

Agricultural Firms Seek More Patent Protection

The chemical industry and environmental groups strike a deal that would lengthen the patent life on agricultural chemicals

WHEN the chemical industry recently agreed to reforms in federal law governing pesticides, it did so after a coalition of consumer groups held out an irresistible carrot. In trade for changes in pesticide law, the companies were promised by the coalition that it would not block their attempts to win from Congress more patent protection for their products (*Science*, 4 April, p. 16). The companies argue that they should be compensated for time lost while their products undergo regulatory review.

One environmental group, however, says that patent extension may be too high a price to pay for tightening up pesticide regulations. The Environmental Policy Institute, which did not join the 41 other groups in the coalition, argues that the industry has not proven its case and that patent protection would unfairly drive up production costs for farmers. But the institute has found few supporters.

Congress is likely to support patent extension, if the pesticide law is tightened. (The consumer coalition has convinced key legislators to link the two issues.) A bill to extend patent protection on agricultural chemicals and drugs for animals was approved on 11 March by the Senate subcommittee on patents; a similar measure has been introduced in the House.

The bills have significant backing. The Commerce Department and other federal agencies strongly favor patent extension. Representatives of national farm groups endorse the concept too, even though farmers may have to pay more for pesticides and animal drugs because the products will be under patent longer. The protection would provide companies with needed revenue to create new chemicals, says Leroy Watson, a Washington official of the National Grange, which has 400,000 members. In the long run, he contends, the farmer will benefit from safer, more efficient pesticides.

The passage of previous patent legislation also helps to pave the way. Two years ago, Congress ratified a measure to extend patents on human pharmaceuticals. Compared with that legislation, the current bills contain much more favorable provisions for agricultural products.

The National Agricultural Chemical Association makes many of the same arguments that the manufacturers of drugs for humans previously put forward to justify the need to extend exclusive marketing rights. The central issue, the association contends, is that companies should be able to recoup the 5 to 7 years of marketing time that are lost in testing and regulatory review. The extra revenues will enrich R&D programs at a time when fewer and fewer new chemicals are being created and, simultaneously, farmers need better ones. By ensuring a stronger research base, the American chemical industry can maintain its dominance in the international pesticide market, a position backed by a 1985 Commerce report, "A Competitive Assessment of the U.S. Herbicide Industry."

But the marketing life of some of the best-selling herbicides, whose revenues presumably would be most important in generating money for R&D, has not been shortened by regulatory review. Some older chemicals have been marketed the full 17 years allowed under a patent, such as two popular herbicides developed by Ciba-Geigy Corporation. This may have occurred because the chemicals were approved before more stringent federal laws were passed in 1978. Ciba's atrazine, one of the most widely used herbicides in the nation, was patented and approved for use in 1959 and sold exclusively for 17 years. The other Ciba herbicide, Dual, was patented and approved in 1976, so it too will be protected for 17 years.

Also, some companies have guarded their products by claiming second patents. Monsanto Company, for instance, was issued a second patent on Roundup, one of the company's main money-makers. (The first patent was issued for a specific use of the herbicide; the second covers the product itself.) When the second patent expires in the year 2000, Roundup will have had 26 years of patent life.

Even if these cases are the exception, reports by Commerce, Environmental Protection Agency, and the chemical association indicate that the industry is very healthy. Association figures show that for two decades industry R&D expenses as a percentage of sales have been stable as sales have in-

creased. Since 1967, R&D expenditures by basic producers in current dollars have hovered around 8 to 10 percent of sales, which in 1984 totaled \$4 billion, according to industry data. (In comparison, the drug companies spend about 12 percent of annual sales on R&D, according to the Pharmaceutical Manufacturers Association.) Since 1976, the number of new herbicides sold has remained fairly constant despite the more stringent 1978 regulations.

According to the Commerce report, the domestic herbicide industry is solidly ahead of foreign competitors. U.S.-based producers supply 90 percent of the herbicide used by American farmers and "U.S. exports exceed imports by a wide margin." America uses more herbicides than any other nation and is the world's biggest herbicide producer. Its closest competitor is West Germany, whose herbicide output is one-sixth U.S. production. "It seems clear that the United States holds a preeminent position in the world herbicide industry," the report says.

Senator Howard Metzenbaum (D-OH), who objects to patent extension legislation, asserts that its approval will stifle competition. The herbicide industry is dominated by only a few major companies, which produce the principal herbicides used on major crops such as corn and soybeans. "Why give more monopoly power to firms that are already highly concentrated?" Metzenbaum said at a September hearing held by the Senate patent subcommittee. "If you do not have competition because of the extension of the patent, somebody is going to pay the price." The price will be paid by the farmer and the American consumer, he contends.

Jack Doyle, agricultural director of the Environmental Policy Institute, praises the proposed agreement between the consumer coalition and the chemical industry to tighten pesticide regulations, but asserts that patent extension is unwarranted. "Health and safety considerations should be enough" to convince Congress to pass such legislation. "A lot of things have raised public consciousness that pesticide safety is a high priority issue," he says, citing the disaster at Bhopal, publicized incidents of pesticide contamination of food, and groundwater pollution.

But Nancy Drabble, an attorney with the Public Citizen's Congress Watch who is a lead negotiator for the consumer coalition, says that the gains to be made by changing the pesticide law "are worth the trade-off." For 14 years, environmental groups unsuccessfully pushed for change in the pesticide law. Patent extension finally provided an inducement important enough to industry to break that impasse, she said. ■

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