

Mycogen settles patent suit; cuts deals with Kubota, Lubrizol

■ Mycogen Corp. and Entotech Inc. announced recently that the two biological pesticide companies had settled two lawsuits brought by Entotech against Mycogen for patent infringement and patent interference.

Entotech's patents are based on the discovery by Professors Krieg, Huger and Schnetter, of a new insecticidal technology using the *Bacillus thuringiensis* (*B.t.*) strain toxic to beetles, including *B.t. tenebrionis*.

As part of this settlement, Mycogen has formally acknowledged the discovery of Krieg, Huger and Schnetter. It also has conceded that the original *Bacillus thuringiensis* 'San Diego' strain is actually the *B.t. tenebrionis*, and has therefore disclaimed several Mycogen patents directed to the use of *Coleoptera*-specific *B.t.* Other patents in this area have also been assigned to Entotech.

Mycogen paid \$1.3 million to Entotech

to resolve past claims in the lawsuits. For an additional \$3 million, Mycogen received a non-exclusive paid-up license under the Entotech patents in the U.S. and Canada.

In July, Mycogen announced it had signed an international licensing agreement with Kubota Corp., providing for the commercialization of bioinsecticide products in Far East Asia and Japan.

Mycogen and Kubota have been field testing products in Far East Asia since 1989. Registration is currently pending in Japan, Taiwan and Korea for MVP bioinsecticide, the first product that will be commercialized in Far East Asia.

MVP was recently approved by the Spanish Ministry of Agriculture, Fisheries and Food for commercial sale in Spain.

On August 27, Mycogen said it had agreed to form a partnership with the Lubrizol Corp. to buy Lubrizol's seed and plant science unit in a transaction valued

at \$135 million. Mycogen will have a 51 percent interest in the venture, and Lubrizol will have a 49 percent interest.

The companies will work together to develop genetically engineered biological crop pesticides and seed products. Mycogen said the transactions will strengthen its technology base and broaden its participation in the emerging biological crop protection industry.

Jeffrey Zekauskas, analyst with New York's First Manhattan bank, said the venture would help Mycogen because of the patents held by Lubrizol's Agri-genetics company.

According to Mr. Zekauskas, the deal allows Lubrizol's management to focus on its specialty chemical business, "which is most important for its long-term growth."

Lubrizol, based in Cleveland, makes and sells specialty chemicals for a variety of industries, and develops and produces crop seeds and specialty vegetable oils.

Biosys links with chemical firms for marketing opportunities

■ Biosys, breeder of the beneficial nematode, recently announced it had entered into a joint, long-term partnership agreement with Archer-Daniel-Midland's Bio Products Division.

The agreement—the company's third major joint-marketing move this year—gives Biosys access to significant additional large-scale fermentation facilities for the production of products beyond its core nematode-based biopesticides. According to Biosys, the agreement includes products it develops, or those it scales up and manages for third parties.

Under the new and existing agreements, Biosys technical personnel will work in conjunction with ADM personnel at ADM's new bioproducts manufacturing facility in Decatur, Ill., to provide production technology and expertise and management of the fermentation and downstream processes. Biosys mass produces its beneficial nematodes, insect-killing micro-organisms that constitute the active ingredient in the

company's biological pesticide products, at the ADM facility. Products that Biosys can produce under the new agreement include biopesticides and other industrial fermentation products which are not competitive with ADM's own product lines.

Dr. Mark Whitacre, president of ADM's BioProducts Division, says ADM is hoping to prosper from other products Biosys will bring to ADM's facility.

The agreement with ADM marks the second time this year that Biosys has taken up with larger chemical concerns. Its first quarter report told of an agreement with Ciba-Geigy, Ltd., of Basle, Switzerland, which granted exclusive worldwide marketing rights to Ciba-Geigy for all agricultural and horticultural markets excluding the U.S., and the turf market in Japan. Under the agreement, Ciba-Geigy is to provide \$5 million of research and development funding through 1993—a drop in any research program coffer—to support development of Biosys' beneficial nema-

tode technology.

Ciba-Geigy Corp., U.S., currently markets Exhibit biological larvicide for control of turf and ornamental insect pests.

Other Biosys products are marketed in the U.S. and Europe under the brand names BioSafe Lawn and Garden Insect Control (marketed by Chevron's Ortho unit); and Sanoplant and Boden-Nutzlinge for homeowner use.

BioVector and BioSafeN biological insecticides are used for a broad range of agricultural applications.

The biggest news about Biosys—at least as far as investors are concerned—may have nothing to do with nematodes. Craig Torres, writing in the *Wall Street Journal* of April 30, noted the company could represent a takeover opportunity. According to Torres, these various marketing agreements give Archer-Daniels, Ciba-Geigy and Ortho equal time in evaluating the nematodes' customer appeal over standard chemical control products.