The scientific method

To the editor:

Russ Hoyle's commentary, "A quixotic assault on transgenic plants" (*Bio/Technology* **12**:236-237, March), in which he takes issue with the new publication, "Perils Amidst the Promise: Ecological Risks of Transgenic Crops in a Global Market," published by the Union of Concerned Scientists (Cambridge, MA), raises several points that merit further discussion.

I concur with Hoyle that much of the publication is devoted to "highly speculative possibilities that build a worst-case risk scenario for the dangers of genetically engineered plants." My disappointment in the publication is that Rissler and Mellon minimize the tremendous amount of scientific data already available from hundreds of field tests conducted by the scientific communities in more than 20 nations. Procedures to assure protection of the environment and public health, termed biosafety, have been vital components of each of the field tests.

In 1990, the United States Department of Agriculture took the lead in organizing a series of international symposia on "The Biosafety Results of Field Tests of Genetically Modified Plants and Microorganisms." The first symposium was held in November 1990, in Kiawah Island, SC, and involved 100 scientists discussing field performance data from case studies and how to improve the conduct of field tests to answer crucial questions posed by the regulatory agencies. The second symposium was held in Goslar, Germany, in May, 1992, and involved 200 scientists with the focus on such issues as behavior of engineered versus non-engineered plants in the environment and the comparative ecology of transgenic and conventional crops. Proceedings from both of these symposia were published.

"Hans, I really respect your design of our new plant. Now which part of the wiener is my office?"

The third international symposium is scheduled for November 13-16, 1994, in Monterey, CA. Not surprisingly, the critical issues to be addressed by this symposium are issues also raised by Rissler and Mellon; namely, are risks scale dependent, are there unique risks when testing in centers of diversity, and are there unresolved issues regarding the possible generation of new viral pathogens from transgenic plants? The goal of this meeting is to receive, review, and discuss real data from carefully conducted field studies. These issues can only be resolved by focusing on the hard scientific evidence that comes after years of research. We must assemble the scientific results and address conclusions rationally rather than making assumptions about the threat or the promise of transgenic crops.

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Two Techne

To the editor:

In reference to the news article "106 U.S. Biopharmaceutical Firms Lose $1.1 Billion" (*Bio/Technology* **12**:333-335, April), the financial figures used are those of Techne Corporation, a holding company registered in the state of Minnesota with two wholly owned subsidiaries—R & D Systems, Inc., (Minneapolis, MN) and R & D Systems Europe, Ltd., (Abington, U.K.). We have no connection to Techne in Princeton, NJ.

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MedLine update

To the editor:

We wish to alert the readers of "Turning on Tumor-Fighting Cells" (*Bio/Technology* **11**:1117-1119, October) to a series of observations that are very relevant to the problem of lack of effectiveness of anti-tumor "killer cells" in the tumor-bearing host. In 1977, Biddison and Palmer[1] published that, during the progressive growth of a murine carcinogen-induced tumor, P815Y, in its syngeneic host, cytotoxic lymphocytes (killer cells) were induced. These were isolated from the tumor mass on day-10 and on day-16 after the initiation of tumor growth with an inoculation of 1,000 cells. The tumor load by day-16 had expanded to 3-8 x 10^8 tumor cells in the animals, and these, when isolated and tested, were now found to be resistant to the killer cells. The day-16 tumor cells would not cold-target inhibit the killing of labeled tissue culture-grown tumor targets by either day-10 or day-16 killer cells in a 51Cr-release *in vitro* assay. Ten years later, Fahey and Hines[2] confirmed that P815 tumor cells lose their sensitivity to killer cells during progressive growth. Manson[3] published data showing that killer cell-resistant tumor cells were coated with an anti-tumor IgM antibody, found *in vivo* only on the tumor cells. The IgM was eluted from the tumor and found to be tumor-specific. Immunoprecipitation studies showed that the epitope-bearing molecules (oncotopes) were hydrophobically associated with the major histocompatibility complex class I gene product in the tumor cell membrane. Similar phenomena were shown to occur with other immunogenic murine tumors.[4] It