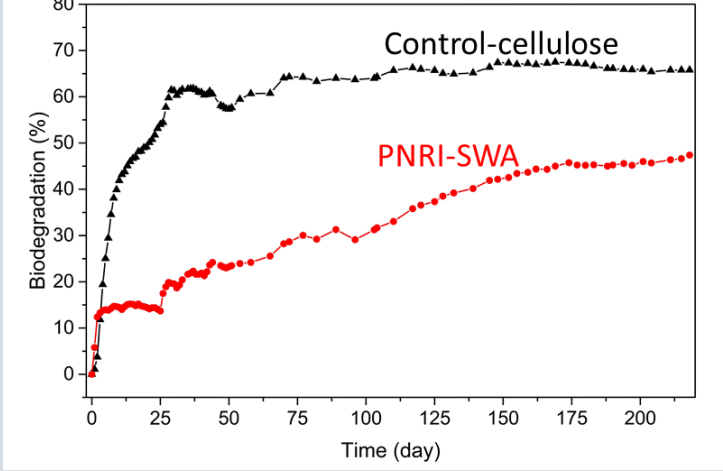
Climate Change Using Nuclear and Isotopic Techniques

5-year program “Nuclear Medicine Research, Development & Innovation Center” with a 16.5 MeV radioisotope source

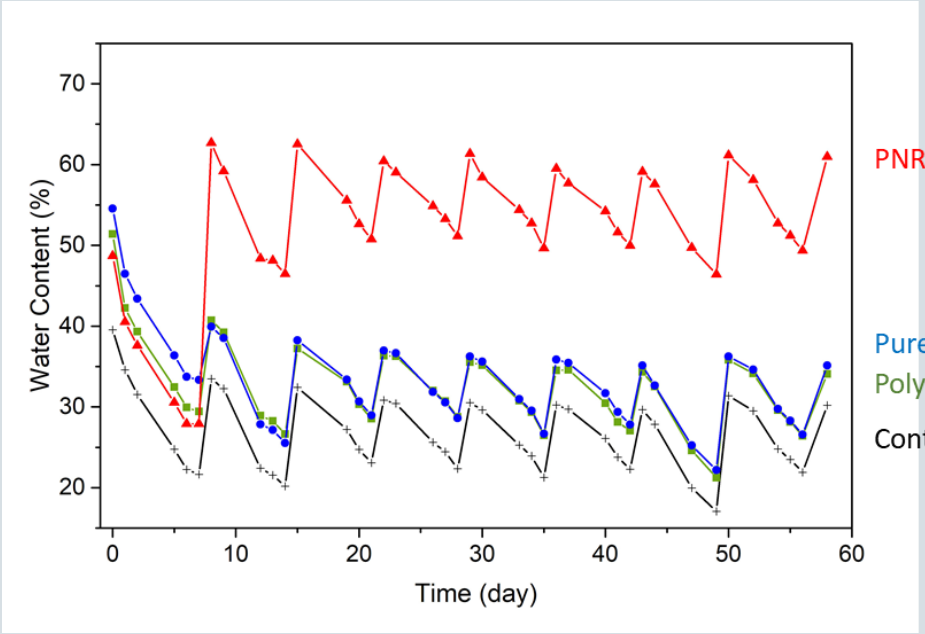
(Non-F-18 FDG Tracers, such as, 18-F, 11-C, 15-O, 13-N; and solid targets for Cu-64, Zr-89; and liquid target for Ga-68 derivatives and F-18 FDG)



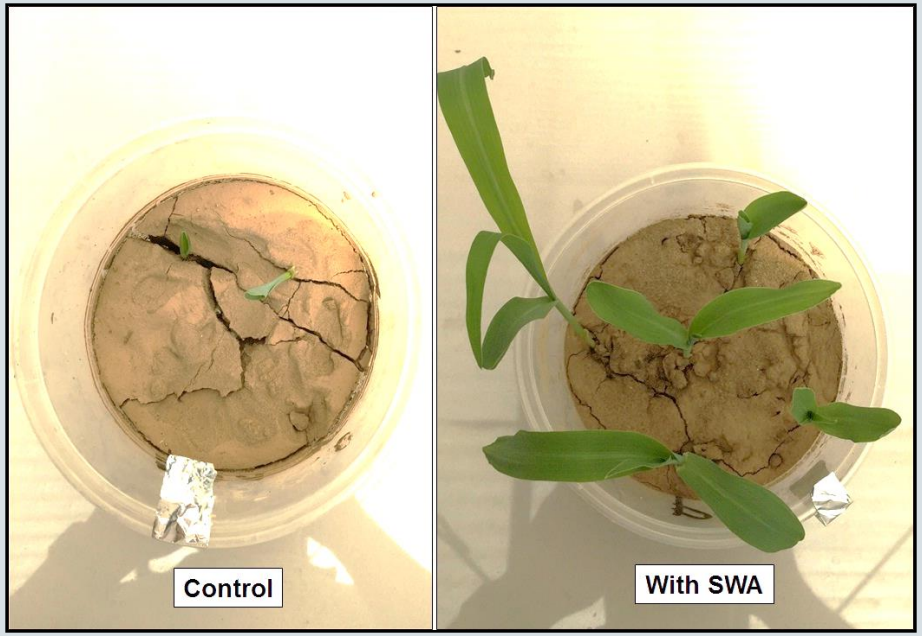
Absorbs water up to 150x its own weight



50% Biodegradability vs 1% of pure polyacrylate SWA (commercial)



Higher soil water retention property sustained after 59 days with 6 exhaustive rehydration cycles compare to commercially available SWA.



Supports seedling growth under drought stress condition. (9 days w/o rehydration)

Update on Policies and Legislation

- **Nuclear Policy**
  - Executive Order 116 on Adoption of National Position on Nuclear Energy (July 2020), includes position for independent regulatory body & policy for radioactive waste management

- **Update on policies**
  - Substitute House Bill on "PROVIDING FOR A COMPREHENSIVE HAZARDOUS AND RADIOACTIVE WASTES MANAGEMENT AND PROVIDING PENALTIES FOR VIOLATIONS THEREOF" - to develop comprehensive waste management programs including RW, re-filed at Congress now at TWG level

- **Update on regulations**
  - NEW - CPR PART 30 SAFETY REQUIREMENTS FOR RESEARCH REACTORS
  - DRAFT- CPR PART 28 - LICENSING REQUIREMENTS FOR PREDISPOSAL MANAGEMENT OF RADIOACTIVE WASTE FACILITIES AND ACTIVITIES – now for stakeholder consultation

Safeguards

- Virtual inspections of facilities under safeguards:

  Research Reactor and Location Outside Facilities to update Nuclear Material Accounting Reports to be submitted to IAEA through the Secure Communication.

- Establishing Nuclear Safeguards Laboratory of the Nuclear Safeguards and Security Section (NSSS)

Nuclear Security

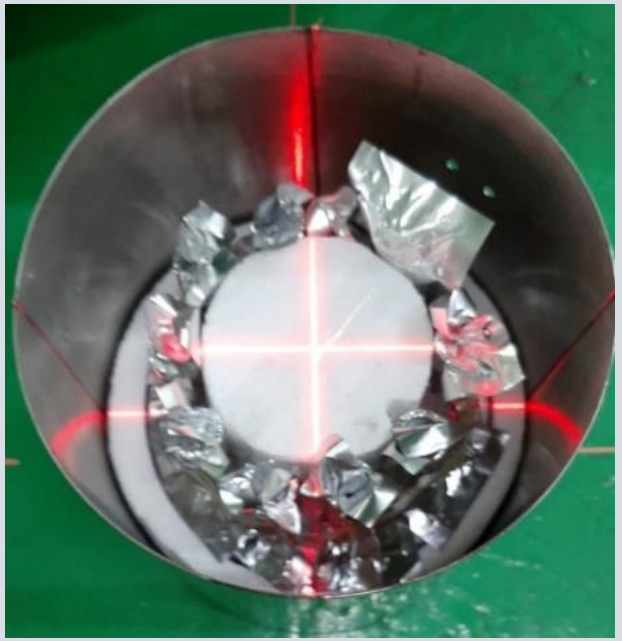
- Establishing of Nuclear Security Training Room for Capacity-building of Stakeholders involved in nuclear security regime
  * hands-on use radiation detection equipment for nuclear and other radioactive materials for border protection

Irradiation of 3D-printed Venturi Valves

- Irradiation of Venturi Valves using Ob-servo Sanguis self-shielded gamma irradiator of DOST-PNRI:
  - to determine material compatibility to radiation (DOST-ITDI)
  - to establish the sterilization dose (DOST-PNRI)

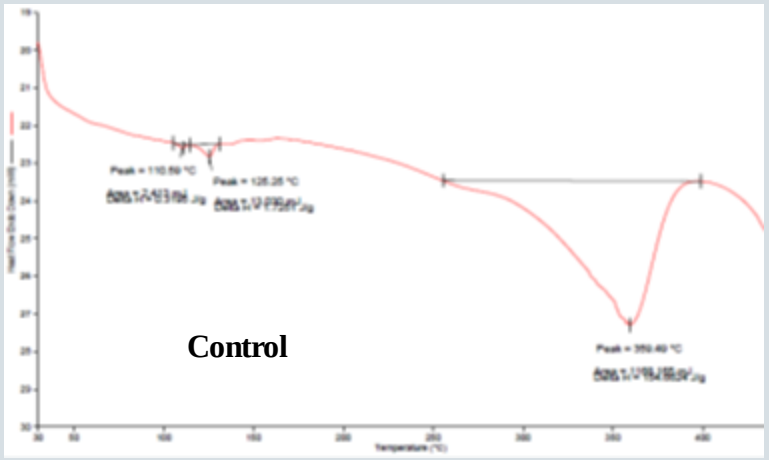
Operator loading the samples in the Ob-Servo Sanguis Gamma Irradiator

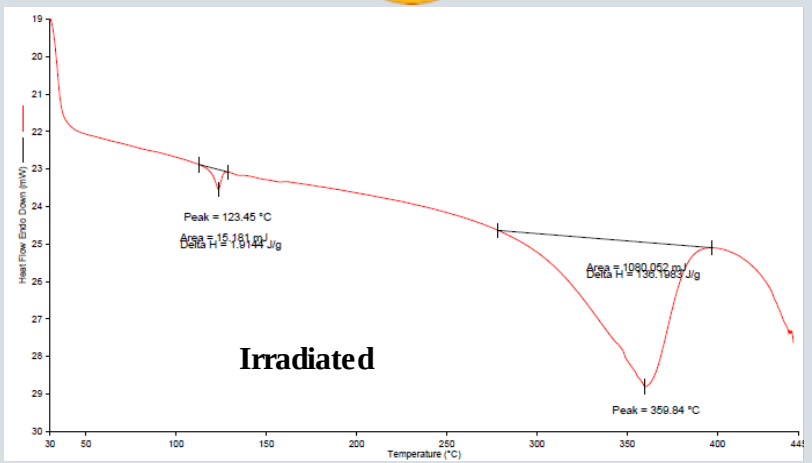
Venturi Valves



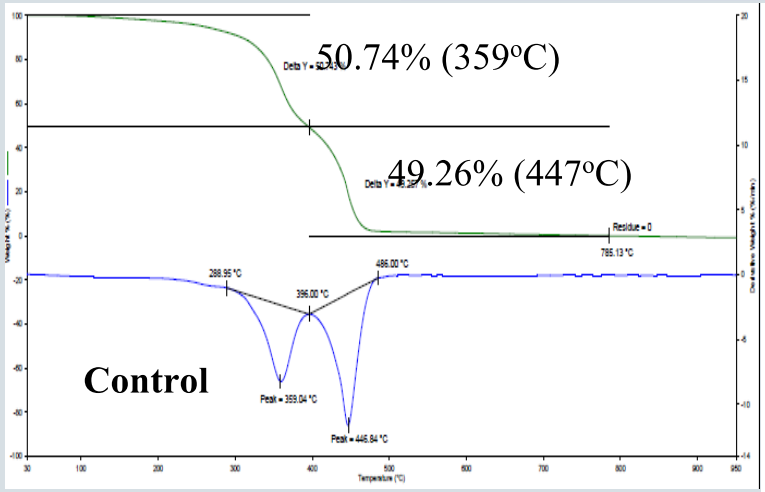
Venturi valve samples (packed in aluminum foil) inside the sample chamber - top view

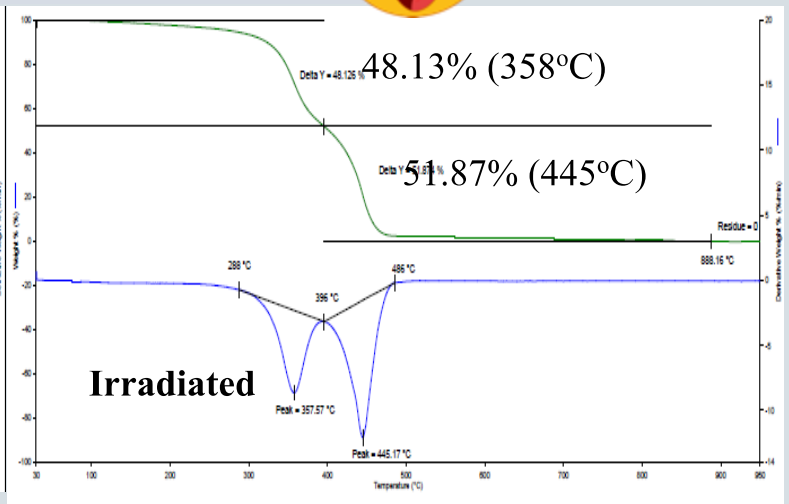
DSC Curves





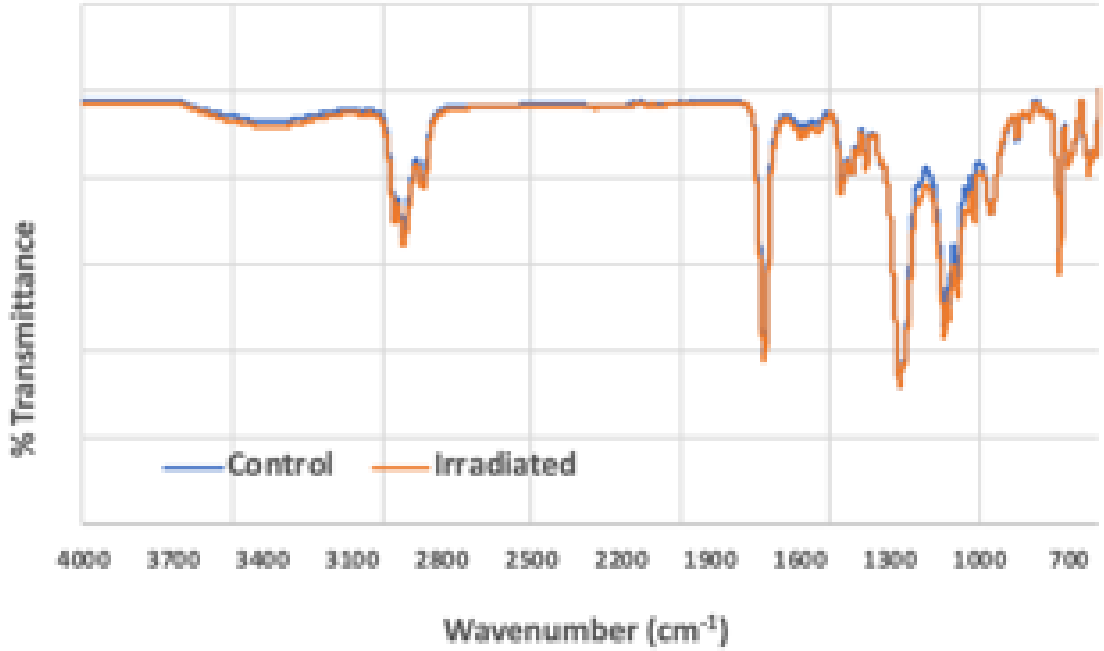
TG-DTG Curves



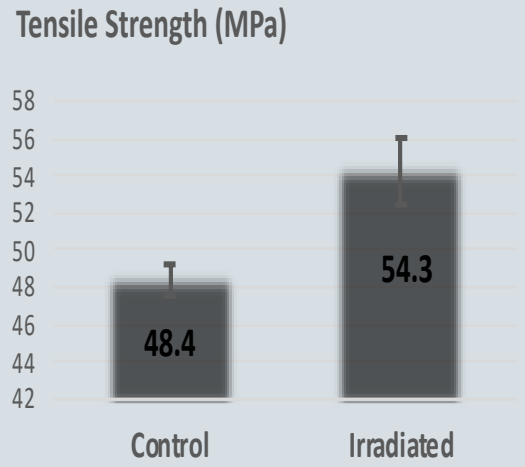


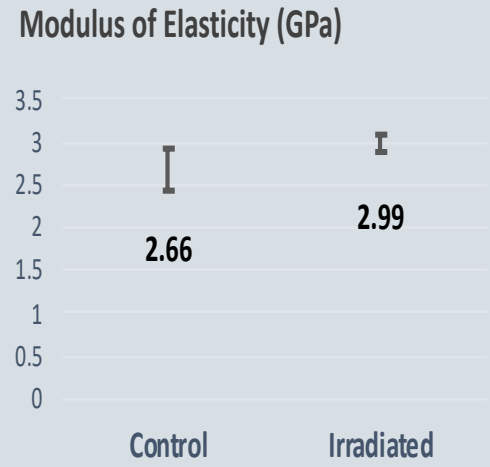
COVID-19 Research

FTIR



Tensile Strength & Modulus of Elasticity





The irradiated samples has higher results (due to the induced curing effect caused by irradiation).

Venturi valve is radiation compatible up to a dose of 50 kGy


Thank You!