Agricultural nitrogen use – boosting efficiency in India

A UKRI-funded network of researchers is helping farmers in India reduce fertiliser use. Innovations include new crop varieties that need less nitrogen and decision support tools for farmers. One technology uses leaf colour to optimise fertiliser application which could save INR7.5 billion (USD100 million) in the Punjab alone.

With the global population booming, food security is a mounting challenge. Crop production relies heavily on the use of nitrogen fertilisers to improve yields. These fertilisers are costly and wasteful with excess nitrogen polluting water and increasing greenhouse gases. New approaches are needed to enhance crop production while cutting the use of nitrogen fertilisers.

A network of seven partners, CINTRIN is led by the National Institute of Agricultural Botany in the UK and the International Crops Research Institute for the Semi-Arid Tropics in India. CINTRIN provides an innovation pipeline that links research & development, crop breeding, agribusiness and farming communities so that new technologies can be taken from the lab to the farm.

This work is paving the way to increased yields of key cereal crops, more secure livelihoods for farmers and reduced environmental damage due to excess nitrogen. More than that, it is developing international capacity to tackle one of the world’s most pressing challenges.

“The basic understandings on nitrogen use in marginal crops such as millets will not only provide the deep insights to be applied in major crops but will also be translated into application in the long run for smallholder farmers of South Asia and Sub-Saharan Africa for their improved incomes and livelihood.”

Dr Rajeev Gupta, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

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