

tenance programs.

Robert Newman, president of Beth Israel Medical Center and an expert on drug abuse, disagrees with Rangel and other critics of methadone. Counters Newman: "Pre-tend everything they say about methadone is true. You're substituting one narcotic for another. It makes people robots. It narcotizes the masses. Or say the real problem is the opium fields in Burma. Or it makes money for doctors and pharmaceutical companies. Everything, even the most absurd things. . . . But let me ask them just one thing: Is it better or worse to turn people away and say, 'Go back to the streets and cram a dirty needle into your arm?' Because that's what we tell people by putting them on a waiting list."

New York State currently has 35,000 slots in its methadone maintenance program and 5,000 in its drug free programs. There are plans to open up another 1,500 slots in each program. But even this is not enough, says Newman.

Newman consults for the methadone maintenance program in Hong Kong, which offers the narcotic to people on demand. "All over Hong Kong, there are posters and signs with a phone number. 'If you need help with heroin, call.' They treat 10,000 patients a day. In the biggest clinic downtown, they see 2,000 people everyday. There's not a single nurse. It's run by housewives and shoe clerks. But they have never turned down a patient. They wouldn't dream of sending someone back out into the streets. When I tell them how we do things over here it sounds so idiotic that they think we must be having a language problem."

Whether the people of New York will support such programs as methadone on demand or a needle exchange is not yet known.

One could make an economic pitch. Methadone maintenance, which is often paid by Medicaid, costs between \$2000 and \$4000 per year. The total cost for treating an AIDS patient is almost \$100,000. But as Newman says, "There are a lot of reasons not to like junkies." In Goldstein's study on the Lower East Side, he found that about one-third of the addicts support their habits by theft. Says Newman: "I've never heard anybody say it, but I'm sure some people think that we should let them all die." The thought has been expressed. Des Jarlais remembers posters plastered all over lamp posts near his old office in Harlem. The signs read: "When will all the junkies die?" For those 100,000 addicts in New York who carry the AIDS virus, the answer is tragic. But Des Jarlais reminds a visitor: "The junkies won't all die. They'll just be replaced." ■ **WILLIAM BOOTH**

## ARS Prodded into the Open

The work of the Agricultural Research Service (ARS) has long been a source of ideas for farmers and their suppliers. Now, in something of a turnabout, an experiment proposed by industry is being tapped by ARS's research center in Beltsville, Maryland, as a training tool for the institution's scientists. One aim is to change researchers' attitudes about conducting field trials of organisms that have been altered with recombinant DNA techniques.

The Beltsville center is joining with Crop Genetics International (CGI) of Hanover, Maryland, in a field trial of a recombinant strain of the bacterium *Clavibacter xyli*. The modified organism contains the toxin-producing gene of another bacterium, *Bacillus thuringiensis*. CGI is betting the new organisms will prove superior to chemical pesticides in controlling European corn borers, which are present in much of the nation's corn-growing areas.

ARS's 7000-acre Beltsville research center will host one of three 1.5-acre field tests that the company hopes to initiate this spring. A second will be conducted at the company's 200-acre farm in Ingleside, Maryland, and a third in France.

*Bacillus thuringiensis* contains a protein that kills insects that feed on plants inhabited by the bacterium. It has been sprayed on crops to control pests for decades. CGI hopes to demonstrate that the altered bacterium, which expresses the toxic *B. thuringiensis* protein, will work the same way. The *C. xyli* bacterium resides in the xylem, a part of the vascular system containing vessels that transmit water along the length of the corn plant. In CGI's experiment, test plants will be individually inoculated with the modified bacterium. The company's goal, however, is to develop a process for inserting the recombinant bacterium into corn seeds.

Beltsville has become involved in the field trial at the invitation of CGI. Walde-mar "Wally" Klassen, director of the research center, says it presents his staff with a good opportunity to conduct fate and transport studies on an engineered organism. But the test, he says, may be even more valuable in breaking down the attitudinal barriers that have thus far kept Beltsville researchers from attempting similar outdoor experiments with recombinant organisms.

"There is a lot of resistance at Beltsville to doing these experiments," comments Klassen, noting that even Department of Agriculture administrators have argued against it. Part of the problem is traced to impatience and lack of familiarity with federal rules governing these experiments.

"Always, you have more problems, more obstacles to overcome when you want to try something that has been genetically modified," says George Papavizas, leader of the soil-borne disease laboratory. "You have to get an environmental use permit from EPA [Environmental Protection Agency]. It takes more time to prove that the organism is not harmful," adds Papavizas, who prefers to work with naturally occurring organisms.

Another factor that has inhibited field trials at Beltsville is their potential for controversy. "Some researchers are concerned that a field trial might upset the public and produce a fight—and perhaps land up in court with Jeremy Rifkin," says James L. Vaughn, research leader for the insect pathology laboratory.

Klassen, however, is determined to get his researchers to move their own work with engineered bacteria and plants out of the greenhouses and into the fields. "We are going to have to face up to this eventually," he says.

The agreement signed with CGI on 12 December calls for Beltsville research teams to study whether the altered *C. xyli* bacterium has an adverse effect on soil microorganisms and to confirm that it remains within the corn plant and does not migrate to other plants. CGI also will allow ARS scientists to use its bacterium in other research. Participation in the field trial, says Vaughn, will give researchers experience in obtaining EPA approvals for their own tests and in dealing with the public on experiments involving recombinant DNA organisms.

Congress established the Beltsville R&D complex, Klassen notes, as a premier facility and as a showcase for new agricultural technologies. There is no reason, he says, why emerging biological controls for crops should not be tested at Beltsville so long as federal guidelines are followed. Says Klassen, "I think it is better to do this here, than to sneak off to Sidney, Montana, or some place hard to get to." ■

**MARK CRAWFORD**