



James Beck, a Northern California electronics engineer, developed the Patchen technology in the early 1990s. He founded Patchen, currently a subsidiary of NTech, in June 1992 with an initial capitalization from private investors. He then designed a spraying system integrating the technology, began to establish a dealer organization, and applied for U.S. patents.

Another investor financed perfection of foreign patents in Europe, Australia, Brazil, Canada and several other countries. The first U.S. patent was issued in 1994. Additional patents followed in 1995, 1996, 1998 and 2000.



In mid-1995, Beck sold Patchen and the technology to Deere & Co., the world's largest manufacturer of farm machinery. Deere's objective was to move the product through its dealerships in the form of fixed-boom sprayers. The emphasis of the sprayer was on weed control in row crops such as corn, soybeans, fresh vegetables, orchards, vineyard and others. The operating plan was to be a supplier to original equipment manufacturers ("OEMs") of spray systems.

Overall market conditions and internal corporate restructuring caused Deere officials to get out of the fixed-boom sprayer market, at the end of its 1998 October fiscal year. Deere sold Patchen to Rainbow Agricultural Services, a regional Deere distributor and major customer for the Patchen products, owned by the Mayfield family of Ukiah, California. Rainbow has since operated Patchen as an independent corporation with John Mayfield, Jr., Rainbow's primary owner, as CEO.

The first order of business was to begin exploring the company's patent positions, along with accomplishing some reengineering and retooling. Patchen completed a number of academic testing programs started by Deere and then set up a national sales rep organization. Patchen identified two probable patent infringements.

One was in Australia, by a user of a similar technology patented there, using sunlight rather than LEDs as a light source. Rather than enforce its position legally, Patchen bought worldwide rights to Dr. Warwick Felton's technology as a defensive move in return for a small royalty on sales in Australia. The Felton technology is inferior to Patchen's in part because of the reliance on natural light. Felton, principal inventor of the Australian technology, currently is using the Patchen technology in advanced crop improvement research in Australia. The second possible infringement, of more concern and interest than the Felton patents, was research being conducted at Oklahoma State University, one of the nation's premier agricultural teaching and research institutions. Mayfield corresponded with OSU personnel and traveled to Stillwater in 1999 to discuss primacy of the Patchen patents, continuing research being conducted at OSU and commercialization of the work being done there. As a result of these discussions, Mayfield and OSU entered into a joint-development agreement. NTech Industries, Inc., was formed in early 2001 to be the innovator, developer and marketer of proprietary technology for sensor-based agricultural nutrient and herbicide delivery systems. Patchen is the operating subsidiary of NTech. Weedseeker®, GreenSeeker™ and Patchen® are Trademarks of NTech Industries, Inc.

On Oct. 15, 2001, NTech and OSU signed a License Agreement and a Master Research Agreement. A key feature of the arrangement is that any related intellectual property or know how that results from the Research Agreement automatically flows into the License Agreement, which provides for royalties to the university. The OSU relationship and agreements are integral to NTech's business plan.