

research highlights

PEST CONTROL

Reproductive strategy

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The wide adoption of transgenic cotton varieties expressing insecticidal proteins from *Bacillus thuringiensis* (Bt) has greatly reduced the use of broad-spectrum insecticides for this crop, but concerns over long-term off-target effects remain, and in any case not all insects are susceptible to Bt. Luo *et al.* demonstrate a subtler transgenic

approach to control the sap-sucking plant bug *Adelphocoris suturalis*, using a DNA contraceptive rather than an insecticide.

Several species of *Adelphocoris* have emerged as pests of cotton and other crops in China, America and India, not least because of their resistance to Bt. The researchers had previously identified a fatty acyl-CoA reductase (FAR), which they believed to be involved in pheromone production. However, reducing the expression of the *AsFAR* gene using RNA interference (RNAi) suppressed the development of ovaries in female *A. suturalis* and dramatically reduced their fertility. Luo *et al.* proceeded to create transgenic cotton plants, producing a 432-base-pair fragment of the *AsFAR* gene. When bugs fed on these plants, the double-stranded *AsFAR* fragment stimulated RNAi in the insect, suppressing expression of the *AsFAR* gene.

In field experiments conducted over two years, the transgenic cotton showed substantial resistance to *A. suturalis* infestation while having no detectable effect on other insect populations. Using targeted manipulation of an insect's reproduction could thus prove an effective and acceptable transgenic approach to limiting losses of crops to herbivory.

Chris Surridge