



Atoms at the forefront of national efforts for securing

Health, Food, Agri & Water

It gives me immense pleasure to write this foreword for the thematic issue of BARC Newsletter focused on multi-disciplinary R&D efforts in the vitally important areas of Water, Food, Agriculture, and Health. Understanding the significance of these key areas in our day-to-day lives and their prominence in the overall well-being of the nation, the theme of this year's edition of National Technology Day celebration in BARC was centered on them.

This carefully curated bulletin of BARC Newsletter showcases some of the important contributions of BARC to healthcare, food security and water management through unlocking the applications of radiation technologies.

In the area of healthcare, advanced nuclear technologies are being leveraged for the diagnosis and therapy of major diseases, including cancer. With the advent of cutting-edge technologies for focused targeting of radiation beam and radioisotopes to the localized disease site, nuclear technologies have now become the most indispensable and formidable tools not only for diagnosis and treatment of cancer but other life-threatening diseases (cardiovascular pathogenesis, Alzheimer etc) as well. In this regard, BARC continues to provide R&D support for production of a variety of radiopharmaceuticals for supply to hospitals and nuclear medicine centers across the country, rendering the treatment in an affordable manner.

In agriculture, an effective blend of radiation induced mutation and recombination breeding at BARC has resulted in the release of several crop varieties, which have largely benefited the farmers, nationwide. In addition, Trombay mutant lines have also extensively been used in several national breeding programs for crop improvement. In the area of food, cutting edge research programs in radiation processing ensure food security, safety and trade promotion. The SOP developed for sea-route shipment of radiation processed mangoes from India to USA has led to significant increase in the revenue obtained from export, resulting in immediate benefits to the growers.

BARC also developed several state-of-the-art technologies in treating waste water, desalination of sea water, isotopic analysis of ground water etc.

I take this opportunity to compliment the Associate Editors (Dr B. S. Patro and Dr. Anand D. Ballal) and contributing authors for their efforts in bringing out this exciting collection of articles in the field of healthcare, food, agriculture, and water. I am sure the articles will be an invaluable asset to all the researchers, especially young minds to explore the exciting fields of research in nuclear technology for societal benefits.

Dr. P. A. Hassan

Associate Director
Bio-Science Group

Bhabha Atomic Research Centre (BARC)