
Editorial: A new era in postharvest technology

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It is projected that the world's population will double by the year 2050. This situation makes food security and sustainable economic development important challenges for humanity in the new millennium. On the other hand, as average life expectancy continues to improve, particularly in developed countries, consumer demand for good quality, safe, nutritional and fresh food products also increases. At current output rates, food production will have to be doubled or preferably tripled during the next half century in order to meet the needs of over ten billion people, most of whom will reside in the developing world. The scale of the challenge facing humanity is significantly exacerbated by the declining availability of water, increasing marginalisation of available agricultural soils, and growing public demand for greater environmental stewardship.

Postharvest research has evolved during the last half century from the fusion of biology and engineering. Improvements in our understanding of the physiology of fresh food materials and their reactions to mechanical stress, controlled environments and changes in atmospheric gas composition, have underpinned the development of innovative technologies in product handling and distribution, control of ripening and deterioration, disorders, pests and diseases. Altogether, these advances in postharvest technology and physiology have exerted unprecedented changes in the way we harvest, handle, store, and process food materials. Many would argue further that developments in postharvest technology have impacted on what, where, when and how we eat, partly by ensuring year-round supply of a wide range of tropical, subtropical and temperate food in both fresh and processed forms.

Earlier attention on postharvest technology in food and agribusiness was mostly devoted to the reduction of high incidence of losses, particularly in developing countries, where food insecurity remains an obstacle to economic development. As part of the efforts to understand the magnitude of the problem, the US National Academy of Sciences published a seminal report on 'Postharvest food losses in developing countries' (NAS, 1978). Similarly, international, regional and national conferences were held around the world to discuss programmes of action on the problem of postharvest losses (Zaehring and Early, 1976). During the same period, United Nations agencies such as the Food and Agriculture Organization (FAO) and the UN Environment Programme launched multi-million dollar programmes on prevention of food losses (Anon, 1981; Bourne, 1983; 1977). In the ensuing years, postharvest research and graduate education

flourished in many universities and research organisations. Many universities and some countries like the Philippines and Vietnam set up specialised centres of excellence in postharvest research and extension. At the same time, publication outputs from postharvest researchers rose astronomically but were scattered in diverse journals in different disciplines such as biology, agricultural science, horticultural science, viticulture, fisheries and marine science, marketing and distribution, economics, and branches of engineering such as agricultural, chemical and mechanical. It was not until July 1991 that the first refereed scientific journal dedicated to postharvest research was established (*Postharvest Biology and Technology*, Elsevier).

During the past couple of decades, there has been a growing paradigm shift in the developmental mission of postharvest research, from food loss prevention to linking farmers/fisheries to markets, through value-addition and improved quality management. Despite the prevalence of food insecurity and malnutrition in some parts of the developing world, it is now well known that consumer emphasis has generally shifted from *quantity* to *quality*. Similar to its response in setting up the postharvest food loss prevention programmes in the 1970s to 1980s, the FAO has recently launched a new Global Initiative on Postharvest (GIPh) in collaboration with the Global Forum on Agricultural Research (GFAR) (Rolle and Mazaud, 2005). Furthermore, with increasing realisation of the link between food and human health amid rising income levels, more consumers are expressing their willingness to pay a premium for quality and convenience. This has assured a future demand for innovations in postharvest technology that add value at all stages in the food supply chain.

The mission of *International Journal of Postharvest Technology and Innovation (IJPTI)* is to fulfil a niche in the timely dissemination of postharvest research literature that demonstrate the potential link between technology application and the creation or addition of value to food and industrial biological materials. *IJPTI* will provide a scientific forum for rapid publication of original research and reviews, which have practical implications for industry practice, and have practical implication for industry practice as well as future postharvest research. Special attention will be given to articles that present innovative approaches to current and emerging issues in postharvest handling, food quality, safety and traceability. In addition to regular articles, there will be invited contributions from the world's leading researchers and educators on 'Postharvest Perspectives'. Periodically, we will publish invited articles or case studies on 'Industry Practice' by practitioners and experts working on development project in postharvest technology.

The majority of articles included in this maiden issue of *IJPTI* have been written by selected keynote speakers at the *International Conference on Postharvest Technology and Quality Management* held at Sultan Qaboos University, Sultanate of Oman, from 30 January to 2 February 2005. The articles, written by authorities in their respective fields and carefully chosen after peer review, cover a range of technological innovations currently applied or being developed in the postharvest sector. It is hoped that this fine collection of research papers will prove to be most valuable to other researchers, educators, postgraduate students, as well as industry practitioners who are interested in current and future developments in the area.

We are very delighted to launch this inaugural issue of *IJPTI* and we welcome your comments and suggestion to ensure that the journal achieves its mission. We also invite you and your colleagues to submit your articles for consideration in *IJPTI*.

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