

Destruction of transgenic olive field trial dubbed 'vandalism'



Eddo Rugini, the principal investigator cultivating the stand of GM trees at University of Tuscia, witnesses the destruction.

Two experimental trials of genetically modified (GM) plants were threatened with destruction in late spring. One happily survives today at Rothamsted Research in Hertfordshire, UK. The other, at the University of Tuscia in Viterba, central Italy, was not so fortunate; over 100 kiwi, olive and cherry trees were trashed. The trees were modified with different combinations of the tobacco osmotin gene to resist fungal diseases or with *Root loci (rol) ABC* genes from soil bacterium *Agrobacterium rhizogenes* to produce shorter trees. All that remains from the decade-long trial is a pile of dried leaves and wood waiting to be burned.

"It's a life's work gone wasted," laments plant scientist Eddo Rugini, who was conducting the field trial at the University of Tuscia. "Tree cultivation is time consuming; you may need up to ten years to get a second generation. Olive trees were about to flower for the first time and several kiwi plants were showing hints of drought tolerance worth studying," adds Rugini. "We had found that fruit from some clones of kiwis were more tolerant to post-harvest fungal infections."

The trial had originally got the green light from Italian authorities in 1998. In 2009, however, researchers' attempts to renew the authorization had failed partly due to overly strict requirements imposed by new regional rules requiring all transgenic plants to be fully contained in a greenhouse. The difficulties were compounded by the national Italian agencies' ideological opposition to authorizing field trials, which led them to disregard European directives regulating the release of GM organisms into the environment for research and commercial purposes.

After the failure to renew the authorization, the anti-biotech group Genetic Rights Foundation then put pressure on several officials in the Italian Ministry of the Environment to dig up the transgenic trees. On June 1, the Italian government ordered the trial's destruction under penalty of fines and jail. Public appeals by scientists to

restart the authorization process went unheard. The idea that Rugini was forced to spray his plants and drill them to inject an herbicide is "inconceivable," according to the Italian Association for the Development of Biotechnology (Assobiotech) headquartered in Milan. "It can be seen as a demolition of a scientific cultural monument, an act of legal vandalism," says Klaus Ammann from the University of Bern.

Meanwhile, a different story has been unfolding around a field trial being carried out in the UK at the world's oldest agricultural research institute, Rothamsted Research. Here, activists set out to 'decontaminate' a trial testing aphid-resistant GM spring wheat expressing two plant-derived pheromones—synthetic enzymes (E)- β -farnesene synthase and FPP synthase. The protestors had mistakenly attributed the genetic modification to cow-derived genes. "Our focus is on testing the hypothesis that plant-synthesized pheromones can alter insect behavior in the field, with the goal of moving crop protection to a new, more ecological level," explains Johnathan Napier from Rothamsted.

Direct action against the site was scheduled on May 27 but never took place, probably because the GM wheat is protected by a large perimeter fence, closed circuit television, 24-hour security and lately a High Court injunction. Public relations activities by Napier and colleagues were also effective, grabbing attention outside the usual circles. "I think they did change public debate" says Sile Lane from Sense About Science, a charitable trust that helped circulate the "Don't destroy research" petition. Lane believes the ability to stop destruction of the trial in the UK signals a softening in general sentiment against GM organisms. People are "especially offended that activists claiming to represent the public want to destroy research," he says.

Anna Meldolesi Rome

IN their words



"Physicians are not going to listen to the FDA."

Jean-Pierre Garnier, former CEO of GSK, to shareholders back in 2006 on why the safety warning on its asthma drug Advair wouldn't affect the company's share price. Garnier's promoting off-label use

of Advair contributed to the \$3-billion fine levied against GSK in July. (*Bloomberg Business*, 3 July 2012)

"I would like to lose the language of warfare. It does a disservice to all the bacteria that have co-

evolved with us and are maintaining the health of our bodies." Julie Segre, a senior investigator at the National Human Genome Research Institute, in light of the flood of recent papers on the human microbiome. (*The New York Times*, 18 June 2012)

"While greater access to more treatment options is definitely a positive for patients in the US, it is not clear if greater access leads to better health outcomes." Joshua P. Cohen, of the Tufts Center for the Study of Drug Development, whose study shows that US patients get faster access to oncology drugs than European patients, though they pay more for them. (Tufts CSDD, 10 July 2012)

"Is it a rotten apple that looks fresh? [Genetic engineering is designed to] turn apples into an industrialized product." Lucy Sharratt, coordinator

of the Canadian Biotechnology Action Network, an anti-GMO consortium. A genetically engineered apple that doesn't turn brown upon cutting was submitted for review to the USDA by a small Canadian company, Okanagan Specialty Fruits. The apple has an extra copy of an apple gene for polyphenol oxidase, which results in a feedback loop that shuts down the pathway. (*The New York Times*, 12 July 2012)

"That's really been a startling revelation to us that despite the community saying quality is everything, quality really isn't everything." Clifford Reid, CEO of Complete Genomics trying to explain why their DNA sequencing platform is underperforming in the market compared to others that deliver lower quality data. (*Forbes*, 13 July 2012)