CHARTING THE IMPACT OF THE WORLD FOOD PRIZE WINNERS

The World Food Prize is an annual award that recognises the work of scientists in improving the quality, quantity and access to nutritious food.

Stretching back to the first award in 1987, the work of the winners has improved economic outcomes for farmers in developing countries, boosted access to vital techniques and technologies, and saved countless lives.

The areas of expertise of World Food Prize Laureates are varied, but here we focus on winners who have worked to develop and provide agricultural innovations to farmers. From new and improved varieties of staple crops to innovative methods of crop protection, we chart the impacts of these scientific trailblazers.

1987

Dr Mankombu S. Swaminathan is widely recognized as the architect of India’s “Green Revolution” that dramatically improved agricultural yields through the introduction of genetically improved grain varieties.

Dr Swaminathan worked directly with Dr Norman Borlaug to generate a 100% increase in wheat production within four years.

Dr Swaminathan helped fight food insecurity by introducing a combination of high-yielding rice and wheat varieties, fertilizers, and more efficient farming techniques.

He later worked with Indian Prime Minister Indira Gandhi to establish agricultural policies and programs that would maintain long-term self-sufficiency across the country.

1992

Dr Edward F. Knipling and Dr Raymond C. Bushland developed the sterile insect technique (SIT) method of pest control that has helped plant and animal agriculture for more than 50 years.

Thanks to this innovative technique, researchers were able to eradicate screwworms from the Caribbean island of Curacao in just 7 weeks.

This pest has now been eradicated throughout much of North and Central America and the technique has been used to fight other insect infestations.

SIT provided a benefit in protecting the agricultural products that feed the world’s human population.
1997

Dr Ray F. Smith and Dr Perry Adkisson developed the concept of Integrated Pest Management (IPM).

Working both independently and in tandem, they developed a combination of cultural, biological and chemical measures to manage diseases, insects, weeds and other crop pests.

They developed IPM programs worldwide, including developing countries, where farmers often lacked the training or means to effectively or safely protect their harvests from new pests.

The United Nations estimates that over 1 million farmers in more than 60,000 villages around the world have applied IPM methods and saved billions of dollars while seeing increased production in some cases.

2000

Dr Evangelina Villegas and Dr Surinder K. Vasal developed high-quality protein maize (QPM).

Quality protein maize (QPM) contains nearly twice as much lysine and tryptophan, amino acids that are essential for humans.

The biofortification of this maize variety has not only led to increased nutritional value of the plant, but improved children’s health outcomes in countries where it is available.

The impact of their research in increasing protein in diets in developing countries has been called “one of the most important contributions to food security in human history.” by CIMMYT Director General Timothy Reeves.

2013

Dr Mary-Dell Chilton, Dr Robert Fraley, and Dr Marc Van Montagu pioneered the field of modern plant biotechnology, supporting improved sustainability and global food security.

These three scientists each independently pioneered research on the successful transfer of bacterial genes into plants.

They helped create the world’s first biotech crops, resulting in improved yields, resistance to insects and diseases, and tolerance to herbicides and extreme climatic conditions.

In 2018 alone, the sustainability, environmental, and economic benefits of biotech crops helped uplift the lives of 17 million farmers and their families, totalling more than 65 million people.