RANDOM SAMPLES

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German Gene Regs Hit Snag

You thought Germany's strict genetic engineering regulations were the world's toughest? Maybe so, but the controversial German gene technology law (*Science*, 31 January, p.524) is under fire from zealous European Community (EC) environment officials who claim that, in some respects, it's not strict enough.

The dispute centers on differences between the German law and two EC directives on the use of genetically engineered organisms, adopted in 1990. Member states must enforce EC directives with national legislation. And in August, the Brussels-based European Commission fired off a letter to the German health ministry detailing 14 discrepancies between the gene law and the EC rules.

Although German sources say that some of the gene law's alleged deficiencies are, in fact, covered by other regulations, one point is causing a major headache. Under the German law, applications to use genetically engineered organisms in research involve less bureaucracy than those relating to industrial processes. The EC rules are similar, except that the simplified procedure is applicable only to small-scale research projects (usually those using fermenters of 10 liters or less.)

If Germany is forced to change its rules so that some large-scale research projects are treated like industrial processes, scientists would face yet more bureaucratic hurdles—when most argue that the gene law is already strangling German genetics research.

German health officials, who have until mid-November to reply to the commission's letter, say they haven't yet decided how to respond. But research minister Heinz Riesenhuber has already said that he'd like the German government to press for changes to the EC directive. Most other EC states are still in the process of formulating their regulations, but of the few that have completed the process, only the Germans have fallen afoul of the commission.

JOHN D. CUNNINGHAM

Rusty wheat. Slow-rust gene may signal end of scourge.

Hard-Won Victory Over Wheat Blight

"Leaf rust" has been a scourge wherever wheat is grown ever since ancient Roman times. Only this year, the fungus, said to cost farmers around the world hundreds of millions of dollars a year, staged a major assault on the winter wheat crop in Kansas and Oklahoma.

But this week, following two decades of intensive research, the International Maize and Wheat Improvement Center in Mexico City has announced a "lasting cure." According to the center's director, Donald Winkelmann, "We've finally beaten leaf rust without the use of deadly chemicals."

The researchers found their answer in a Brazilian-grown wheat plant with natural defenses against leaf rust—defenses that work even against a disease that can attack repeatedly and can change form over time. The Brazilian strain was crossed with higher-yielding wheat varieties. Crops grown with the hybrid seeds have proved to be largely rust-resistant over a 12-year experimental period. And yields are high—"There's no genetic trade-off in yield potential," says Gene Saari, leader of Wheat Crop Protection.

Past efforts at developing resistant strains have foundered when the rust mutated to a new form. But scientists have identified a gene involved in what they call "slow-rusting," which means that the disease is kept at such a low level in plants that the fungus doesn't have the incentive to mutate. Now, according to a press release from the center, researchers say, "We feel safe in saying that leaf rust has been defeated."

The center is now distributing these strains to a network of more than 100 countries. The breakthrough is anticipated to benefit the Kansas and Oklahoma farmers, who lost up to 30% of their wheat crops to leaf rust this year because of last year's mild winter.

Combining Economics With Biodiversity

Three government agencies are starting an experimental program to encourage the conservation and exploration of rare plants and animals around the world. One goal is to look for compounds useful for new pharmaceuticals. Called the International Cooperative Biodiversity Groups program, it is making available $1.5 million this year for projects that will involve inventorying, collecting, and doing research on organisms from endangered ecosystems such as rain forests, coral reefs, and deserts.

The initiative has sprung from existing activities at the National Science Foundation, which has a large biodiversity program, the Agency for International Development, and the National Institutes of Health, where the National Cancer Institute has been collecting compounds to test for anticancer and anti-AIDS activity.

The new program is designed to encourage the use of indigenous knowledge and the training of local experts. Provisions on intellectual property rights are included so that countries will share in the profits from any commercial products that are developed from their flora and fauna. Last summer, consortia, which may include universities, nonprofit institutions, and industries, were invited to send in proposals. Gray Handley of NIH's Fogarty Center says a surprisingly high number of groups—more than 60 from around the world—have indicated they will apply. "We hope to make around three awards by late spring or early summer," says Handley.

Doctors Take on the Environment

Back in the early '80s, a group called Physicians for Social Responsibility (PSR) undertook to educate the public about the health impacts of nuclear war. The international movement it spawned won a Nobel Peace Prize in 1985. Now it's the '90s, and the doctors, like many others, have turned their attention to the environment. Their new message: Pollution, global climate change, and rain forest destruction are bad for you.

That was what more than 600 attendees heard at a symposium on "Human Health and the Environment," staged by PSR at the Massachusetts Institute of Technology over Columbus Day weekend. Speakers covered topics such as the health implications of ozone depletion; deforestation and the threat to plant and animal species that could be sources of life-saving drugs; seafood contamination from toxic chemicals in U.S. coastal waters; and environmental threats from population growth.

The conference was the kickoff to an education drive that will include symposia in a number of major cities. Physicians have been relatively silent on environmental matters, says psychiatrist and symposium codirector Eric Chivian. PSR is therefore working on plans to integrate environmental health and population issues into medical school curricula.