

## Drugs in Mexican crops?

### To the editor:

As a representative of a recently formed biosafety discussion group in Mexico with an interest in plant-manufactured products, I and the group applaud your editorial in the February issue (*Nat. Biotechnol.* 22, 133, 2004) highlighting the controversy over the use of food crops, such as maize, in the production of pharmaceuticals.

The article suggests two nontechnical levels of segregation to prevent drugs or drug intermediates in food or feed crop species finding their way into the food chain: geographical and cultural. From our perspective in Mexico, the second choice (that is, not using food plants for producing drugs or other industrial compounds) is the best. Although geographical segregation might work in some regions and countries, this is not the case in Mexico, even if we were to decide to consider its territory a 'drug-producing plant'-free area.

Mexico's domestic maize supply, including imports (6 million tons during 2001; ref. 1), runs on the order of 24 million tons. Fifty-three percent of this is used as food<sup>1</sup>. We import maize grain from the United States every year, we have migrants moving between the United States and Mexico constantly and we share borders where pollen does not need a passport for free movement. The average maize consumption in Mexico runs in the order of 350 grams daily<sup>1</sup>, which translates into around 600 (ref. 2) culinary dishes. This means that maize intake is probably one order of magnitude higher in Mexico than it is in the United States. This maize is consumed in the form of products much less-processed than those in the United States.

At the First Meeting of the Parties of the Cartagena Protocol on Biosafety held in Malaysia last February, Mexico officially stated that it will prohibit the release into the environment of genetically modified (GM) maize that could be regarded unsuitable as food<sup>3</sup>. Even though this is an important and relevant move, it will not be

effective unless the three National American Free Trade Agreement countries agree to similar policies.

1. <http://faostat.fao.org/faostat>
2. Bourges, H. in *La Alimentación de los Mexicanos* (eds. Alarcon-Segovia, D. & Bourges, H.) 97–134 (El Colegio Nacional, México DF, 2002).
3. <http://www.cibiogem.gob.mx/noticias/2003/agosto/index.html>

Francisca Acevedo

Mexican Biosafety Discussion Group (GEF project MEX/01/G32/A/1G/99), National Commission for the Knowledge and Use of Biodiversity (CONABIO), Coordinadora de Análisis de Riesgo y Bioseguridad, Liga Periférico-Insurgentes Sur 4903, Parques del Pedregal, Tlalpan, 14010 Mexico. e-mail: [facevedo@xolo.conabio.gob.mx](mailto:facevedo@xolo.conabio.gob.mx)

## The facts on flax

### To the editor:

Your editorial 'Drugs in crops—the unpalatable truth' (*Nat. Biotechnol.* 22, 133, 2004) was timely and important, but ends with the terrible proposal "Let's grow pharma plants, but let those plants be *Arabidopsis*, or flax, or duckweed." The tiny mustard plant, *Arabidopsis*, might work in very small farms and duckweed may not be all wet, but flax is an abominable suggestion.

Flax is grown extensively in Canada and the United States for fiber (linen), oil (linseed) and animal feed. The crop is both inbreeding and insect pollinated<sup>1</sup> meaning that the transgenes from pharma crops could easily pollinate the common weedy relatives of flax along with the very common feral weeds of the crop plant<sup>2</sup>. One transgenic herbicide-resistant form of flax has been approved for

commercial production<sup>2</sup>. Flax is therefore not a good candidate for pharma crops because it is known to be insect pollinated, allowing the pharma transgenes to spread to commercial crops used in human foods, such as salad dressing and in animal feed cake along with industrial oil and fiber.

1. McGregor, S. *Insect Pollination of Cultivated Crop Plants*. (US Government Printing Office, Washington, DC, USA, 1976). <http://gears.tucson.ars.ag.gov/book/chap9/flax.html>
2. US Department of Agriculture Animal and Plant Health Inspection Service Fed. Reg. 64, 28794–29795 (1999). [http://www.aphis.usda.gov/brs/aphisdocs2/98\\_33501\\_p\\_corn.pdf](http://www.aphis.usda.gov/brs/aphisdocs2/98_33501_p_corn.pdf)

Joe Cummins

Department of Biology, University of Western Ontario, London, Ontario N6A5B7, Canada. e-mail: [jcummins@uwo.ca](mailto:jcummins@uwo.ca)

## Schmeiser versus Monsanto

### To the editor:

On Friday, May 21, 2004 in a 5:4 split decision, the Canadian Supreme Court upheld the decisions of both the Federal and Appeal courts, and confirmed the finding that Percy Schmeiser, by knowingly growing glyphosate-resistant canola that was not purchased, had infringed Monsanto's (St. Louis, MO, USA) Canadian patent 1,313,830 (ref. 1). Despite media attempts to frame the case as a battle between David and Goliath—

the lone farmer against big industry—I contend the case really was about David against David.

Only 18 months earlier, the Supreme Court had concluded that higher life forms are not patentable in Canada<sup>2</sup>. In *Harvard*<sup>3</sup> it was stated that the Canadian Patent Act does not clearly indicate that higher life forms are patentable, and because of ethical and environmental issues that need to be considered, this matter needs to be resolved