

Biotech could help Mexico's bean farmers cope with climate change

Beans are the most important grain legume in human diets Indeed, bean production is central to the food security of Mexico, Latin America, and Africa

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Climate-modelling predicts that higher temperatures will soon limit crop production in Mexico and beyond Despite an annual growth rate of 13% in Mexican bean production human population increases have resulted in greater demand and domestic consumption of Mexico's beans [and] a 60% increase in Mexican bean prices.

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Mexico's President has stated that his government [will not permit GMO technologies in Mexican agriculture](#). This means that we must seek alternative non-transgenic methods to develop drought and heat tolerant crops to combat the effects of climate change.

Our Newton Prize project, a collaboration involving molecular biologist Prof Julie Gray (Sheffield), legume nitrogen fixation expert Prof Georgina Hernández (CCG UNAM), and bioinformatics expert Dr Alejandro Sánchez (UUSMB, UNAM), aims to do just that.

How Can Plant Biotechnology Help?

[Researchers] will identify novel mutations and traits involved in plant gas exchange, water use, and nitrogen use then 'climate-test' key bean lines in the University of Sheffield's Sir David Read Controlled Environment CO₂ Facilities.

The best gene candidates can then be used to develop new drought resistant bean varieties, either through marker assisted breeding, or non-transgenic gene editing technologies. In this way, we hope that we can rapidly produce high yielding bean crops to withstand the coming heat waves and droughts

Read full, original article: [Newton Prize Award for Biotech Drought-Tolerant Beans](#)