Pesticides to Be Judged on Leachability

The Environmental Protection Agency (EPA) has proposed a plan to prevent pollution of ground water that would require some pesticides to be regulated more severely in areas with porous soils. The proposal would be complex to implement, for it would place more onus on state governments, and it is expected to be controversial among pesticide manufacturers.

About 50 to 60 pesticides, many of them suspected carcinogens, have been detected in the ground water of 30 states surveyed so far, according to EPA. The concentrations, for the most part, have been low, but authorities are worried about the contamination because underground aquifers are the main source of drinking water for more than half the country, especially for rural populations. As evidence has increased that the contamination is widespread, local, state, and federal officials have been debating how to control the use of agricultural chemicals.

The proposal to regulate pesticides according to their leaching potential is part of a long-awaited plan announced by EPA on 25 February. The plan describes in broad outline, rather than fine detail, how EPA intends to control ground-water contamination by pesticides. The comprehensive proposal is being circulated for comment during the next 4 months.

The agency would use the registration approval process as a screen. As in the past, EPA would weigh the risks and benefits of the pesticide in its decision to approve, including their potential to cause cancer and to persist in the environment. But it would now also factor in the chemical's leaching potential.

Manufacturers of new pesticides are already required to submit to EPA information from laboratory tests and mathematical models about their product's ability to percolate through different soil types. The results provide a qualitative picture of a chemical's ability to leach. Under its proposal, EPA would use the information to decide whether to ban a chemical in vulnerable areas, according to John Moore, EPA's assistant administrator for pesticides and toxic substances. One problem with this provision, and with the control of ground-water pollution in general, is that soil types can vary from farm to farm, not only county to county and state to state.

States would be encouraged to take the lead in refining the EPA's own analysis and "tailor the conditions of pesticide use to specific local ground-water protection needs," the EPA proposal says. But if a state government defaults on its responsibilities, or if its territory is widely vulnerable to ground-water pollution by a particular pesticide, the chemical "won't be registered for use in that state," Moore said at a press conference.

The National Agricultural Chemicals Association is wary about this particular part of the proposal. "We'd be very concerned about banning or restricting the use of a pesticide based on lab data," says Thomas Gilding, the association's director of environmental affairs.

In another part of its plan, EPA proposed that the degree of protection placed on ground-water sources should be based on their current or potential use. A major bill introduced by Senator Dave Durenberger (R–MN) on the same day that EPA's proposal was announced would protect all sources of ground water equally, setting a goal of no degradation for all of them. Opponents say this approach is unrealistic and too expensive.

The Durenberger bill is one of several pieces of legislation being debated in Congress that would regulate ground-water contamination, but is the one most supported by environmental groups. Both the Durenberger bill and the EPA proposal put a high premium on actions to prevent contamination because ground water is extremely difficult to clean up once it is contaminated. "Without prevention, we're doomed to repetitive failures," Moore said. ■

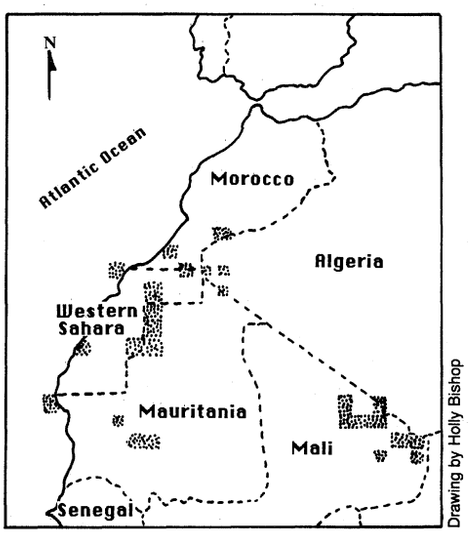
MARJORIE SUN

Locusts Find Prime Jumping-Off Place

Desert locust swarms first spotted on the Red Sea coast in early 1987 have caused rising concern as they moved all the way across Africa. The locusts found unusually favorable conditions in Mauritania and Western Sahara at the end of last year and could seriously threaten food crops in many areas of northern Africa if coming seasonal rains are good.

The migration has been tracked more closely than ever before by satellite and the information used to cue control efforts. These measures have been only partially successful, however, in part because the locusts passed through several areas where armed conflict deters control operations.

Testifying to the seriousness of the developing threat is a recent request for assistance against the locusts from the Polisario rebels engaged in a conflict with Morocco over Saharan territories. The request was passed on by a Dutch nongovernmental organization to the United Nations Food and Agriculture Organization (FAO), which is coordinating an international locust reporting and control effort in the region.



Swarms. *Shaded portions indicate areas where FAO reported desert locusts at start of the year.*

At this point, FAO says that Algeria is in the most immediate danger from the locusts, but countries in the Sahel region south of the Sahara are also at risk. Jelle U. Hielkema, remote-sensing officer with the agricultural division of FAO, says that conditions so congenial to desert locusts are seen in West Africa only once every 20 to 30 years. The last major outbreak was in 1954 when Morocco suffered devastating losses to its citrus harvest, a main export crop.

The latest cycle began when swarms were reported forming in January 1987 in breeding areas near the Red Sea. Saudi Arabia mounted a massive and generally effective control effort, but other swarms apparently moved westward through Sudan and Ethiopia, both of which have areas in which fighting obstructs countermeasures. In May and June, significant signs of locusts were reported further inland in Chad, where hostilities also limited local control efforts.

Hielkema says that the locusts plus "resident" locusts then migrated into summer breeding grounds in northern Niger and Mali and another generation was produced. By October, the migration resumed into Mauritania and Western Sahara. These countries are, as Hielkema says, "as dry as anywhere in the world." But satellite imagery in November and December showed a large bloom of vegetation, indicating a "high-