Planting the seeds of change

As investment in new plant varieties surges, plant-centric IP laws around the world enter the spotlight. **Michael R Ward** and **Elizabeth Freeman Rosenzweig** explore the options

Humans have been developing new types of plants since the dawn of agriculture. Reflecting the unique and crucial role of plants in human society, specialised versions of intellectual property (IP) law have been developed particularly for new plants. Although this niche pocket of law has existed for decades, there has recently been a surge in interest in protecting plant IP. This new interest is largely due to recent advances in plant biology laboratory techniques, such as the ability to sequence and edit genes with unprecedented speed and accuracy, which are ushering in a new era of crop development.

To shed light and facilitate discussion on the dynamic world of plant IP, Morrison & Foerster recently hosted an international plant IP seminar[1] in San Francisco, California. Over 50 attendees from both law firms and industry traveled from around the world to attend the event and learn about protecting plant IP. Speakers detailed the various different types of IP protection available for plants in the US, Canada, Mexico, and the European Union, and highlighted recent developments as well as key points to consider when enforcing those rights.

In the US and around the world, when someone creates a new plant variety, there are a host of legal tools available to protect and enforce the IP surrounding the new plant. In this way, plants are similar to other inventions, discoveries, or creations; inventors and owners of new plant varieties can use patents, trademarks, and trade secrets to protect their inventions.

However, plants are unlike other inventions in that they can often self-propagate, and are also inherently tied to previous lineages. In recognition of this, there are specialised types of IP that have been crafted specifically for plants. Thus, in addition to traditional utility patents, an inventor of a new plant may also seek protection through plant patents, Plant Variety Protection (PVP) certificates, and/or Plant Breeders' Rights (PBRs). These may be further layered with trade secrets and/or trademarks, creating a web of intellectual property attuned to the distinct needs of plants.

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Trade secrets

Perhaps the oldest form of IP, trade secrets can be used to protect some aspects of plant-based inventions around the world, such as new plants, plant traits, and breeding methods. When deciding whether to protect a new invention as a trade secret or to seek a patent, an inventor might weigh several factors, including the length of time for which the invention is expected to be valuable and whether the invention could be the subject of reverse engineering.

As with other trade secrets, the strength of plant-based trade secrets generally hinges on the owner of the trade secret maintaining strict confidentiality procedures. In the US, the Defend Trade Secrets Act, which took effect in May 2016, provides a federal cause of action for trade secret violations. Similarly, the EU recently enacted a Trade Secrets Directive. In Canada, however, unlike in the EU and the US, there is no single comprehensive act defining trade secrets, but the rules in each province generally mirror those in other countries.

Trademarks

Trademarks can be a powerful way to protect IP through brand recognition and through their long shelf life: if handled correctly, a trademark can last forever. For plants, however, there is an important wrinkle when considering trademarks: the varietal designation.

Whereas a trademark is a brand name that remains exclusive to the owner even after patent expiration, a varietal designation disclosed in a patent is a name that others can use once the patent on that variety expires. Thus, when developing a new plant variety, it is important to choose a varietal designation that is distinct from the trademark under which the variety will be sold. For example, a particular varietal of mandarin oranges is sold under both of the competing brand names Cuties and Halos. In contrast, "Honeycrisp" is now a generic name and cannot be trademarked because it was used as the varietal designation in the now-expired patent on the original apple tree variety.

Trademarks function similarly in the US, Canada, Mexico, and the European Union. However, enforcement of trademarks in Mexico can be difficult, and having the collaboration of the relevant plant breeders is crucial for protection.

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In the US, plants may also be protected by plant patents, utility patents, and PVP certificates. While they are not mutually exclusive, each type of protection has its own advantages and disadvantages, and some may be more or less suitable for a given plant invention. Within utility patents, different types of claims have been granted for plants: some claim formats cover only a single variety, similar to a plant patent, while other claim language may broadly cover a particular trait across many varieties.

The scope of PBRs and the patentability of plants are not the same around the world. In Canada, plant traits and breeding methods are patentable, but plants themselves are only indirectly patentable as cells and/or genes. However, the Canadian PBR Act was recently amended to broaden breeders' rights with extended terms and scope, but the exact rules and guidelines have not yet been published.

Mexico excludes only non-genetically modified plant varieties from patentability. However, there is a subtle caveat where maize is concerned: although claims to genetically modified plants are allowed in Mexico, maize is such a culturally sensitive topic that a patent on genetically modified maize may ultimately have limited value in the country.

The European Union has particular regulations for organisms that are considered "genetically modified". Plants are only patentable if they result from mutagenesis or other technical intervention(s) in the genome, not if they are the result of traditional breeding. Furthermore, although there is a one- to four-year disclosure grace period for variety protection, there is no such grace period for patents, although there is a research exemption and a limited breeder exemption. However, a ruling on CRISPR-edited plants from the Court of Justice of the European Union in July of 2018 may have implications for what types of breeding techniques produce plants that fall under the EU's GMO Directive.

Enforcement of IP

Case law specific to plant IP is not as exhaustive as for other legal fields, but there are several recent cases from around the world that highlight how it is being viewed by the courts.

Two interesting examples from the US are the Supreme Court case *Bowman v Monsanto* and the Northern District of California case *UC v California Berry Cultivars*. *Bowman v Monsanto* defined patent exhaustion as it applies to seeds: although patent owners generally cannot prevent third parties from using patented products after they have been sold, the Supreme Court held that reproduction of patented seed through planting and harvesting is not "using" the patented seed, but "making" it. Thus, patents in such cases are not exhausted, and may be enforced post-sale to prevent seed reproduction.

UC v California Berry Cultivars demonstrates how IP may be enforced when plant breeding spans international borders. In that case, strawberry breeders from UC Davis wanted to start their own company using varieties that they considered to be their own intellectual property, but were ultimately found to have infringed on plant patents owned by the university. The breeders had imported seeds from Spain, where crosses had been made using mother plants that were protected by UC-owned plant patents. Because plant "parts" are covered by those patents, UC was able to argue successfully that the seeds were "part" of the patented mother strawberry plant, and that importing them therefore infringed on UC's plant patents.

Finally, the Supreme Court of Canada case *Monsanto Canada Inc v Schmeiser* is notable as one of the few examples of Canadian case law on plant IP. In that case, Monsanto Canada sued canola farmer Percy Schmeiser for having knowingly stored, planted, and cultivated seeds containing Monsanto's patented Roundup Ready genes without a licence. In this case, the court held that there is no "farmer's privilege" in Canadian patent law, and that Schmeiser used the presence of the Roundup Ready gene as a form of insurance, even if he did not apply Roundup to them, and that he thus infringed on Monsanto's patents.

Footnote

1. The international plant IP seminar was made possible by Morrison & Foerster and Seed Central. Speakers included Michael Ward, partner and head of the patent practice group at Morrison & Foerster; Mark Whitaker, partner at Morrison & Foerster; Jennifer Lee Taylor, partner and chair of the Trademark Group at Morrison & Foerster; Cory Ellison, patent agent at Morrison & Foerster; Katherine Dutmer, general counsel for life science industry in the Netherlands; Enriqueta Molina, associate at Santamarina + Steta; Julie Gauvreau, partner at Lavery Lawyers; Rufus Pichler, partner at Morrison & Foerster; Matthew Chivvis, partner at Morrison & Foerster; and Fleur Tuinzing-Westerhuis, counsel at Houthoff in the Netherlands.

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