GM phobia spreads in South Asia

During the summer, a furor erupted in China over an allegedly unethical trial involving Golden Rice tested in children. A news release from Greenpeace China accused scientists of using children as "guinea pigs," prompting a nationwide outcry. The trial that caused the uproar was designed to test whether rice genetically engineered to exhibit endosperm-specific expression of a phytoene synthase from daffodil (*Narcissus pseudonarcissus*) and a carotene desaturase (*CrtI*) from the soil bacterium *Erwinia uredovora* could be absorbed by children 6–8 years of age as a potential means to combat vitamin A deficiency. When the results, which showed that Golden Rice was as effective as pure beta-carotene in oil and better than that available in spinach, were published online August 1 in the *American Journal of Clinical Nutrition* (**96**, 658–664, 2012), Greenpeace launched its smear campaign, formenting widespread public outrage.

The Golden Rice spat is the latest in a wave of protests erupting across southern Asia against GM products. In both China and India, the agbiotech sector previously enjoyed support from state officials, but recently the public mood has soured. The technology is now caught in the crosshairs of local politicians. At the same time, the media circus surrounding publication of a controversial French study has continued to stoke the flames of public opinion.

The Chinese state was once an aggressive proponent of genetically modified (GM) food. In 2008, the state poured $3.8 billion into a 10-year R&D program on GM crops and animals. By 2009, China was on track to be the first to commercialize a pest-resistant version of the country's staple crop, *Bacillus thuringiensis* toxin (*Bt*) rice (*Nat. Biotechnol.* **28**, 8, 2010), after state officials issued safety certificates. At the same time, a feed crop, a variety of maize that produces phytase to enable animals to better utilize phosphorus in feed was approved in 2009. Both approvals had to be followed by additional production trials, which would have meant another five years for GM seeds to be available for commercial purposes.

But finding themselves on the brink of introducing several GM crops, Chinese political leaders hesitated. Protests from environmental groups, social science scholars and members of the public were heard around the country. The fear of losing international buyers might have played a part, and initial enthusiasm gave way to public opposition and a cooling in top leaders' attitudes (*Nat. Biotechnol.* **28**, 390–391, 2010). Some Chinese investigators are putting a positive slant on development. "In a sense, it [slowing commercialization of GM] is a good thing because it will give us more time to develop a strong seed industry to compete with Western agricultural biotech giants," says Qifa Zhang, a leading rice scientist at Wuhan-based Huazhong Agricultural University.

To shore up policymakers' support for science-based policy, earlier this year, a group of leading researchers from the Beijing-based Chinese Academy of Sciences (CAS) and Chinese Academy of Engineering (CAE) submitted a scientific report to top Chinese leaders. Such reports had, in the past, received prompt state endorsement. Not this time. Top policymakers issued a belated and lukewarm response. This could have been related to the leadership transition scheduled last month, says Xiaoya Chen, a leading scientist and president of Shanghai Institutes of Biological Sciences under CAS. A smooth power transition, which takes place every ten years, is currently the top priority and politicians may be reluctant to stir public opprobrium with issues like GM crops.

Without a push from the top, most pre-commercialization research projects cannot go ahead because the Chinese Ministry of Agriculture, under public pressure, does not issue permits for environmental release of GM crops. Research funding is suffering, too. The

Golden rice, engineered to produce ß-carotene to prevent vitamin A deficiency, compared with white rice.

IN brief

Commission calls for genomic privacy

A US bioethics panel is calling for privacy protection in a new report released in October. The Presidential Commission for the Study of Bioethical Issues (PCSBI) lays out a dozen new recommendations in its report "Privacy and Progress in Whole Genome Sequencing." The overall goal is to strike a balance between encouraging genomic research to benefit human health, on the one hand, and protecting the privacy of those whose genome are being sequenced, on the other. The Commission stops short of recommending national standards, calling instead on federal and state officials to work together to "assure a consistent floor to protect privacy," says PCSBI chair Amy Gutmann, who is president of the University of Pennsylvania. About half the states have laws that already provide "some protection." Even if the US Congress were to set national standards, however, privacy protections are likely to remain a jumble at the international level, where genomic sequence data sharing is expected to expand. And as the cost of sequencing drops, it is "not a fantasy" to imagine organizations "surreptitiously" taking saliva or other specimens to determine DNA sequences and then using such information to exclude some individuals and perhaps also their family members from life or health insurance coverage, according to Gutmann. The commission recommends "fully informed consent" for all human genomic sequencing, thus excluding surreptitious sequencing and thereby protecting citizens whenever whole-genomic sequencing is undertaken, she says. *Jeffrey L Fox*

IN their words

"We have crossed some critical barriers but still need to do a lot of work to reach the final destination," Nisar Wani, head of the Reproductive Biology Laboratory at Dubai's Camel Reproduction Center. Researchers in Dubai have established camel cell cultures in preparation for creating drug-producing transgenics. (*SciDev.Net*, 3 September 2012)

"This result knocked me off my chair," Scott Halstead, an adviser to the Dengue Vaccine Initiative comments on the disappointing efficacy of Sanofi's dengue vaccine, which only reached half the expected 70% protection. (*Reuters,* **12** September 2012)

"These pleas are a victory for the American public, in demonstrating the FDA's commitment to investigating cases of individuals and businesses that prey on the sick and vulnerable with phony medical treatments," FDA Special Agent Patrick Holland comments on the guilty pleas entered by two fraudulent stem cell investigators, Lawrence Stowe and Frank Morales, who were outed in 2010 by the US television show 60 Minutes. (*60 Minutes Overtime*, 13 September 2012)

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