

News focus

Spanish farmers welcome GM maize

Changing economics is weakening European resistance to genetically modified crops but environmental concerns remain. **Nigel Williams** reports.

European resistance to GM crops — the result of one of the most highly effective environmental campaigns and ongoing worries about environmental damage — is set to be challenged by soaring food prices and a new enthusiasm on the part of farmers. A new study finds European farmers who grow genetically modified crops enjoy higher yields and revenues than conventional growers. A team from the Joint Research Centre of the European Commission surveyed more than 400 Spanish farmers who grew Bt maize — the only GM crop allowed for cultivation in the EU. They found they produced higher yields and earned up to 122 euros more per hectare than conventional maize farmers.

It is the first time researchers have looked into the economic impact of GM crops in Europe. Emilio Rodriguez Cerezo, who led the study, said: “There are definite economic advantages for farmers for the reason that their crops are not destroyed by pests.”

The European Commission president, Jose Manuel Barroso, wants to remove regulatory obstacles to the controversial technology, arguing that GM crops could counter soaring food prices. However, the French president, Nicolas Sarkozy, who took over the EU presidency at the beginning of the month, is calling for more controls on GM organisms. Environmental groups accuse the GM industry of exploiting the global food crisis to win approval for its products.

The EU last month launched a study into whether a large-scale expansion of GM crops would curb soaring food prices. The European Commission said GM crops could “play an important role in mitigating the effects of the food crisis”. Barroso warned that the EU’s current obstacles to GM products could result in higher food prices in Europe than the rest of the world. EU leaders endorsed the plans to review the complex system of approving GM licences, which is split between the EU and national governments. It could be streamlined to make the approval process easier.

Gordon Brown, the British prime minister, told a Brussels press conference that decisions on the issue should be driven by science. “In the end, the attitude to GM crops and GM food taken by consumers in our country and in any country is going to depend on the scientific and medical



Highly charged: A trial crop of genetically modified maize in England is protected by an electric fence. (Picture: Andrew Fox/Alamy.)

advice. That is what we are looking for from the work of the review group," he said.

In a report to EU leaders, Barroso said the food price rises had added a 'new dimension' to the public debate on GM crops. "The recent surge in agricultural commodity prices could be exacerbated by trade obstacles related to GMOs, thus resulting in an increase of [animal] feed and food prices in the EU higher than in other parts of the world."

Plans by the Commission to give 'pre-marketing authorisation' to 16 GMOs have been backed by the Council of Ministers, which is the EU's main decision-making body. The Commission has urged member states with national bans on GM crops to lift them, saying they are not 'scientifically justified'.

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But this new-found enthusiasm for GM crops in Europe received a rebuttal in Britain from the head of Natural England — the government's own wildlife and countryside agency.

The chairman, Martin Doughty, warned in a letter to the Independent newspaper against "rushing headlong to embrace GM crops as the solution to rising food prices". He says they can cause harm to wildlife, and there is little evidence that the present generation of biotechnology crops will help in reconciling surging global food demand with protecting the environment. "The evidence of field-based trials on GM crops previously proposed for commercial release in England demonstrates that they can have a detrimental indirect impact on farmland biodiversity."

And in a recent study in the US, researchers found that the yield from GM soya was actually lower than from conventional varieties. The study, carried out at the University of Kansas, found that GM soya produces about 10 per cent less crop than its conventional equivalent.

Kenya's conservation challenge

The world's thirst for biofuel and the recent political turmoil threaten conservation efforts in Kenya. **Michael Gross** reports.

Kenya's Tana river delta, home to a rich wetlands fauna and flora, is bound to be converted to sugarcane plantations under plans approved by the country's National Environment Management Authority (NEMA). The company Mumias Sugar, with headquarters in Nairobi, wants to use 2,000 square kilometres of the land to plant sugarcane for biofuel production, in order to benefit from the current high fuel prices.

As with biofuel projects elsewhere in Africa (Curr. Biol. 18, R227), there are concerns that the farming of fuel crops is going to do more harm than good. Conservation organisations, including Nature Kenya and the UK's Royal Society for the Protection of Birds (RSPB), were quick to criticise the government approval for the project and to point out flaws in the cost-benefit calculation. Environment News Service quotes Paul Matiku of Nature Kenya as saying: "This decision is a national disaster and will devastate the delta. The Tana's ecology will be destroyed yet the economic gains are pitiful."

Conservationists have estimated that the revenue losses from fishing, farming and tourism will total \$59 million over the next 20 years, which exceeds the expected income from the sugarcane plantation.

Moreover, there may be unquantifiable damage resulting from the loss of mangrove wetlands in the Tana delta. Mangrove swamps provide excellent protection against coastal erosion and even against catastrophic flooding events, as the 2004 tsunami has demonstrated. With the rapid rise of sea levels forecast for the next decades, mangroves will become an invaluable defence against land loss. They are also important as shelter for other wildlife, including fish and crustaceans, and are highly efficient in carbon sequestration.

Mark Huxham, a senior lecturer at Napier University in Edinburgh studies

mangrove ecology and restoration at the coasts of Kenya and Sri Lanka. "This [sugarcane project] is potentially very bad news for Kenyan wildlife and the people dependent on the Tana river delta," Huxham commented. Diversion of riverwater for the purpose of irrigating the plantations could have catastrophic effects on the mangrove sites, he fears.

Particularly, reduction in sediment and freshwater supply to the delta will enhance coastal erosion, increase salt water intrusion, and generally make life harder for mangroves. When mangroves die off, coastal erosion becomes worse and irreversible. The problems of salt water intrusion may also affect the quality of agricultural soils in the flood plain, Huxham explains.

"All these factors need to be weighed against the short-term gain associated with biofuel production," he concludes.

Even though the elephants' habitat is highly fragmented now, the animals have developed highly sophisticated patterns of moving between different safe areas

Elsewhere in Kenya, conservation efforts are also under pressure, but for different reasons. Lions and other predators have been at the tail end of a domino chain of unfortunate events including the political unrest surrounding the elections at the end of last year.

Bruce Patterson from the Field Museum of Natural History in Chicago studies lions at the Taita/Rukinga Wildlife Conservancy in the Tsavo region, with the aim of fostering peaceful coexistence between the big cats and the local farming community.

Patterson reports that, due to the recent political troubles, the ranch where his coworkers and volunteer groups study the lions has experienced a big influx of cattle herders, leading to conflicts with the local lion population. Lions have been killed or driven away. For the researchers, this development endangers the success of population and life-history studies that they have been conducting since 2002.

In June, Kenya-based naturalist Richard Leakey has raised concerns