Panel Backs Research Blocked by Court

A National Institutes of Health (NIH) advisory committee has handed NIH director James B. Wyngaarden a tricky political decision. On 1 June, the Recombinant DNA Advisory Committee recommended that two commercial companies be allowed to proceed with experiments involving release into the environment of organisms altered by gene splicing. One of the experiments is virtually identical to a university experiment that was halted by a federal judge 2 weeks previously (*Science*, 1 June, p. 962).*

The dilemma facing Wyngaarden is that if he accepts the committee's recommendation, it would establish a dual standard under which private companies can conduct experiments that university scientists are currently barred from carrying out. Yet the committee effectively told Wyngaarden it could find no scientific objections to the companies' proposals and therefore no valid reason to hold them up.

One of the experiments, proposed by Cetus Corporation, involves field-testing of plants that have been genetically engineered to resist diseases. Cetus has released no details of the experiment, and the committee considered it behind closed doors. The other, proposed by Advanced Genetic Sciences, Inc., involves spraying plants with modified bacteria in an attempt to prevent frost damage to some crops.

The Advanced Genetic Sciences experiment is virtually identical to an experiment proposed by Steven Lindow of the University of California at Berkeley, which the Recombinant DNA Advisory Committee approved a year ago. Lindow, who is funded by Advanced Genetic Sciences, is working with strains of *Pseudomonas syringae*, a bacterium that normally promotes the formation of ice crystals. In laboratory experiments, he has found that when a region of the bacterium's genome is deleted, it loses the capacity to provide a nucleus for ice crystals and plants colonized by these modified bacteria can tolerate moderate frost.

Lindow intended to spray these bacteria on a row of potato plants in a field in northern California to test their ability to provide frost protection. He was set to begin on 25 May, but on 16 May, Judge John J. Sirica ruled that NIH had not followed the correct procedures in approving the experiment and halted the work.

Sirica's ruling was a victory for Jeremy Rifkin, an author and political activist who heads the Washington, D.C.–based Foundation on Economic Trends. Rifkin sued NIH last year for failing to comply with the National Environmental Policy Act in approving the release of genetically modified organisms into the environment, and he later went back to court seeking to halt Lindow's experiment until his original suit is disposed of.

Sirica agreed to halt the experiment and told NIH not to approve any similar federally funded experiments until he rules on Rifkin's suit. He strongly suggested that he will eventually rule in Rifkin's favor, which would require NIH to produce an exhaustive analysis of the environmental effects of releasing genetically modified organisms into the environment before approving any such experiments by government-funded scientists.

But Sirica's ruling did not apply to experiments conducted by private companies, and, as it happens, Advanced Genetic Sciences had already put in a proposal to conduct experiments of its own extending Lindow's work to other crop plants. (Companies are not legally bound to get NIH approval for such experiments, but are submitting their proposals to the Recombinant DNA Advisory Committee on a voluntary basis. Although Lindow is being funded by the company, he is obliged to obtain NIH approval because the university receives federal funds.) Cetus also had submitted a proposal for field-testing plants.

When the committee began to consider the two proposals at its 1 June meeting, Rifkin, who was observing the proceedings, asked that the matter be postponed in view of Sirica's ruling. But committee chairman Robert Mitchell, an attorney from Norwalk, California, pointed out that the committee advises the NIH director, and it will be up to him to make the final decision. There is nothing to stop the committee from giving its views on the scientific aspects of the experiments.

Although the votes were taken in closed session, committee members say they were unanimous. In a lengthy open discussion of the Advanced Genetic Sciences experiment, it was pointed out that strains of *Pseudomonas syringae* with the gene deletion Lindow has achieved in the laboratory already exist in the wild. Moreover, Lindow has produced the same gene deletion chemically and sprayed these modified bacteria on plants—no formal approval is needed for such experiments because gene splicing is not involved—without any apparent problems. The committee was clearly convinced that the experiment presented virtually no risk.

(The fact that a strain similar to Lindow's modified organism exists in nature raises the question of why either Lindow or the company does not culture the wild type and use that for the experiments. Because no genetic engineering would be involved, no formal approval would be required. One committee member suggested that the answer is that naturally occurring organisms cannot be patented.)

The committee's votes essentially mean that the key scientific body has judged the experiments to be safe. But it is now up to Wyngaarden to determine whether they should get NIH's stamp of approval before the legal morass resulting from Sirica's ruling is cleared up.

In an earlier move, the committee approved a proposal to clone *Escherichia coli* genes that code for a toxin similar to Shiga toxin—which is involved in some forms of dysentery—in so-called P-3 containment conditions. Last year, the committee approved the experiment under maximum, or P-4, containment. The experiment had drawn Rifkin's fire because of the potential applications of such work to bacteriological warfare. But committee members judged the work to be highly important because of its potential for developing a vaccine, and the committee voted almost unanimously to lower the containment conditions because it was persuaded that the hazards are not as great as originally anticipated.—**COLIN NORMAN**

*The Recombinant DNA Advisory Committee currently advises Richard Krause, director of the National Institute of Allergy and Infectious Diseases. But Krause is leaving NIH on 30 June and authority to act on the committee's recommendations is being transferred to NIH director James Wyngaarden.