

New Brunswick: Students' plant research points way to faster growing crops

Canada's agri-food industry has been devoting millions of dollars to research genetically modified agricultural products to meet the challenge of the looming world food crisis.

But that research is not exclusive to big business nor need the costs be prohibitively high. Kyung-Won Lee, Emily Weigum, and Bushi Zhang, students at Fredericton High School, won first place in the New Brunswick regional 2008 sanofi-aventis BioTalent Challenge with a project to determine the effects of a mutant gene in the Arabidopsis plant (valuable for its rapid growth and relatively simple genome), and its possible benefits as a way to address world hunger.

With guidance from mentor Helen Pai, a scientist with Agriculture and Agri-Food Canada, they compared mutant Arabidopsis plants developed in the lab to the wild type. The student team took a random sampling from among thousands of mutations developed by the global research community and looked for the variety with the most rapid growth characteristics (using a growth inhibitor to 'weed out' weak performers).

First, seeds from the strongest performing mutant plants were started in petri dishes then planted in soil, the difference in the germination and flowering compared against the wild variety of Arabidopsis.

The benefits to agriculture are obvious - crops with a similar mutant gene could grow faster with an earlier harvesting time. The students hope that this relatively simple process could open up vast areas of land previously thought to have a growing season too short to support agricultural production.