

prices for cereals and animals. The FEWS advisers have microcomputers, permitting them to store and analyze data and transmit it electronically to Washington. An objective of the program is to combine historical information with current data to create a database that will provide a firm foundation for agricultural reporting in general.

FEWS is trying to find its way to being an operational program at a time when the use of remote sensing faces a number of major policy and funding questions at USAID. FEWS has been financed by AID's office of foreign disaster assistance. But that funding runs out at the end of the year. The program has earned support in the agency's Africa bureau and won backers on Capitol Hill. However, the activity faces the universal jeopardy imposed by the Gramm-Rudman deficit reduction drive and survival is by no means assured.

In surveying the options, the agency is negotiating a contract with the National Academy of Sciences to evaluate National Oceanic and Atmospheric Administration satellite technology in comparison with other available technologies. Underlying the initiative is said to be a growing interest in the upper echelons of USAID management in the broad question of what the role of remote sensing in development should be.

That issue is the subject of a conference in West Berlin this month. The meeting grew out of the Vienna economic summit meeting of Western countries and includes representatives of developing nations as well. Enthusiasm for remote sensing on the part of African countries remains high, but the use of remote-sensing data in Africa has gone haltingly, particularly attempts to help African countries to take over responsibility for applications of remote sensing.

The reasons are multiple. Stiff costs, competition between proponents of rival technologies, a scarcity of technical manpower trained in remote sensing in the less-developed countries, and suspicions by African nations that information will be appropriated by hostile neighbors or by rich nations for economic or other purposes, all figure in.

Except in South Africa, there is still no ground-receiving station for satellite data in sub-Saharan Africa. African countries continue to depend on European and American sources for the products of remote-sensing technology. And the famine early warning systems established by the United States, international agencies, and European countries are operated essentially by and for the aid agencies. A major challenge for the donors is to find ways to make the transfer of technology that will break this pattern of dependence. ■ JOHN WALSH

Briefing:

Test of Tobacco Containing Bacterial Gene Approved

Rohm and Haas Co., a Philadelphia-based conglomerate, has obtained federal approval to conduct the first open-air field test of a genetically engineered plant containing a pesticide. The experiment involves a tobacco plant that has had a gene from an organism, *Bacillus thuringiensis*, added to its genetic structure. The gene triggers production of a protein that is toxic to a broad spectrum of caterpillars that feed on plant leaves.

The U.S. Department of Agriculture Animal and Plant Health Inspection Service, which notified the company on 26 August, okayed the experiment barely 2 months after the proposal was submitted to the agency for review. Ronald Meeusen, manager of Rohm and Haas' agriculture research program, observes that there are three decades of toxicology data on *Bacillus thuringiensis*. The bacterium has been used as an insecticide since the early 1900's and is not toxic to mammals, birds, and most insects, he adds.



Lunchtime. A moth larva feasts on tobacco.

In recent years, however, its use has been abandoned by commercial farmers because synthetic pesticides were more effective and less costly to use. It has remained the insecticide of choice for combating gypsy moth infestations in urban areas because of its low toxicity.

The incorporation of the *Bacillus* gene into the tobacco plant, in this case the Petite Havana strain, is expected to dramatically improve the efficacy of the toxin, says Meeusen. With traditional applications, the bacterium is only effective as long as it coats plant leaves. The bacteria are subject to being

washed off and they degrade quickly in sunlight, Meeusen notes.

If the field trials prove successful, the company aims to market major crop seed varieties including the gene addition by the mid-1990's. The company sees the gene addition being applied to a number of crop plants ranging from citrus to rice. It also hopes to develop softwood and hardwood tree hybrids that are resistant to pine borer and gypsy moth larvae. Rohm and Haas plans to conduct the test this fall on one-eighth acre plots in Homestead, Florida, and Cleveland, Mississippi.

Two other field tests of genetically altered tobacco are already under way. Agracetus, a joint venture of W. R. Grace & Co. and Cetus Corporation, is conducting research on a tobacco plant containing a marker gene that has no enhancing properties. Meanwhile, in North Carolina, Ciba-Geigy is growing a strain of herbicide-resistant tobacco. ■ MARK CRAWFORD

AID Withholds U.N. Population Funds

The Agency for International Development (AID), in the wake of vigorous lobbying by right-to-life advocates, has decided to withhold this year's \$25 million contribution to the United Nations Fund for Population Activities (UNFPA). The grounds for the action are the alleged widespread use of coerced abortions in China's population program. China uses its UNFPA money for demographic analyses and training for program managers, not for the provision of services. However, the agency cited a congressional amendment last year barring federal aid to groups that "support or participate in the management of" coerced abortion or sterilization.

The U.S. in the past has supplied about 27% of the UNFPA budget. Last year, \$10 million was withheld from the \$46 million earmarked by Congress. Because this year's cut-off was expected, UNFPA director Raphael M. Salas says an additional \$20 million has been pledged by other donors. AID officials say the \$25 million will be spent on other family planning programs.

The Population Crisis Committee says UNFPA is the only source of population assistance in some countries and calls the withdrawal an "unmitigated disaster. It says to the world that we are willing to dismantle our family planning programs abroad to keep happy a small, but noisy, anti-family planning constituency at home." ■

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