THE LAST WORD/

THE VALUE OF CONTROVERSY

by Susanne L. Huttner

The *Pseudomonas syringae* ("Ice-minus" or Frostban) controversy presents an interesting case study. It reveals a critical disjunction from the effective past research practices that have underwritten our long history of success in introducing new agricultural technologies to American farming.

There is no question that the antagonism Steve Lindow and scientists at Advanced Genetic Sciences (Oakland, CA) encountered in Tulelake and Monterey County was sparked in large part by the Foundation on Economic Trends (Washington, DC). We will never know how the communities would have responded without outside agitation. However, since then nearly 200 field trials of modified plants and microorganisms conducted in the U.S. have all passed off without significant controversy. The same is largely true of field trials in Europe.

We can learn at least two important lessons from the Ice-minus experience. The first is that scientifically unsound oversight approaches pave the path to controversies. The flawed logic inherent in the NIH recombinant DNA guidelines that subjected all recombinant DNA research to special oversight created, fostered, and continues to foster an aura of risk disproportionate to the real risk. Other federal regulatory schemes have also proposed or implemented regulatory procedures that selectively sequester new biotechnology products for special review.

This behavior by the federal agencies confuses and misleads; and, unfortunately, city and county government officials are not immune from that confusion. We learned the hard way, from direct experience, that state and local governments have important roles in oversight of agricultural research . As the federal debate continued many, if not the majority, of local regulators and administrators became misinformed and uncertain about regulatory oversight. Many still believe there is no oversight of biotechnology.

Fortunately, the Interagency Task Force (created in 1985 and much like the federal Biotechnology Science Coordinating Committee) concluded that no new federal and state oversight mechanisms for biotechnology were needed. The Task Force published a handbook that provides a useful guide to the permit requirements of state and federal agencies. Without such analysis and guidance, there is a real threat that the fifty states may each develop different regulatory schemes.

The University of California Systemwide Biotechnology Program has developed, in conjunction with the California Task Force, a statewide initiative to educate state, city, and county officials on biotechnology regulation. It provides professional training on the science, applications, and extensive regulatory frameworks of agricultural biotechnology for agriculture commissioners and Cooperative Extension farm advisors from California's 54 counties.

The initiative also created a forum (July 1990) for regulators from more than 30 states to assess agricultural biotechnology oversight, out of which came a publication, "Guidance for State Governments on Oversight of Biotechnology." This encourages states to consider existing authorities before proposing new laws. Elements of this initiative might be a useful model for a national education effort.

The second lesson learned from the California controversy was that characterizations of serious and widespread negative public perceptions of the Ice-minus experiments were wildly exaggerated and generally wrong. The Association of Bay Area Governments—representing ten counties, including sites of Ice-minus activities—found that local communities express either low interest in biotechnology or some enthusiasm for its economic development potential.

In contrast to this Californian experience, in Washington DC one is struck by a chorus of agency officials and environmental lobbyists claiming that the public is clamoring for special biotechnology oversight mechanisms.I don't hear that in California, despite Ice-minus and its controversy. I didn't hear it from state agricultural and environmental regulators at the 1990 regulatory forum. I didn't hear it from industry and academic researchers who reported on more than 100 biotechnology field trials at the USDA Biosafety Conference at Kiawah Island, SC (November 1990). I can find no clear evidence of public demands for new regulation from the many recent U.S. public opinion polls. Indeed, they indicate that the U.S. public is "cautiously optimistic" about biotechnology and its prospects for improving health, agriculture, and the environment.

There are, however, certain special interest groups that repeatedly and routinely object to agricultural biotechnology applications. In fact, it is usually the same handful of individuals based in or around Washington, DC.

What is surprising is that certain federal and state agencies have provided an open door for special interest interference through regulatory approaches that replace risk-based triggers with scientifically insupportable process-based nets. These approaches sequester the products of new biotechnology as a function of perceptions of enhanced risks. Thus, we have public policy based not on the public interest in health and environmental quality, but on governmental perceptions of public perceptions of risk.

There is compelling reason to avoid framing biotechnology policy in response to anyone's description of public perceptions. Public perceptions, likes and dislikes fluctuate wildly. Worse, as a society, we seem to want and even demand dramatic events and solutions. There exists in the U.S. an unhealthy, almost anti-intellectual environment that fosters unrealistic demands for absolute safety and zero risk.

The Ice-minus controversy may have served at least one constructive purpose; it reveals the folly inherent in policy proposals that set biotechnology apart based largely on people's concern that genetic engineering seems "different". Government that responds to the shifting sands of public perceptions stands on a very poor foundation. Effective policymaking should focus on tangible issues of the public interest in maintaining human health and environmental integrity. Otherwise, the legacy of Ice-minus may well be American agriculture in peril.

Susanne L. Huttner, Ph.D. is Director, University of California Systemwide Biotechnology Research and Education Program, Molecular Biology Institute, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90024-1570, U.S.