

## Here's how CRISPR is evolving into a tool to protect small African farmers

A research team has used genome editing to produce a [rice](#) variety resistant to yellow mottle virus, which is responsible for high crop losses in sub-Saharan Africa, and which particularly affects small-scale farmers.

The development of the resistant variety, described in a [new paper](#) in the journal *Plant Biotechnology*, is just the first step towards generating resistant, locally adapted varieties for food producers in Africa.

Rice yellow mottle virus (RYMV) is spread by mammals and insects and direct leaf-to-leaf contact. In Africa, the majority of farm plots are less than one hectare in size, and between 10-100% of the rice harvests are regularly lost to the virus.

“The only real protection is to develop rice varieties that possess a resistance gene against RYMV, which would make the plant invulnerable,” says Dr Yugander Arra of Heinrich Heine University Düsseldorf (HHU), Germany, and lead author of the study.

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Their results confirm that disrupting the *RYMVR* gene in the Kitaake variety, a Japonica rice variety, confers resistance without penalising its high yield, at least under greenhouse conditions.

“The next step will be to edit [the mutation] in elite varieties that are better adapted to rice culture in rainfed lowland and irrigated areas of Africa, where rice production is particularly affected by RYMV disease,” the authors write.

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