Australian Plant Phenomics Facility

CSIRO

High Resolution Plant Phenomics Centre

Student Education –

Mexican student chooses Canberra research groups to enhance her education

Fifteen year old Mexican high school student Viridiana Silva Pérez did not expect to study in Europe and Australia one day to help develop better crops.

Viri completed her high school years and undergraduate degree in agricultural science at *Universidad Autónoma Chapingo,* an agricultural college in Texcoco, Mexico State in Mexico.

"My undergraduate years were quite challenging," remembers Viri. "Agronomic lectures in the morning were followed by practical work in the field in the afternoon, before reports had to be written in the evening."

Winning a prize in a student competition enabled Viri to attend a young scientist expo in France.

"Travelling to Europe was a real eye opener," recalls Viri. "I loved the experience and decided to return to France later for my four months internship, which involved working with grapevines".

Viri completed further studies in France before returning to Mexico in 2008 where she enrolled again at the agricultural college in Texcoco to complete a master's degree.

"My master's project was part of a very exciting genetics program in maize involving the fortification of crops to address vitamin A deficiency, which can cause blindness," says Viri.

During her master's degree, Viri was introduced to wheat physiologist Dr Matthew Reynolds from CIMMYT (International Maize and Wheat Improvement Centre) who offered her a scholarship to undertake a PhD project aimed at improving photosynthesis in wheat at a CIMMYT partner lab.

"There is good correlation between leaf photosynthesis and total biomass and grain production," says Viri.

"With less land available for agriculture, we need to develop better plants that provide higher yield to meet global food demand. Understanding photosynthesis in plants helps us contribute to the food challenge," says the student.

Viri turned to the experts in the field of photosynthesis and decided to undertake her PhD in Canberra where she could learn from Professor John Evans and Dr Tony Condon and where she would have access to state-of-the-art phenotyping tools developed at the High Resolution Plant Phenomics Centre (HRPPC) with Dr Bob Furbank.

Photosynthetic performance of plants can be measured with portable instruments such as LI-CORs, but this is a rather time consuming process, which limits the number of genotypes that can be screened.

In collaboration with colleagues from CIMMYT, CSIRO, ANU and the HRPPC, Viri is exploring if reflectance spectra can be used as a high throughput screen for photosynthetic characters in wheat to accelerate genotype screening for future breeding and knowledge transfer.

Written by Helli Meinecke (June 2013)