

# Saving the world's wheat from rusting

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Australia's wheat crop looks to have been saved from a devastating infestation of rust—for now.

In 1999 a new strain of stem rust, a devastating fungal disease of wheat, emerged in Uganda. It has now spread to north to Yemen and Iran, and south to South Africa. Rust transport from South Africa to Australia by wind has been documented in the past.

And since 2000, two new strains of stripe rust have invaded Australia from North America and Europe. Australian wheat farmers have outlayed up to \$90 million a year in fungicides to control this new strain.

Fortunately, resistant wheats have now been developed in Australia to both these threats, says Prof Robert Park of the University of Sydney, head of the Australian Cereal Rust Control Program. “We might have dodged a bullet, time will tell, but it has been a real wake up call.”

Research into rust has been conducted in Australia since the 1880s, Prof Park will tell the XVIII International Botanical Congress in Melbourne today, and there has been very good control of infestations for past 50 or 60 years. But we've become a bit complacent, he says, which could be disastrous in world where it is becoming increasingly difficult to produce enough to feed everyone.

Not only that, but we've also lost much of the base of skilled people who dealt with wheat rust infestations in the past. “There's a real need to train a new batch of plant breeders and plant pathologists,” Prof Park says.

The good news is that new technology can now help out effectively. In terms of surveillance, we can use GPS and web-based tools, and there is better modelling to predict where the threats of rust infestation may come from. DNA fingerprinting can be used to monitor the spread of the diseases.

As far as [wheat](#) itself goes, Prof Park says, we now have indicators, known as biological markers, for some of the most important genes which confer rust resistance. “And we can now stack two or three or four resistance genes together, which makes it much harder for the rust to mutate to overcome resistance.”

“We can’t afford to become complacent when it comes to food production.”

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