The University of California's Strawberry Licensing Program

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ABSTRACT

The strawberry improvement program located at the University of California, Davis focuses on breeding cultivars for the strawberry industry in California, yet today it supports the majority of production of fresh-market strawberries globally. Around the world, UPOV-compliant Plant Breeders' Rights (PBR) are the most common form of IP protections sought by University of California (UC) to protect its strawberry cultivars. Inside the U.S. and Canada, cultivars are licensed on a nonexclusive basis directly to nurseries. Outside of the U.S. and Canada, UC relies on business partners, referred to as "master licensees," as intermediaries. A master licensee is provided with exclusive rights within a defined territory that includes the right to issue nonexclusive sublicenses to nurseries within that territory. Overall, a three-tier royalty structure is utilized, with growers inside California paying the least, growers in the U.S. outside of California and in Canada pay slightly more, and all other growers pay even more, a percentage of which is shared with the master licensee. The ultimate future of the UC strawberry breeding program is tied to the continued development of competitive cultivars, but the team is highly skilled and, partly due to the licensing program, funding is stable.

1. INTRODUCTION

The strawberry improvement program located at University of California, Davis[1] focuses on breeding cultivars for the California strawberry industry. University of California (UC) strawberry cultivars are developed for the cool coastal Mediterranean and arid subtropical regions of California and have become the basis of a global fresh-market strawberry industry. UC cultivars represent 75%–80% of the production of the US$1.3 billion California strawberry industry and represent 50%–60% of worldwide production. The UC strawberry licensing program is active in the United States, Europe, Asia, Africa, South America, and Australia and generates an annual licensing revenue stream of US$4.5 million. This case study summarizes patent portfolio development, licensing strategy, and income trends for this successful university licensing endeavor.

2. IP PORTFOLIO DEVELOPMENT

Newly developed UC strawberry cultivars are protected in the United States under U.S. plant patents administered by the U.S. Patent and Trademark Office (PTO). A U.S. *plant patent* is available for asexually propagated plant species while *plant variety protection certificates,* administered by the U.S. Department of Agriculture (USDA), are reserved for the protection of sexually propagated species. Outside counsel is utilized by UC to secure U.S. plant patents for strawberry cultivars.

In ex-U.S. jurisdictions, U.S.-based patent counsel directs the prosecution of intellectual property in cooperation with ex-U.S. counsel. Counsel outside of the United States is often identified by the licensee in the respective terri-

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tory. Worldwide, the process of obtaining IP for plant cultivars is a specialized area of IP prosecution and this reduces the pool of capable attorneys in a given territory. Additionally, plant-based IP is a new legal construct in some territories where UC seeks protection for strawberry cultivars. These factors complicate the process of identifying competent, cost-effective representation and emphasize the importance of in-country licensees in selecting legal representation. Ex-U.S. licensees are ultimately responsible for bearing the cost of IP prosecution in their territory. Since their business models depend on strong IP, they are motivated to aid in the search for capable legal representation. In some territories outside the United States, UC has identified non-attorney plant IP specialists, but in most cases it relies on the services of registered patent attorneys that also specialize in plant-based IP.

UPOV-compliant Plant Breeders' Rights (PBR) is the most common form of IP sought for UC strawberry cultivars. (The Union for the Protection of New Varieties of Plants [UPOV] has set forth standards for licensing new plant varieties.) Although UC and its licensing partners worldwide seek UPOV-compliant PBR for UC strawberry cultivars, such protection is unavailable in some territories. As a result, the UC licensing program and its master licensees are active in expanding the scope of protection for plants in some countries worldwide. A successful approach has been to build grassroots support for plant IP by coupling access to cultivars with availability of IP for those cultivars. For example, in China a strawberry industry organization successfully lobbied governmental authorities to add strawberry to the list of protectable species. This action was encouraged by UC's licensee for China. With PBR now available for UC strawberry cultivars in China, the Chinese strawberry industry gains access to UC cultivars, which leads to rural economic development in China, and UC licensing expands into the Chinese market. In Egypt, UC strawberry cultivars represent Egypt Plant Patent Nos. 1, 2, and 3, as a result of aggressively pursuing access to the nascent Egyptian plant patent system. In Brazil, UC strawberry cultivars are among the first protected strawberries under the new system of protection.

The decision to file or to engage in expanding the scope of IP for a given territory is made jointly between UC and the respective master licensee. The primary criterion is the expected value of the future licensing revenue stream. UC rarely files its strawberry cultivars "at-risk" (that is, without a licensee already identified in that jurisdiction). Master licensees are required to pay the cost of obtaining and maintaining both IP protection and commercial registration.

3. STRUCTURE OF DOMESTIC AND INTERNATIONAL LICENSING

In the United States and Canada, cultivars are licensed on a nonexclusive basis directly to plant nurseries. Nurseries are licensed the right to propagate plants and to sell the propagated daughter plants to fruit growers. Strawberry growers annually replant fruiting fields, so a royalty is collected annually. Royalties are assessed on a per-1,000 plants (purchased) basis rather than on the basis of sales.

Outside of the United States and Canada, the UC relies on business partners as an intermediary in support of the strawberry licensing program. These partners, referred to as master licensees, are provided with exclusive rights within a defined territory. The master licensee is granted the right to issue nonexclusive sublicense agreements to nurseries within the territory. In exchange for this exclusive right, the master licensee supports IP development and provides enforcement of IP rights including access to the local court system, as required. Critical responsibilities of the master licensee are market development, technical support, and the transfer of production know-how. In addition to being the local eyes and ears of UC's licensing function, the master licensee facilitates testing and evaluation of promising new cultivars. In exchange for the services provided by the master licensee, UC agrees to share a percentage of collected royalties.

A three-tier royalty structure is utilized. Growers of UC cultivars in California currently pay, in royalties, US$3.00/1000 plants. Growers

in the United States outside of California and in Canada pay US$4.50/1000 plants. Outside of the United States and Canada growers pay US$10.50/1000, a percentage of which is shared with the master licensee. In addition to the royalty component described above, a research fee is collected to directly support new cultivar development. The research fee of US$1.00/1000 plants entitles the licensee to a lower royalty rate (rates stated above). The licensee receives a US$1.50 reduction in royalties for the US$1.00 research fee contribution.

The structure of the strawberry licensing program is driven in part by UC's presence as a public institution in the state of California. Nurseries and fruit growers in California are given preferential treatment, in addition to the reduced royalty rates for California. California-based nurseries (licensees) are the only nurseries in the worldwide licensing program that have access to all licensed markets. The sales territories of non-California nurseries are limited to a defined region. After the initial release of a new UC strawberry cultivar, its use is restricted to California for the first two years. This policy is designed to benefit fruit growers in the state who are concerned about competition in their own markets from UC cultivars grown abroad.

UC strawberry plants are shipped worldwide from California nurseries. To facilitate monitoring of worldwide strawberry plant shipments, an electronic, Web-based system is currently being developed with the goal of providing real-time shipping information for UC and its master licensees worldwide. Licensed nurseries will electronically declare sales before shipment. This preshipping electronic notification enables master licensees to accept or reject a proposed sale based on the intended use of the plant material and the licensing status of the recipient. The system is expected to reduce the occurrence of out-of-compliance shipments and provide the supplying nursery with assurance that its shipments are consistent with UC licensing policy worldwide.

4. INCOME TRENDS

For the latest fiscal year, gross annual income for the strawberry licensing program was US$4.7 million. Gross income increased from US$3.4 million in 2000 due to the combination of a rate increase in 2000 and market expansion in Europe, North Africa, South America, and Mexico. Approximately 45 percent of annual income is generated by California sales. Five percent derives from sales in the United States outside of California and in Canada. The remaining 50% of licensing income is derived from sales outside the United States and Canada. The largest non-U.S. markets, by country, are Spain, Mexico, Morocco, and Australia (from largest to smallest, within this group). In addition to royalty income, total research fee collection now totals US$650,000 annually and represents the lion's share of funding for the strawberry breeding program at UC Davis. This amount contrasts with the US$350,000 support from the California Strawberry Commission, the second largest contributor to the breeding program.

After 2007, income is expected to increase based on a 2006 rate increase and further market expansion. Over the next five years, market expansion is anticipated in Brazil, Northern Europe, China, and Turkey. Additionally, new licensing strategies are expected to boost income from established markets as master licensees will be given the opportunity to *price-to-market* in the high-value territories of the European Union and elsewhere.

The ultimate future of the program is tied to the continued development of competitive cultivars. The UC breeding team is highly skilled, and funding for the endeavor is stable. As a result, the UC breeding and licensing programs are positioned for success for at least the next 10 years.

5. CONCLUSIONS

The strawberry licensing program of the University of California provides a clear example of how intellectual property protection by a public sector institution enables the global dissemination of innovative results by providing an economic stimulus to those who adopt the technology. It also allows those who benefit most directly from the technology to help sustain financially the program that serves them.

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1 Further information on the strawberry licensing program is available at www.ucop.edu/ott/strawberry/welcome.html.