

The Green Gene Revolution

As millions of people in Zambia and Zimbabwe faced famine in 2002, their governments rejected corn donated by the United Nations, calling it “poison” because it contained some genetically modified kernels. Similar scorn sounded this past June outside a Biotechnology Industry Organization meeting in San Francisco. There protesters blockaded the street, shouting predictions that GM crops would devastate

human health, the environment and the welfare of small farmers.

Yet only a month earlier the U.N. Food and Agricultural Organization (FAO)—traditionally a champion of the small farmer—had concluded that the ongoing “war of rhetoric” about agricultural biotechnology may pose a greater threat than the technology itself does. One of the worst things about GM crops, the FAO

argued, is that too few farmers are planting them.

In its refreshingly apolitical report, *State of Food and Agriculture 2003–2004*, the FAO assessed a growing body of scientific and economic data on GM crops. The science, it determined, says overwhelmingly that the GM food plants currently on the market pose no risk to human health, although multiple-gene transformations now in development need further study. It also notes that more research should be done on the environmental impact of GM crops but that widespread cultivation of the plants in North and South America has so far led to no environmental catastrophes.

At the same time, the FAO pointed out that the technology’s benefits could be huge for farmers in the developing world. When four million small-scale cotton farmers in China switched to planting insect-resistant GM cotton, they reaped 20 percent higher

yields while using 78,000 tons less pesticide—and enjoyed a substantial drop in the annual death toll among farm workers from pesticide poisoning.

So why don’t more farmers in the developing world adopt GM crops? One reason is that few are tailored to their needs. Outside China, ag-biotech research is overwhelmingly dominated by corporations, not academic centers, and the companies understandably focus their efforts on crops that deliver big profits in industrial countries, namely, corn, soy, canola and cotton. Unlike the 1960s green revolution, which was for the most part publicly funded and targeted to helping poor farmers, the gene revolution has yet to reach Third World staples such as sorghum and wheat.

European agriculture risks being left out, too, warned another study, issued in May by the European Academies Science Advisory Council. Public mistrust of GM crops has cast a pall over any plant science with the word “genetic” in its description, and state funding for agricultural research has been anemic for years. As a result, even the basic genomic studies that could improve crop traits through traditional breeding [see “Back to the Future of Cereals,” by Stephen A. Goff and John M. Salmeron, on page 42] are increasingly left to corporate curiosity. But facing a political climate that is generally hostile to ag-biotech, companies have grown pessimistic about their commercial future in Europe and have begun moving their plant biotechnology divisions elsewhere.

Around the world, nations cannot keep ceding ag-biotech research to big business and then complaining that corporations control it. Serious public investment by industrial countries—both at home and in the developing world, to help scientists there build their own research infrastructures—could serve both commercial and humanitarian ends. It’s time to call an armistice in the war of words over ag-biotech.



PROTESTERS in San Francisco.

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