

# Intellectual property protection and enforcement for plant innovations in the United States

Ms. Kitisri Sukhapinda – Regional IP Attaché for Southeast Asia

Ms. Elaine Wu – Senior Counsel, Office of Policy & International Affairs, USPTO

UNITED STATES  
PATENT AND TRADEMARK OFFICE



# Overview

- Various forms of protection for plant innovation in the U.S.
  - Plant patents
  - Utility Patents
  - Plant variety protection certificates
- New legislative developments
- Enforcement of plant-related intellectual property

# IP protection for plants in the United States

<b>U.S. Patent and Trademark Office (USPTO)</b>	<b>USDA-Plant Variety Protection Office (PVPO)</b>
<ul style="list-style-type: none"><li>● <b>Utility Patent</b><ul style="list-style-type: none"><li>– All technologies</li></ul></li></ul>	<ul style="list-style-type: none"><li>● <b>Plant Variety Protection Certificate (PVPA)</b><ul style="list-style-type: none"><li>– Seed reproduced varieties</li><li>– Edible tubers</li></ul></li></ul>
<ul style="list-style-type: none"><li>● <b>Plant Patent (PPA)</b><ul style="list-style-type: none"><li>– Asexually reproduced plants</li></ul></li></ul>	



# Plant Patent

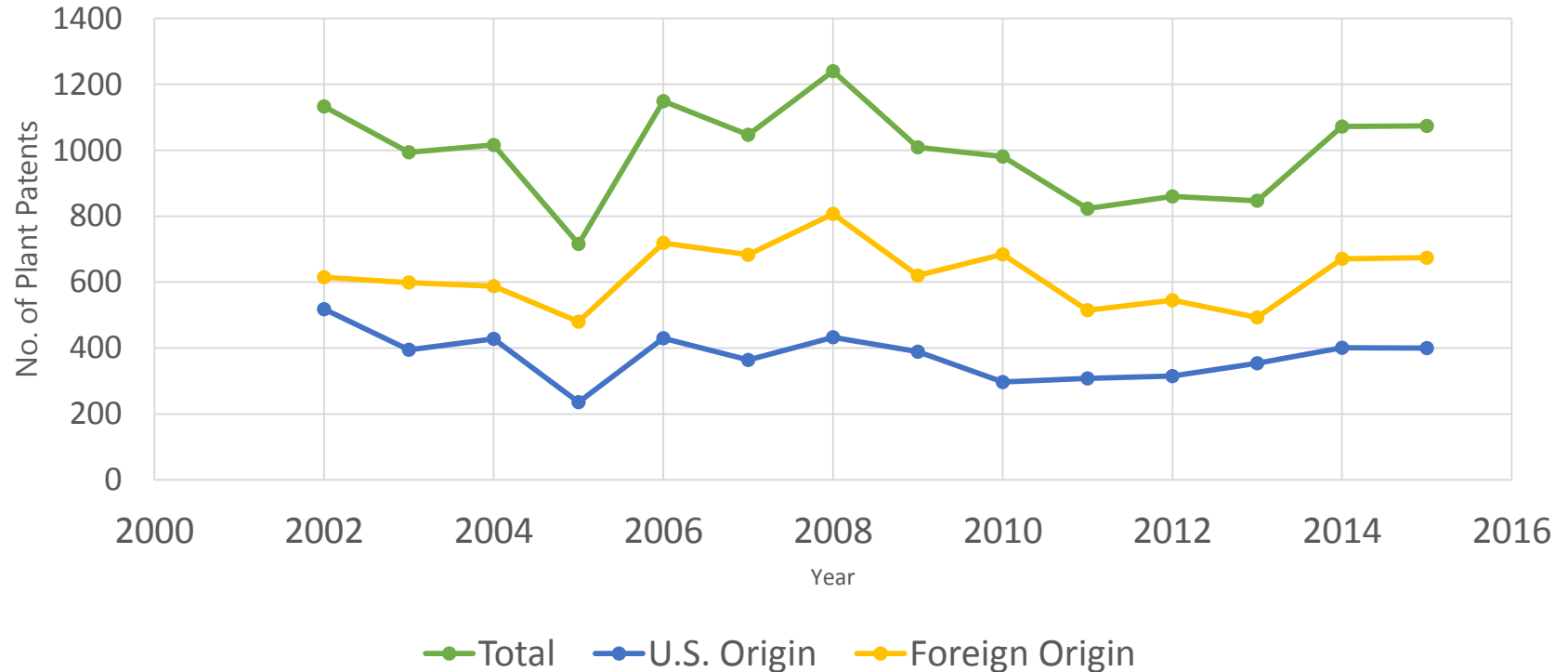
## Basic Requirements

- Plant is new and distinct from other known varieties
- Plant has been asexually propagated
- Basic patentability standards
  - Novelty
  - Utility
  - Non-obviousness
  - Written Description

# Plant Patent

- **Asexually reproduced**
  - rooting, cuttings, grafting, budding, division, slips, layering, bulbs, rhizomes, runners, corms, tissue culture, etc.
- **Examples**
  - grape vine, apple and pear trees, chrysanthemum plant, algae and fungi (mushroom)
- **20 year term from date of filing**
- **Right to exclude others from making, using, selling, offering for sale and importing the plant, or any of its parts**
- **Protects a single plant and its asexual progeny**

# Plant Patents Granted (by Year of Grant)



# Utility Patents

- **Basic Requirements**
  - Utility
  - Novelty
  - Non-obviousness
  - Written Description
  - Enablement
  - Definiteness
- **20 year term from filing date**
- **Right to exclude others from making, using, selling, offering for sale, and importing the claimed invention**
- **Requires maintenance fees**

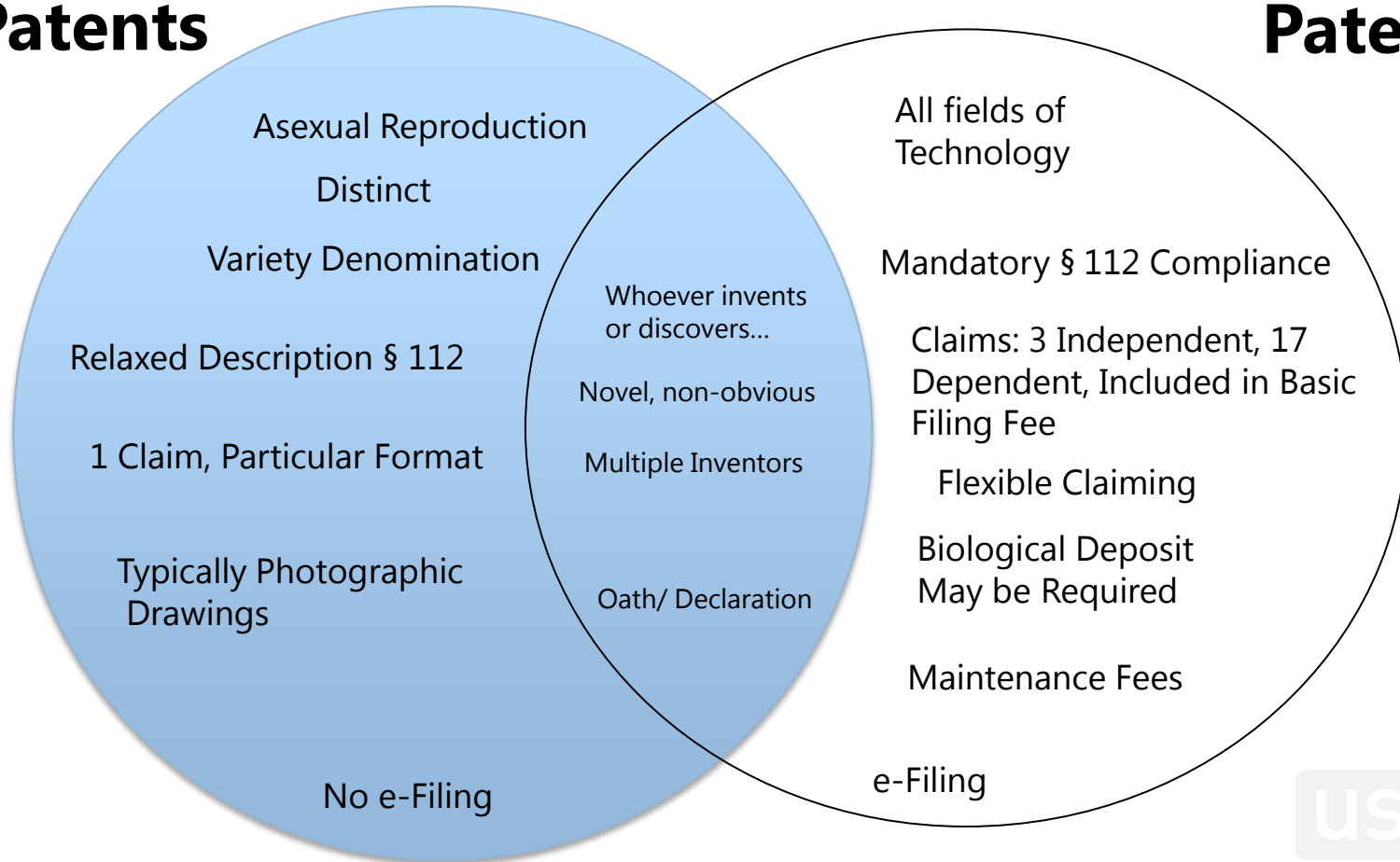
# Utility patent protection for plants

- **Can be used to protect:**
  - Modified plant genes, proteins, products
  - Transgenic plants phenotype (i.e., observable characteristics)
  - Class of varieties with specific traits
  - Plant variety
  - Plant parts – cells, tissues, etc.
  - Methods of producing or using plants/varieties

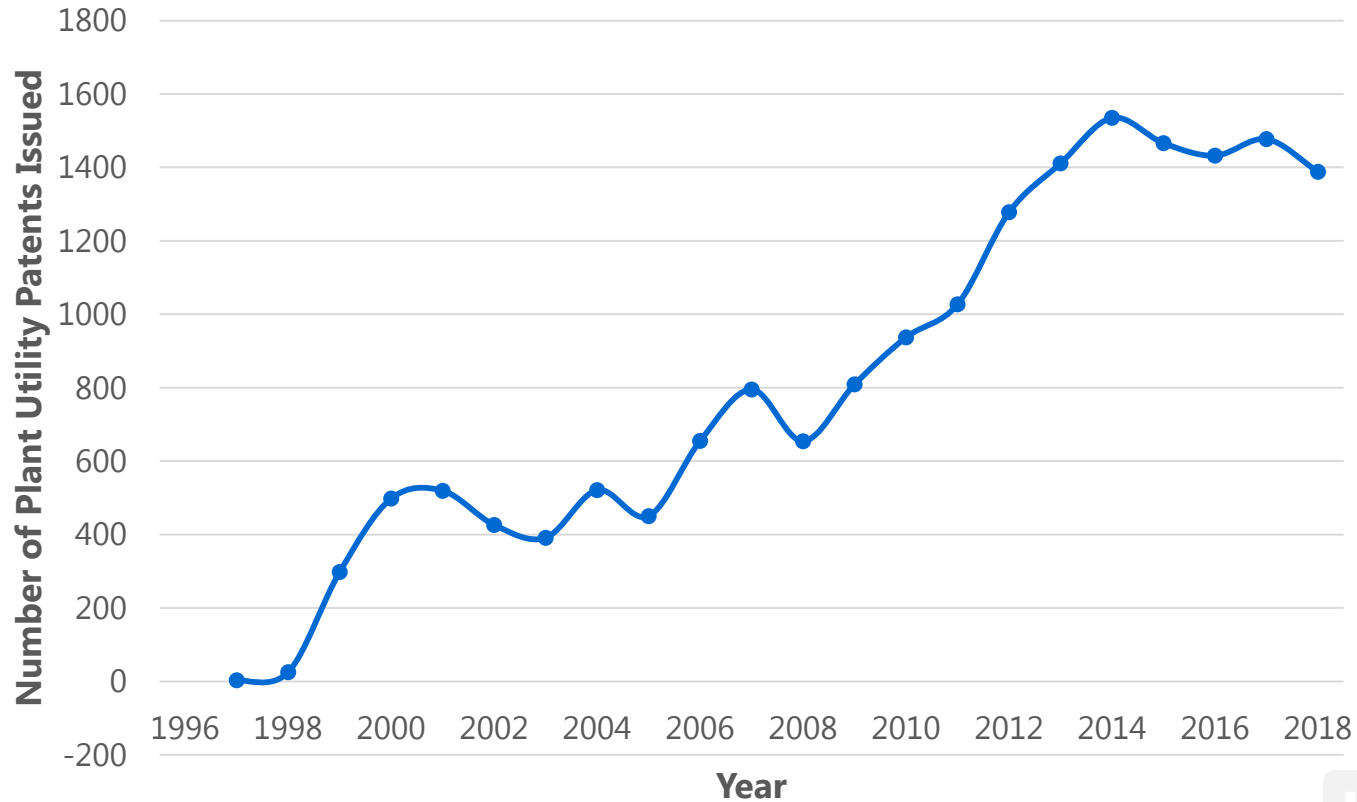


# Plant Patents

# Utility Patents



# Plant Utility Patents



Note: Data above was obtained from the USPTO's PALM system, and reflects plant utility patents issued during these years for the following USPC class and subclasses:

- 435/410-431, 453, 468-470
- 800/260-323.3



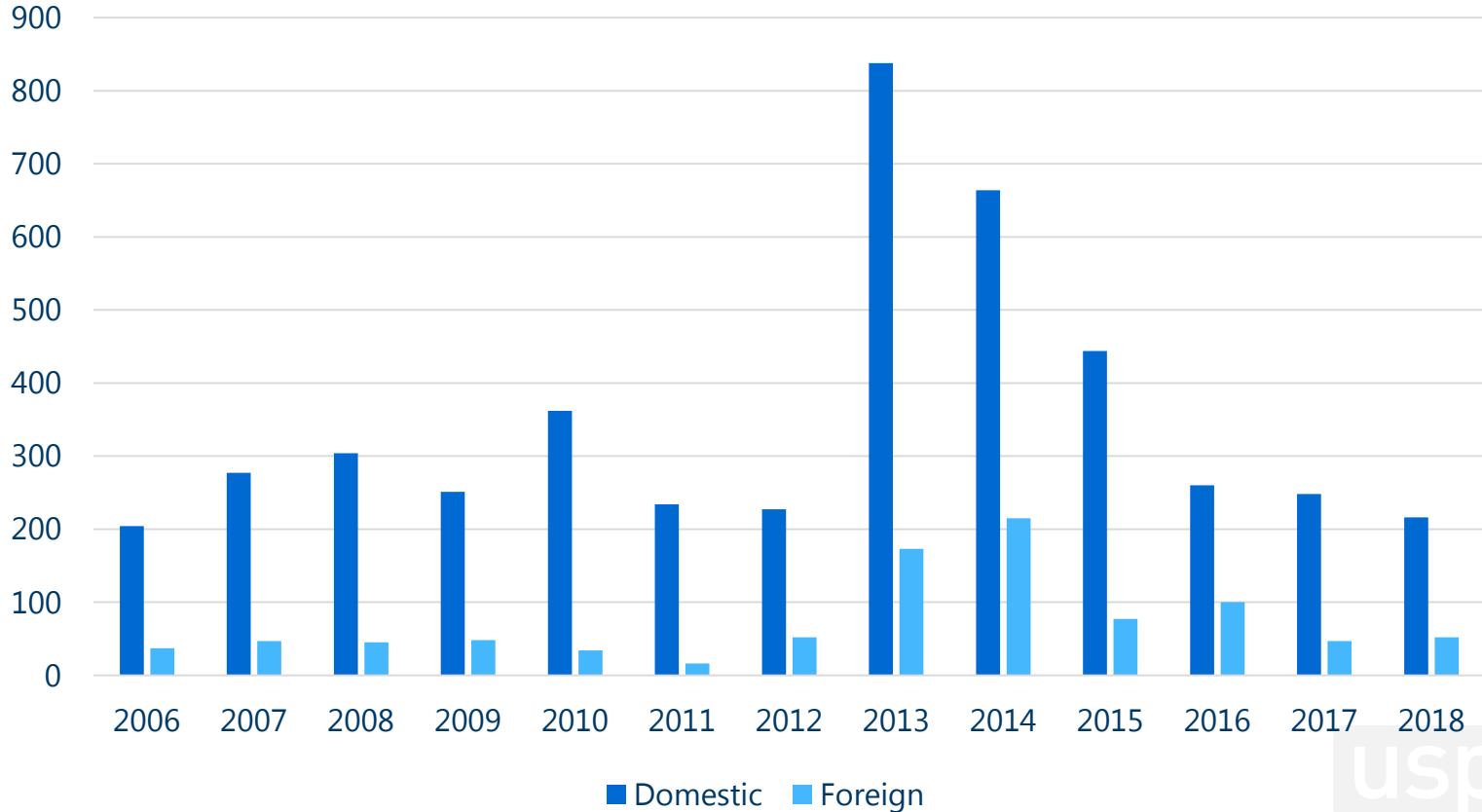
# Plant Variety Protection

- Requirements
  - New, distinct, uniform, stable
  - Plants must be sexually reproducible
  - Denomination
  - Deposit of propagation material

# Plant variety protection - rights granted

- 20 year term from issue (25 years for trees or vines)
- Rights to exclude others from
  - Selling or marketing
  - Conditioning or stocking
  - Offering for sale or reproducing
  - Importing or exporting
  - Using the variety to produce (as distinguished from develop) a hybrid or different variety

# PVP certificates granted- domestic vs foreign origin



# New development: 2018 Farm Bill

- The Plant Variety Protection Act was extended to cover asexually propagated varieties, effective March 21, 2019

(a) In general

The breeder of any sexually reproduced, **tuber propagated, or asexually reproduced** plant variety (other than fungi or bacteria) who has so reproduced the variety, or the successor in interest of the breeder, shall be entitled to plant variety protection for the variety, subject to the conditions and requirements of this chapter, if the variety is-

- (1) new,...
- (2) distinct,...
- (3) uniform,...; and
- (4) stable,...

# Patent enforcement

- Patent infringement (generally):
  - Making or using the patented invention without authorization from the patent owner
  - Offering to sell or selling within the U.S. the patented invention without authorization
  - Importing into the U.S. the patented invention
  - Actively inducing infringement of a patent

# Plant variety enforcement

- **Plant breeder's certificate infringement (generally):**
  - Selling, exposing, exchanging, and marketing the protected variety without authorization of the plant breeder
  - Offering or soliciting for sale without authorization
  - Multiplying, conditioning, importing, exporting and stocking the variety without the authorization of the plant breeder



# Patent infringement case

- *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred, Int'l, Inc.*, 534 U.S. 124 (2001)
  - **Facts:**
    - JEM resold bags of Pioneer's patented hybrid seed that have a limited label license that allows only the production of grain and/or forage.
    - Pioneer filed a patent infringement suit against JEM.
    - JEM argued in its counterclaim that sexually reproducing plants, such as Pioneer's corn plants, are not patentable subject matter, and that the Plant Variety Protection Act and the Plant Patent Act set out exclusive statutory means for protecting plants.
  - **Court decision**
    - Newly developed plant breeds fall within the subject matter of 35 U.S.C. Section 101 of the Patent Law and neither the Plant Patent Act nor the Plant Variety Protection Act limits the scope of Section 101 coverage. Dual protection is allowed.



# Plant Variety Protection Act case

- *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179 (1995)
  - **Facts:**
    - Farmer Winterboer bought two novel seed varieties protected under the Plant Variety Protection Act of 1970 from Asgrow Seed Company.
    - Winterboer resold the second generation of seeds produced to third-party farmers.
    - Asgrow filed a lawsuit against Winterboer for infringement of its Plant Variety Protection Act certificate.
  - **Court decision**
    - U.S. Court of Appeals for the Federal Circuit held that the Plant Variety Protection Act permitted Winterboer an unlimited right to resell Asgrow's protected seed.
    - U.S. Supreme Court reversed and held that Winterboer was prohibited from selling Asgrow's novel seeds to other farmers beyond the amount Winterboer would need to grow on his own farm.

# Trade Secrets Case

- *Pioneer Hi-Bred International v. Holden Foundation Seeds, Inc.*  
(35 F.3d 1226, 1994)
  - **Facts:**
    - Pioneer Hi-Bred developed a top selling parent line of seed corn.
    - Pioneer sued Holden Foundation Seeds for misappropriating some of Pioneer's genetically modified seed lines that were protected by trade secrets.
  - **Holding:**
    - The district court found for Pioneer and awarded it over \$46.7 million in damages.
    - The appeals court affirmed the district court's decision for Pioneer Hi-Bred, finding that Pioneer had taken every effort to keep the seed lines a trade secret, and that Holden had obtained the seed lines by improper means.

# Plant patent infringement case

- **University of California Davis strawberry case**
  - District court found that two retired researchers from the University of California at Davis (UC Davis) willfully infringed strawberry plant patents owned by UC Davis.
  - The court also found that the researchers used plant material owned by UC Davis to develop berries for a corporate breeding firm they established.
  - The parties to the case eventually reached a settlement agreement whereby the researchers would return certain breeding materials to UC Davis and give up \$2.5 million in future patent inventor royalties.



# THANK YOU

Kitisri Sukhapinda

[kitisri.Sukhapinda@trade.gov](mailto:kitisri.Sukhapinda@trade.gov)

Elaine Wu

[elaine.wu@uspto.gov](mailto:elaine.wu@uspto.gov)