

Editorialⁱ

Seeds That Changed the World



After over half a century of service in Universiti Putra Malaysia, I feel honoured to be invited to write the Editorial of *Pertanika – Journal of Tropical Agricultural Science*, particularly when I was one of the foundation members of the Editorial Board in 1978-82 and subsequently the chief Editor from 1983 to 1996. There are many things for me to reminisce, while there are observations and experiences to share from the past era. Looking back in time, I remember the seeds of change have already been sown as far back as 1961. Before the birth of *Pertanika*, research publications were in the form of an annual college magazine, with contributions from students and staff members. In 1977, the

University of Agriculture felt the need for its own University Press. Thus in 1978, the first research journal *Pertanika* was launched. Within two decades, the university's seeds of change have multiplied and grown beyond recognition, with increases in the number of faculties, courses, students and staff resulted in many changes in *Pertanika*. *Pertanika* was the *Journal of Tropical Agricultural Science (JTAS)*, and in 1992, it was split into three journals to meet the needs of the university.

Now, there are three journals to include; *Journal of Science and Technology (JST)* and the *Journal of Social Sciences and Humanities (JSSH)*. I am glad now that the scope of the original has changed and greatly enlarged in specific fields for the three journals. Each journal has its own national and international editorial board to ensure high standards and to meet an international ISI journal. *Pertanika* publishes papers from all over the world following the double blind peer-reviewed system and also the code of ethics by the contributors, editors and reviewers. The four issues of each journal are to be published and delivered on time as scheduled, which is a pre-requisite of a good and reputable journal. In this digital age with great advances in information technology, publications of all types and forms have raised the public awareness of all subjects which have significantly changed the world over the 20th Century. I dream and hope that the seeds of knowledge in *Pertanika* will germinate and help to change the world for the better in the future. Even ideas and speeches have done the same – changing the world.

Similarly, following Nature's footsteps of the great diversity of seeds – the source of life and food for mankind and animals have indeed changed the world. In this editorial, I attempt to show and illustrate two tropical plant species which have indeed been responsible in changing the world for the survival and advancement of mankind. They are rubber *Hevea brasiliensis* and oil palm *Elaeis guineensis* seeds.

The planet earth has been orbiting round the sun for millions of years with precision and regularity. However, the world that we live in on earth has been changing slowly over the years until the 19th century. By the 20th century and the beginning of the new Millennium, changes take place very rapidly day by day, especially with the onset of the digital revolution. Man with his new ideas has changed the world and even his speeches have done the same. Similarly, the question arises, can seeds change the world? If seeds and plants can speak, they will definitely say yes, with the help of mankind's ideas, innovation invention and discovery.

Seeds, as defined by various people, are given as follows: seed is the source of life and it is described as the capsule of life. In his poem, Gailbraith attributed that the seed is the awesome vessel of power. Man has realized the power and the importance of seeds paid their tribute by the United Nations in designating 1961 as the World Seed Year. The importance of seeds is spelt out clearly in four words, "All food is seed". Man and animals are dependent on them for their survival all over the world. In the Green Revolution, mankind was saved from famine by the hybrid wheat and corn. There is a saying 'He who controls the seeds controls the world'. Therefore, it is not surprising they can bring about changes the world over.

One of the most outstanding and striking example is the species *Hevea brasiliensis* or rubber. It is one species of plant which within a century greatly changed the lifestyle of the people in the 20th Century. Now, let us ask ourselves, what life will be like without rubber, surely it would not be as pleasant and comfortable as it is today. The humble beginning of the rubber bouncing balls, erasers, rubber bands and waterproof boots, shoes and gloves have changed the lifestyle of mankind. Today, rubber bearings are used as anti-earthquake structures for skyscrapers like the recently launched tower in Tokyo called the Sky Tree. The invention of rubber tyres has changed our mode of travel with the bicycle, motor vehicles including planes in aviation. Meanwhile, the uses of rubber in health science, as gloves and condoms, play very significant roles in population control. If not for the latter, the world's population would exceed much above the seven billion mark.

The other plant species, oil palm - *Elaeis guineensis*, is one with a shorter history that has also changed the world for the past century. Oil palm is the most versatile plant in which every part of the plant can be utilized for food, fibre, health supplements and

many other industrial uses. It is another crop that everybody in the world is most likely to be in contact with, i.e. palm oil. Unlike rubber, the most valuable parts of the plant are from the fruits and seeds kernel which produce the oil. Today, oil palm is at the top of the world's list of vegetable oil producers. There are more than 10 million farmers in plantations of the equatorial belt of the world, supplying oil that feeds the billions of people, especially in developing nations to ensure food security. Increased demand is anticipated according to FAO; oil production is in a region of 184 million tonnes for the hungry world in developing countries which are heavily reliant on palm oil as a source of nutrition. In fact, palm oil is the most consumed edible oil in the world. Over a hundred products are derived from oil palm, for food, non-food, fertilizers and industrial use.

Rubber and oil palm are not natives to Malaysia; they originated from Amazon in South America and western-central Africa, respectively. They became plantation crops in the early 20th Century, and then became the world's largest producers, thus contributing significantly to the nation's economy. The products from them have changed the lifestyle and standard of living of the people. They have also led to new and unexpected applications in modern living and a host of new industries.

Further in the olden days after rubber had been domesticated, the white latex from the bark is respected as the white blood of the Gods. Lately, oil palm in Malaysia is known as the golden crop producing liquid gold. These two most important crops in Malaysia still have great potentials in the future. One day, we may find and discover new germplasm in the forests for breeding new clones. Alternatively, plant breeders and biotechnologists may design an ideal plant for their needs. In future, more species of plants may be discovered in the forests or some being genetically modified, they will further change the world for the betterment of mankind.

CARE with the SEEDS, JOY with the HARVEST.

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June, 2012

Professor H. F. Chin has served Universiti Putra Malaysia for over half a century. He obtained his four degrees in Agricultural Science from the University of Melbourne, Australia; B. Agric. Sc. (1961), M. Agric. Sc. (1971), Ph.D (1974), D. Agric. Sc. (1994) Honorary. Prof. Chin's main interest is in seed science and technology and his field of research is on seed storage, particularly the recalcitrant species. He has published three books on seeds, namely, *"Agricultural and Horticultural Seeds of Malaysia"*, *"Seed Technology in the Tropics"* and *"Recalcitrant Crop Seeds."* Besides his research work, he also has interests in gardening and photography. With these interests and skills, he has also written and edited ten other books, including *"Malaysian Flowers in Colour"*, *"Malaysian Fruits in Colour"*, *"Malaysian Trees in Colour"*, *"Hibiscus – Queen of Tropical Flowers"*, and *"Malaysian Vegetables in Colour."*

Prof. Chin has been active nationally and internationally, as chairman of a number of National Committees. Internationally, he was the Chairman of Technical Committee on Seed Storage of International Seed Testing Association (ISTA) and member of the Advisory Committee on Seed Storage of the International Board of Plant Genetic Resources (IBPGR). He also served as a member of the board of Trustee of IBPGR for 6 years. In 2011, Prof Chin was appointed as a foundation member of the National Seed Council (NSC) by the Minister of Agriculture and Agro-Based Industry, Malaysia.

For his long service and contributions, he was appointed Professor Emeritus in 1995 at Universiti Putra Malaysia (UPM) and Foundation Fellow of the Academy of Sciences Malaysia FASc. (1995) by the Minister of Science, Technology and Environment. He was also awarded an Honorary degree of Doctor of Agricultural Science by the University of Melbourne and appointed the Honorary Research Fellow of the International Plant Genetic Resources Institute (IPGRI), which is now Bioversity International. In June 1990, he was awarded the Johan Setia Mahkota (J.S.M) Order of Chivalry title on the occasion of the birthday of His Majesty, the Yang di-Pertuan Agong (King) of Malaysia.

Prof. Chin was the Foundation member of the Editorial Board of *Pertanika* (1978-1982) who was then appointed as its Chief Editor (1983-1996).

ⁱ DISCLAIMER

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