

Photosynthesis study **Science rewritten**

By **RACHEL TOUNE**

SCIENCE textbooks may need to be rewritten after a Townsville researcher discovered a new addition to an age-old formula.

Townsville biotechnology researcher Ken Bellamy has uncovered vital information about the photosynthesis cycle, which occurs when plants use sunlight, water and carbon dioxide to make food and grow.

Mr Bellamy found a group of bacteria commonly present in soils, including in rivers and oceans around the world, creates water and energy using their own photosynthesis process which can then help surrounding plants to grow.

"When we think about growing our food we can now think of two avenues to manage, not just one," he said.

"We can have one extra handle that we can use to enhance that total photosynthesis.

"North Queensland has plenty of sunlight and green plants and these organisms are present too."

Mr Bellamy spoke about his findings in London, Wales and Scotland during the past three weeks, before returning for a carbon farming conference in Orange, NSW, to discuss the paper.

The research opens up the possibility for the method to be harnessed and used to help plants grow in areas with little water.

About eight years ago Mr Bellamy was challenged to look at ways to reduce the nutrient runoff into the waters of Queensland by an officer from the Environmental Protection Authority.

The project triggered an interest in plants which were a major part of the issue, which led to examining the process of photosynthesis and links with the bacteria.

"Nothing grows without photosynthesis so the logical conclusion is to find better or more efficient photosynthesis processes which will create sustainable growth," he said.

"The impact this can have on the environment is we can grow plants



Researcher Ken Bellamy

Photo: SHARON BELLAMY

with much less rainfall than first thought."

Mr Bellamy said the bacteria used heat and reflected UV rays, meaning they could survive in the dark ocean, rather than relying simply on visible light.

The research also included finding ways to incubate the organisms and develop them for use in a liquid or a solid media such as recycled organic matter, which could be spread out in areas to help cultivate plants and improve soils.

Mr Bellamy is now in discussions to introduce the additional material in science classrooms at school.

His findings have been reviewed by a team of scientists from the Australian National University as part of a commission from the New South Wales Department of Climate Change and Water.

"The bacteria are primitive – they were there first," Mr Bellamy said.

"Though it's a matter of contention I believe it is pointing us to where the water came from in the first place."

Mr Bellamy's research will be released to the public within the next month.