Research yields world food potential

August 1 2011

Wheat field. Photo by Kevin Lallier http://www.flickr.com/photos/klallier/

The Australian National University and Bayer CropScience have signed a research agreement to develop new technology with the potential to produce higher yielding food crops.

The agreement allows for the new technology to be provided at no extra cost to subsistence farmers in lesser developed countries, which becomes critically important as the world's population continues to expand.

Using pioneering research techniques, a team at ANU has successfully re-engineered the Rubisco enzyme, which uses carbon dioxide from the air, and converts the energy from sunlight into the sugars that are the building blocks of life, by the process of photosynthesis.

Professor Jill Gready from the John Curtin School of Medical Research,

who leads the research team at ANU, said the agreement recognised the far-reaching potential of technology which produces improved mutants of the enzyme.

“This technology has the potential to address important problems globally by increasing the rate of capture of carbon dioxide from the atmosphere,” she said.

“ANU and Bayer CropScience have agreed to work together to accelerate the science underlying the technology and allow development of the technology ready for applications into plants more quickly and efficiently.

“As a result of this co-operative agreement, the technology will be available for public-good purposes such as for subsistence farmers in developing countries.”

Professor Gready said ANU and Bayer had a common interest in improving food security and reducing poverty in lesser developed countries.

“The technology will be made available through links with international agriculture aid organisations, while still allowing the technology to be used for the development of crops for sale to commercial farmers in wealthier countries,” she said.

“Many applications of this newly developed technology are envisaged, including the production of higher-yielding food crops that use water and fertilizer more efficiently.

“The technology also has potential applications in the improvement of plants for bioenergy production, to improve trees or other plants for carbon sequestration, and in the improvement of agricultural soils and

land remediation.”

Provided by Australian National University