

First, issues of style and language. Hoyle accuses environmentalists of flippancy and lack of analysis, yet his own writing is full of the same. The fact that the critique of "political correctness" has now reached the size of an industry in the U.S.A. does not make the sticking of such labels a valid substitute for proper analysis, and neither does the ritual invocation of the bogeyman Rifkin. These may seem trivial examples, but there is a real issue about language; luridness is no worse than a dry, euphemistic technospeak and technostyle which obscures real ethical issues behind technical ones, and which is all too common in the scientific press. Contrary to his assertion, the scientific press and newspaper science columns are very full of totally uncritical articles on biotechnology. Where criticism occurs, it is rarely anything but questions of "fine tuning."

Other Hoyle techniques have little more integrity, such as his use of the expressions "discredited" and "canard" without substantiation, and his persistent rubbishing of arguments as "outdated." Yet at a recent conference of agrochemical and agbiotech executives, I was interested to observe the unwillingness of most participants to defend herbicide-tolerant crops in the way they did three years ago. Perhaps Hoyle should get up to date.

Second, actual disinformation. The USDA Beltsville pigs were produced in the mid-to-late, not early, 1980s, and research on them and on similar sheep was continued for several years after the animal welfare problems became apparent. Other research into growth promotion, such as the use of the *ski* gene, or the double muscling gene in cattle, promises similar problems and is even more recent. The idea that regulators are constitutionally biased against new technologies is laughable. Even where they have no actual commercial interest in the technologies, government advisory committees are selected from amongst those scientists who are the leading practitioners and advocates of new technologies.

One actual point of substance that Hoyle makes is that most research funding goes down the drain, and there will be few agbiotechnology products on the markets until later in the decade. Yet this misses the point, because what environmentalists are interested in is the trends and intentions of companies. From our point of view, if we wait to see what comes through the product pipeline, it will be too late, because companies by then will have spent tens of millions of dollars in product development, as well as basic research, and will not easily be able to abandon their investment, even if it turns out to be damaging.

Finally on the question of uniformity. It is indeed true that commercial trends in plant breeding have drastically narrowed the genetic base of agriculture in industrialized countries, even without biotechnology. The real point about biotechnology, however, is that it provides new opportunities for radicalizing this process, both on a technical level

and because of the restructuring that it is promoting in the seed industry. Biotechnology is putting the whole industrial monoculture machine into a new and higher gear.

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#### To the editor:

In his column "Amicus Offers Up Disinformation and Distortion," (*Bio/Technology* 11:666, June), Russ Hoyle bashes the Natural Resource Defense Council publication *The Amicus Journal* and environmentalists in general for supplying misinformation and for not talking to individuals with opposing views. Hoyle appears guilty, however, of these very sins for which he attacks environmentalists.

Hoyle accuses environmentalists of "not laying a glove" on drug production because "Drugs that may save people's lives do not make sexy political targets." I doubt that Hoyle surveyed environmentalists as to why they have focused on risks of agricultural biotechnology and not on risks of pharmaceutical biotechnology. If he had, he might have discovered that there is a good reason for this focus.

The primary beneficiaries of drugs (sick people) also directly accrue the risks of drugs (side effects). But the risk-benefit equation is not so simple in agriculture. The individuals or natural ecosystems that bear the risks of agricultural products, such as pesticides, often do not enjoy direct benefits. Thus environmentalists have sought to protect the health of people and ecosystems exposed to these risks, while relying on established disclosure mechanisms to allow sick people to make personal decisions about whether to take pharmaceuticals.

Hoyle denounces *Amicus* for "dredging up" a "discredited and outdated" 1990 report of the Biotechnology Working Group—a report I coauthored—"to support the old canard about a chemical-industry conspiracy to develop herbicide-tolerant plants. . ." But no conspiracy theory is necessary, nor to my knowledge has one ever been suggested, to explain the widespread development of herbicide-tolerant plants. The market provides clear incentive for companies to develop plants that tolerate herbicides they manufacture.

The primary point of the Working Group report was that the oft-repeated promises that biotechnology will end dependence on synthetic chemical pesticides are clearly false. This point remains on target: as of last year, 57 percent of approvals in Organization for Economic Cooperation and Development countries for field trials of transgenic crops were for herbicide-tolerant plants.

Hoyle chastises environmentalists for not reading publications like *Science* and *Bio/Technology* to gain different perspectives on biotechnology issues. I happen to read both regularly. But I don't see how Hoyle intends to attract more environmentalists to read *Bio/Technology* with his offensive, condemnatory piece.

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