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PATENT AND TRADEMARK OFFICE**

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Protection of Plant-Related Inventions in the United States

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TOPICS

- **Types of Intellectual Property Protection for Plants**
- **Some details on each type of protection**
- **Some Statistics**
- **UPOV**
- **Benefits**

Three Types of Plant Protection:

**U.S. Patent
and
Trademark Office**

**USDA-Plant Variety
Protection Office**

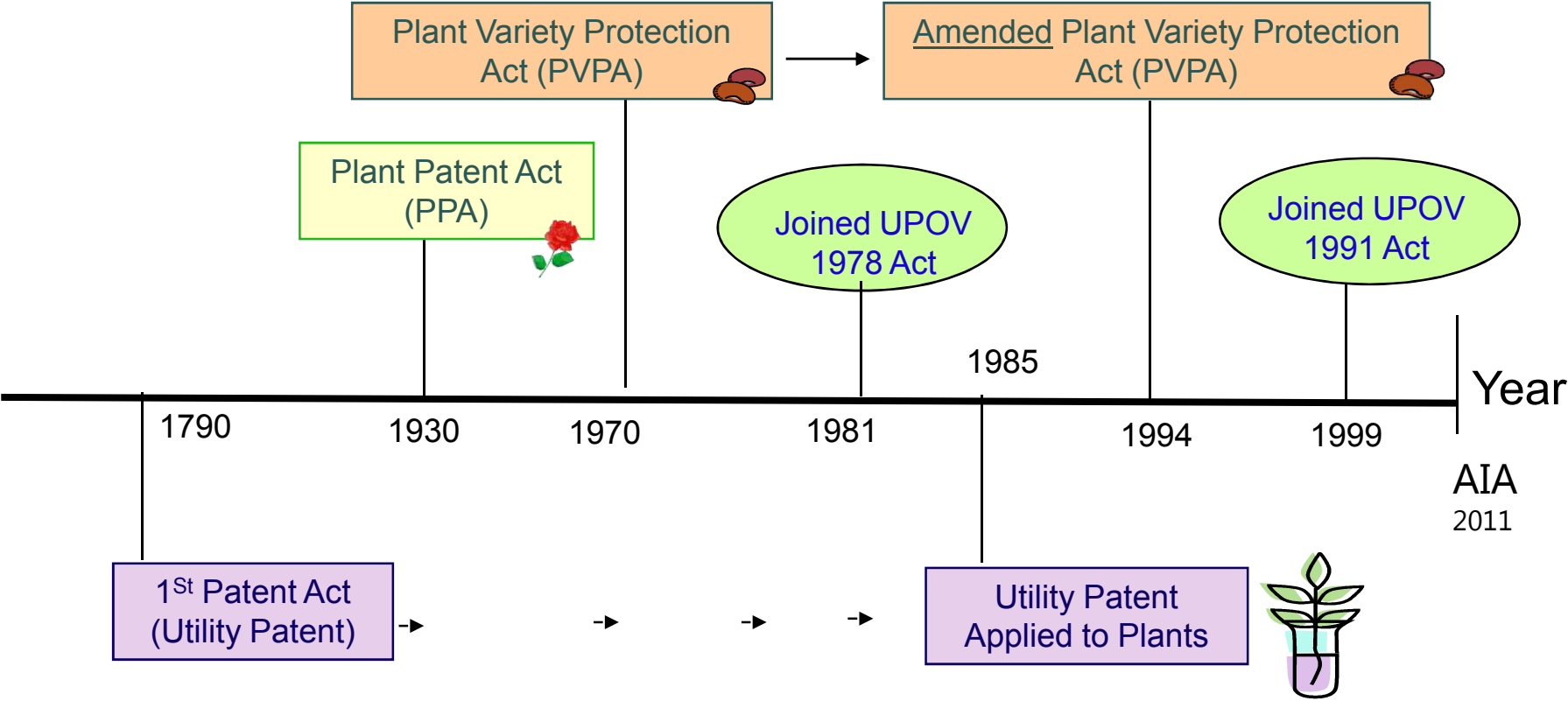
- **Plant Patent (PPA)** 

- **Utility Patent** 

- **Plant Variety Protection** 

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Long History of Plant Protection





PLANT PATENTS

Plant Patent

- **Plant Patent Act, 1930**
- **United States Patent and Trademark Office (USPTO)**
- **Requirements: plant is new, distinct, asexually reproduced**
 - rooting, cuttings, grafting, budding, division, slips, layering, bulbs, rhizomes, runners, corms, tissue culture

Plant Patent

Basic Patentability Standards

- **35 USC § 101, Utility**
- **35 USC § 102, Anticipation (Novelty)**
- **35 USC § 103, Obviousness**
- **35 USC § 112, Written Description**

Plant Patent

- **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
- One claim
- Protects a single plant and **asexual** progeny

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Plant Patent

- **Examples: grape vine, apple tree, azalea plant, chrysanthemum plant, pear tree, rose plant**
- **Include algae and fungi**
- **Not bacteria**
- **Not edible tubers**





UTILITY PATENT

Utility Patent: History

- Diamond v. Chakrabarty, 447 U.S. 303 (1980)
 - Held living things were indeed patentable
- Ex Parte Hibberd, 227 USPQ 443 (PTO Bd. Pat. App. & Int. 1985)
 - Ruled that seeds, plant tissue cultures, and the plant itself are patentable subject matter under the utility patent statute
- J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International, Inc., 534 U.S. 124, 60 USPQ2d 1865 (2001)
 - Held newly developed plant breeds fall within the scope of §101, and neither the PPA or PVPA limits this coverage

Utility Patent

- **20 years protection from date of filing**
- **Right to exclude others from making, using, selling, offering for sale, and importing the claimed invention in the granting territory**
- **Basic patentability requirements: utility, new, non-obviousness, written description, enablement, best mode**
- **Possible to protect a class of varieties with specific traits, plant parts and methods of producing or using plant varieties**

Commercial Agricultural Products Overview

PRODUCT	GENETIC MODIFICATION	PURPOSE
tomatoes, peas, peppers, tropical fruit, broccoli, raspberries, melons	controlled ripening	Allow shipping of vine-ripened tomatoes; improve shelf life, quality.
tomatoes, potatoes, corn, lettuce, coffee, cabbage family, apples	insect resistance	Reduce insecticide use.
peppers, tomatoes, cucumbers	fungal resistance	Reduce fungicide use.
potatoes, tomatoes, cantaloupe, squash, cucumbers, corn, oilseed rape (canola), soybeans, grapes	viral resistance	Reduce diseases caused by plant viruses and – since insects carry viruses – reduce insecticide use.
soybeans, tomatoes, corn, oilseed rape (canola), wheat	herbicide tolerance	Improve weed control.
corn, sunflowers, soybeans, and other plants	improved nutrition	Increase the amount of essential amino acids, vitamins or other nutrients in the host plant.
oilseed rape (canola), peanuts	heat stability	Improve processing quality; permit new food uses for healthier oils.

Sources: The Hale Group/Decision Resources, Inc., *Food Processing* and *BIO/technology* magazines

Basic Patentability Standards

- 35 USC § 101, Utility
- 35 USC § 102, Anticipation (Novelty)
- 35 USC § 103, Obviousness
- 35 USC § 112, 1st Paragraph, Written Description
- 35 USC § 112, 1st Paragraph, Enablement
- 35 USC § 112, 2nd Paragraph, Definiteness

Utility v. Plant Patents

- An invention support both a utility patent and a plant patent so long as the subject matter protected by the two patents is not identical.
- Utility Patent- may be useful where invention is not limited to a particular variety or where method claims are desired
- Plant Patent- may be useful where it is difficult to meet the written description or enablement requirements of a utility patent



PLANT VARIETY PROTECTION

Plant Variety Protection Act (PVPA)

- **Plant Variety Protection Office (PVPO), USDA**
- **Encourages the development of new varieties of sexually reproduced plants**
- **Provides protection to those who breed, or discover and develop them**
- **Applies to plants:**
 - **Sexually (seed) reproduced**
 - **Tuber propagated**
 - **F1 hybrids**

Requirements for Plant Variety Protection under PVPA

A Variety must be:

- **New** (available less than 1 year in the US; less than 4 years in a foreign country)
- **Distinct** from all other varieties
- **Uniform** (all plants look alike)
- **Stable** (reproduces true to type)

*Applicant submits evidence for NDUS

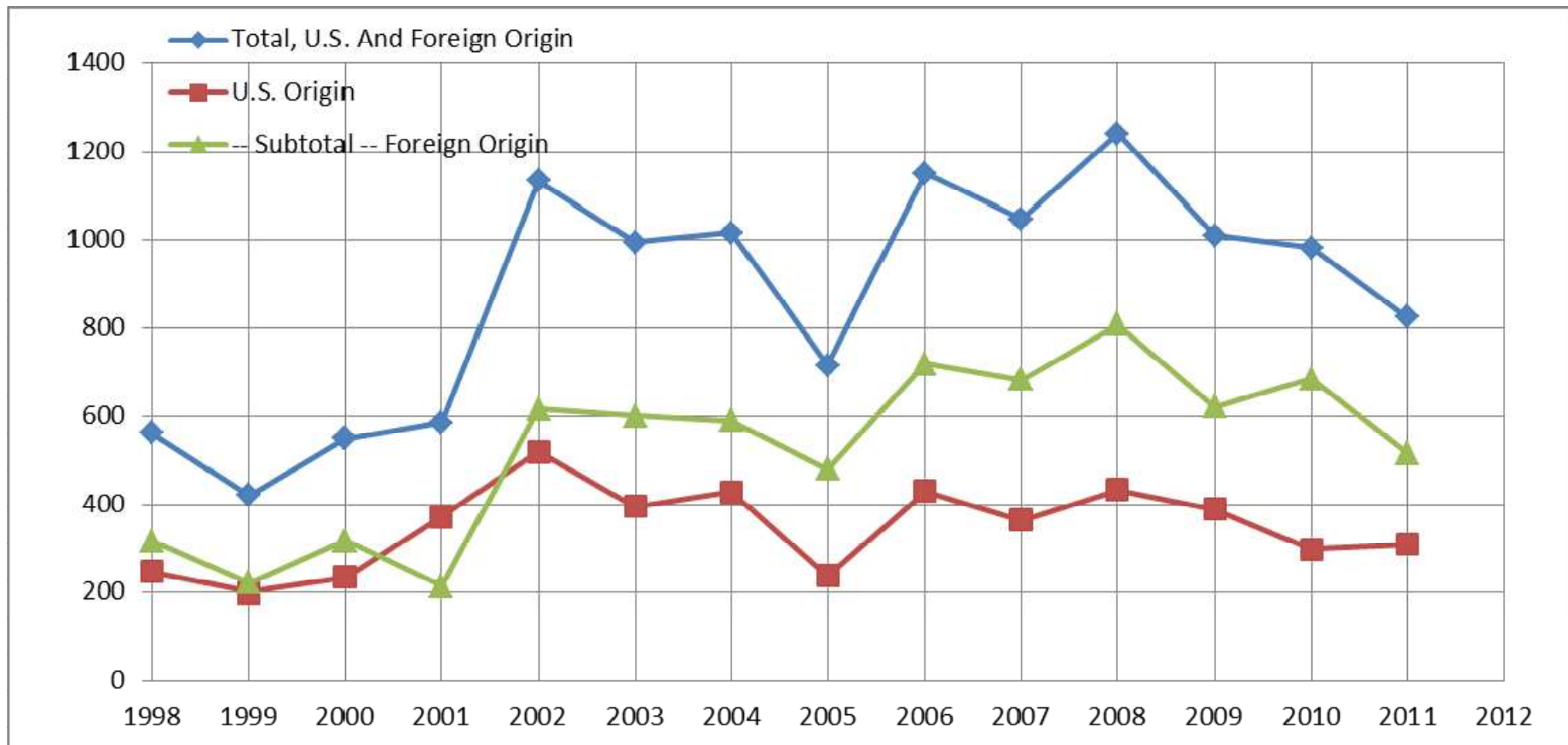
PVP Rights Granted

- **Term: 20 years (25 years for trees or vines) from issuance of the certificate**
- **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**



↑ New Plant Varieties

Number of Plant Patents Granted (Distributed by Year of Grant)



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**UPOV: INDEPENDENT
INTERGOVERNMENTAL ORGANIZATION**

**The International Convention for the
Protection of New Varieties of Plants
established in 1961**

**The International Union for the
Protection of New Varieties of Plants**

**Union internationale pour la protection des
obtentions végétales**

The mission of UPOV

- is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.
 - The UPOV Convention provides the basis for members to encourage plant breeding by granting breeders of new plant varieties an intellectual property right: the breeder's right.



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DL Courses: registration open

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GENIE Database



UPOV Lex



Plant Variety Database (PLUTO)

Welcome

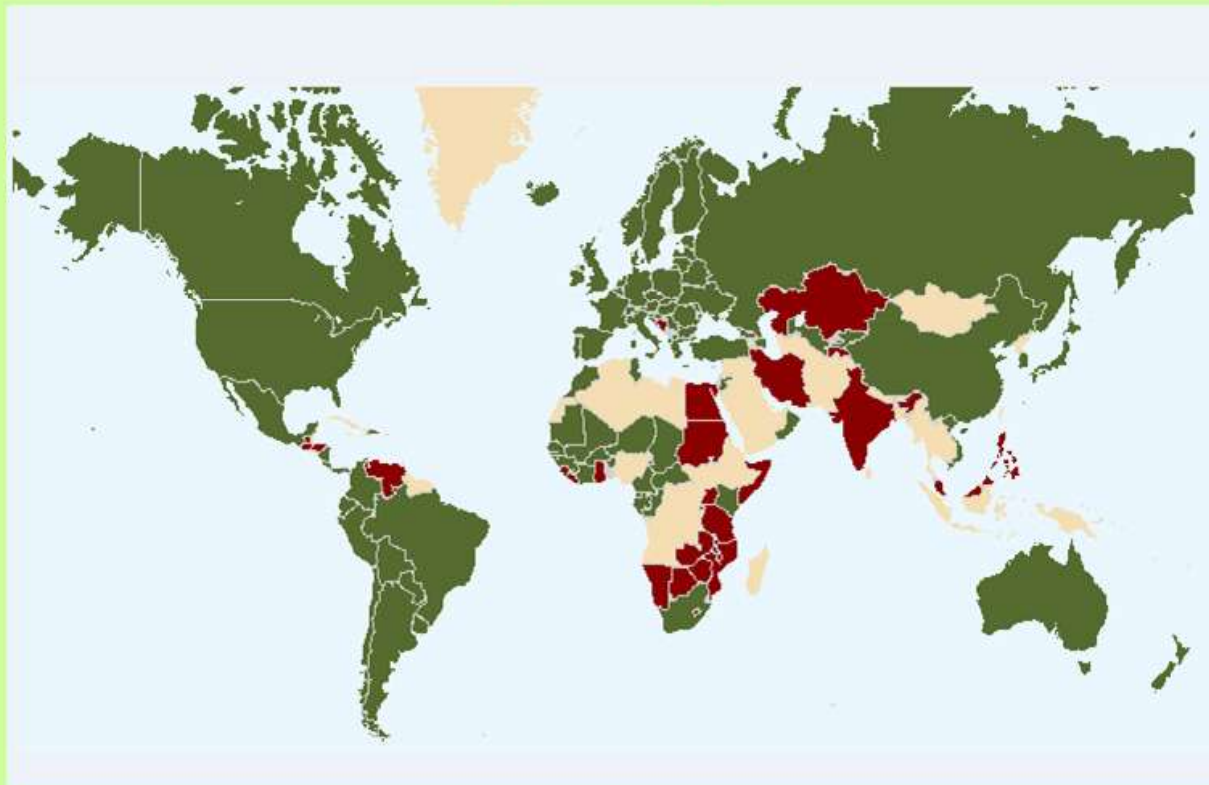
The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization with headquarters in Geneva (Switzerland).

UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and it was revised in 1972, 1978 and 1991.

UPOV's mission is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.

News & Upcoming Events

73 members of UPOV (green)
16 initiating States & 1 organization
(brown)



The boundaries shown on this map do not imply the expression of any opinion whatsoever on the part of UPOV concerning the legal status of any country or territory





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Article 5

Conditions of Protection

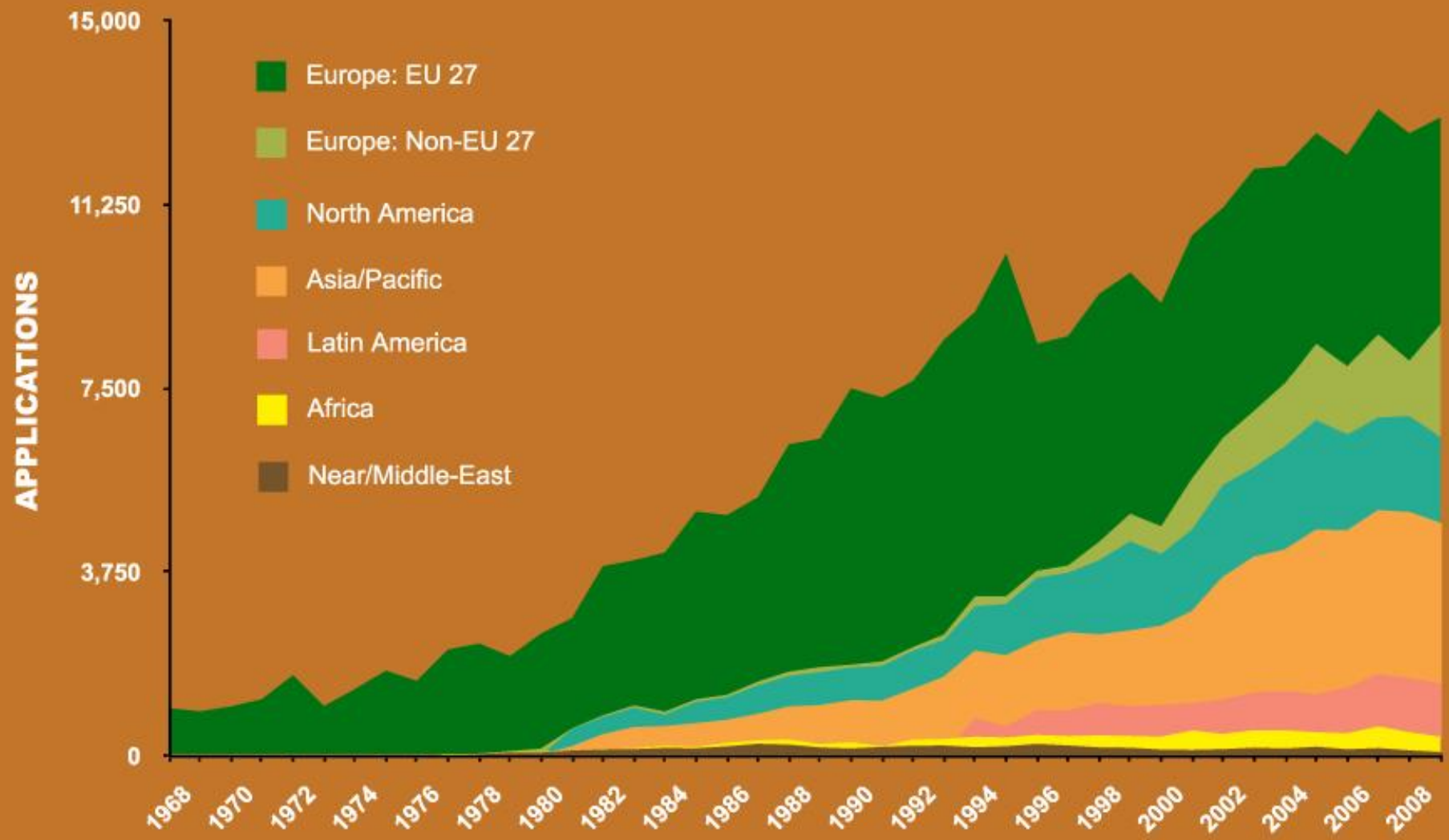
(1) [Criteria to be satisfied] The breeder's right shall be granted where the variety is

(i) new, (ii) distinct, (iii) uniform and (iv) stable.

(2) [Other conditions] The grant of the breeder's right shall **not be subject to any further or different conditions, provided that the variety is designated by a **denomination**,that the applicant complies with the **formalities****

and that he pays the required fees.

Applications for plant breeders' rights by region:



Benefits of new varieties of plants

- ↑ **Improve yield and crop productivity**
- ↑ **Provide alternative renewable energy**
- ↑ **Increase farmers' income**
- ↑ **Ensure food security**
- ↑ **Respond to climate change**
- ↑ **Improve health and nutrition**
- ↑ **Expand trade and economic growth**

Questions?

- <http://www.uspto.gov/web/offices/pac/plant/index.html>
- <http://www.uspto.gov/web/offices/pac/utility/utility.htm>
- <http://www.ams.usda.gov/PVPO>

THANK YOU!



