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Perspective of a National Breeders Association

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Secretary General

Train-the-Trainer Course on
Plant Variety Protection under the UPOV Convention
Geneva, May 12th 2016

Setting the scene: the Plant Breeding industry today



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1. Challenges:

- Rise of world population + diet changes + energy consumption going up
- Limited arable land, less water, degrading soils and climatic change
- Preserving biodiversity

2. Opportunities:

- Scientific and technical improvements (i.e. new plant breeding techniques)
- Increasing global seed market and international seed trade (from 1,000 to 12,000 M US\$)

3. Increasing number of regulations

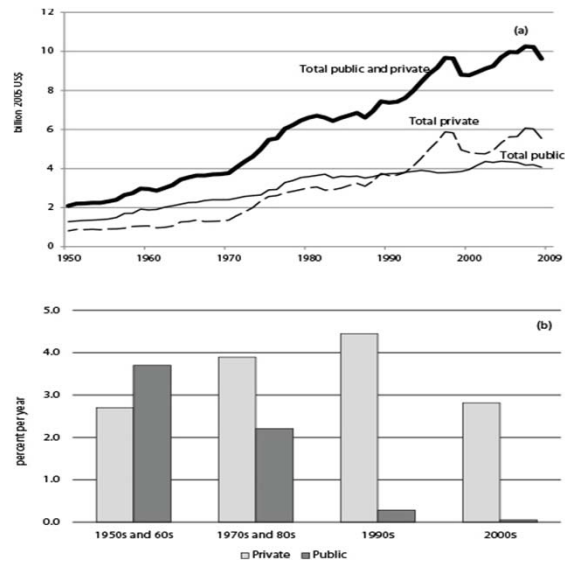
4. Increasing number of multinational companies

5. Reduction of public investments

Public and private investment in food and agricultural R&D



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SOURCE: Dehmer and Pardey, 2014

Contributions of Plant Breeding

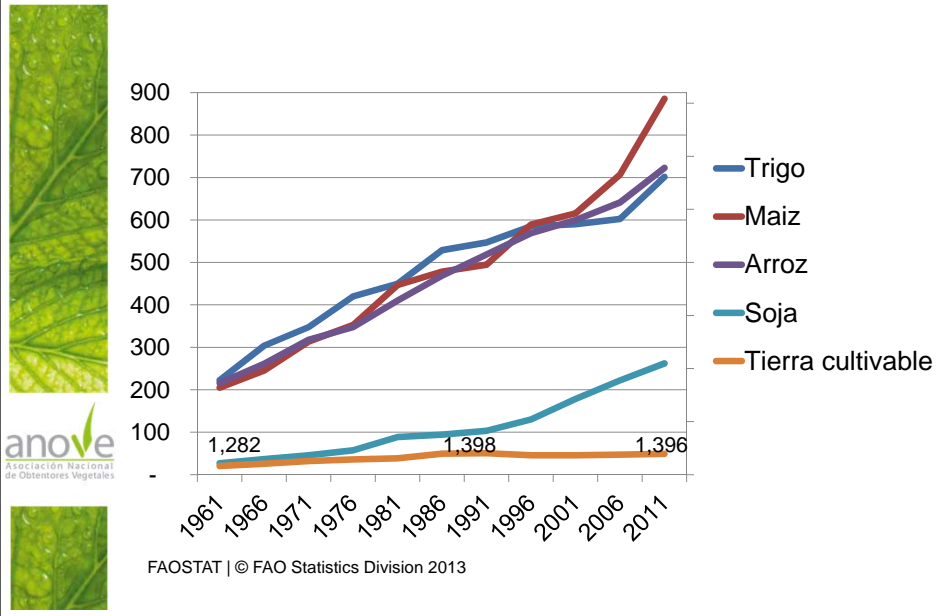


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- Yield
 - Profitability
 - Resistance to pests and diseases
 - Tolerance to abiotic stress
 - Harvestability
 - Crop quality
 - Input efficiency
 - Nutritional quality
 - Storage quality
 - New markets
 - Reduced food cost
 - More efficient land use
- ...But it needs:
- ❖ **Investments** and
 - ❖ **Return on investment**

Evolution of world yields (MMT) and arable land (MM ha)



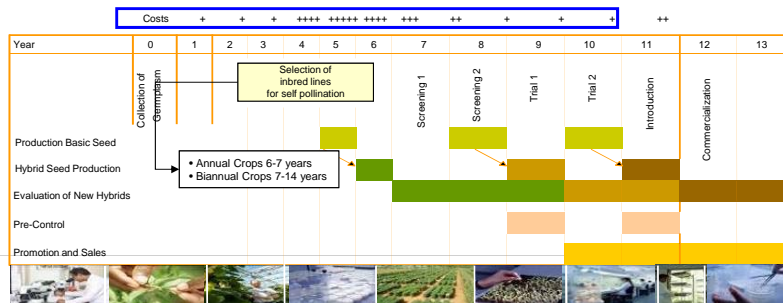
Variety development – Time & Costs



Average time to market is 12 years (annual crops) – biannual crops (onions) can take 15 years – whereas crops with 3 generations/ year can take only 4-5 years

- Accumulated R&D costs for a variety to market range 1.5 – 3 M€ in US/ Europe
- A global portfolio average of accumulated R&D costs per variety currently is in the range of 2 M€ (although in some crops could exceed 3 M€).
- Average time to market of 12 year

Time Line/ Cost for Variety Development (Annual Crop)



IP on seeds and plants



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- ❖ Plants are living things, meaning that they carry in themselves the ability to regenerate true to form (whether sexually or asexually)
- ❖ Anyone holding a seed (or cutting) possesses all the skills of the master to recreate and reproduce the variety, making it particularly susceptible to exploitation by parties other than the breeder
- ❖ Plant Breeders need a strong and effective intellectual property protection:
 - Ensures acceptable return on research investment
 - Prerequisite to encourage further research efforts
 - Motor for further innovation
 - Essential to meet the challenges mankind has to face
 - Require substantial, long-term and high-risk investments.

Why associations are so important today for the Plant Breeding industry?: challenges



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- Intellectual property protection
- Regulatory proliferation
- Regulatory and commercial barriers (GMOs)
- Access to genetic resources (CBD – Nagoya Protocol, ITPGRFA)
- New plant breeding techniques?
- Political decisions based on ideological reasons instead of scientific criteria
- Communication (Ignorance = suspicion)

Structure of Plant Breeding industry



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- **International level:**
 - ISF (International Seed Federation)
 - FIS (1924)
 - ASSINSEL (1938)
 - CIOPORA (1961)
- **Regional level**
 - ESA (European Seed Association)
 - SAA (Seed Association of the Americas)
 - AFSTA (African Seed Trade Association)
 - APSA (Asian Pacific Seed Association)
 - FELAS (Latin-American Seed Associations Federation)
- **National level**
 - National Seeds / Plant Breeders Associations

International Seed Federation



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- **ISF** is a non-governmental, non-profit making organization that represents the interests of the seed industry at a global level.
- **Vision:** “A world where the best quality seed is accessible to all, supporting sustainable agriculture and food security.”
- **Mission:** “To create the best environment for the global movement of seed and promote plant breeding and innovation in seed.”
- **ISF** represents the seed industry at international and inter-governmental organizations including:
 - OECD (Organization for Economic Cooperation and Development)
 - UPOV (International Union for the Protection of New Varieties of Plants)
 - IPPC (International Plant Protection Convention)
 - FAO (Food and Agriculture Organization)
 - CBD (Convention on Biological Diversity)
 - WIPO (World Intellectual Property Organization)

www.worldseed.org

ISF Membership



Ordinary members

- National Associations representing seed companies and enterprises within their countries
- 53 members from 41 countries

Associate members

- Seed companies or enterprises
- 88 members from 42 countries

Affiliate members

- Service providers to the seed industry
- 21 members from 11 countries

Tree and Shrub Seed Group

- National Seed Associations of tree and shrub seed companies and / or individual companies active in this field
- 37 members from 25 countries

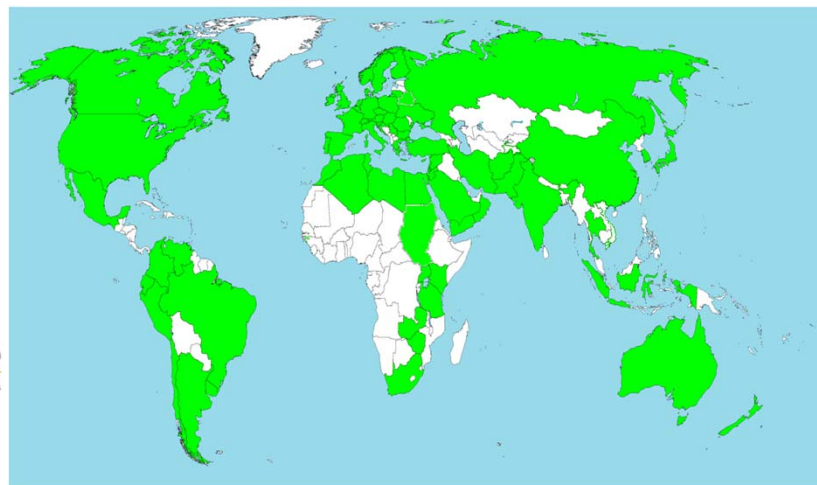
Observers

- 3 Associations

Membership in countries



217 members from 75 countries
96% of international seed trade



CIOPORA



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- **CIOPORA** is the international association of breeders of vegetatively reproduced ornamental and fruit plant varieties.
- Top priority of **CIOPORA** is the constant development and enhancement of systems of Intellectual Property Protection for plant innovation, which include Plant Breeders' Rights, Patents, Plant Patents and Trademarks.
- **CIOPORA** brings together 125 plant breeders, national breeders associations, patent attorneys and IP consultants from 27 countries, whose joint efforts are aimed at the development, improvement and harmonization of national and international regulations of Plant Variety Protection (PVP)
- **CIOPORA** is globally accepted as an independent, impartial non-profit and non-governmental organization seeking to establish effective IP protection systems for ornamental and fruit plant varieties worldwide.
- **CIOPORA** enjoys the observer status at the [CPVO and the UPOV](#).

www.ciopora.org

National Associations

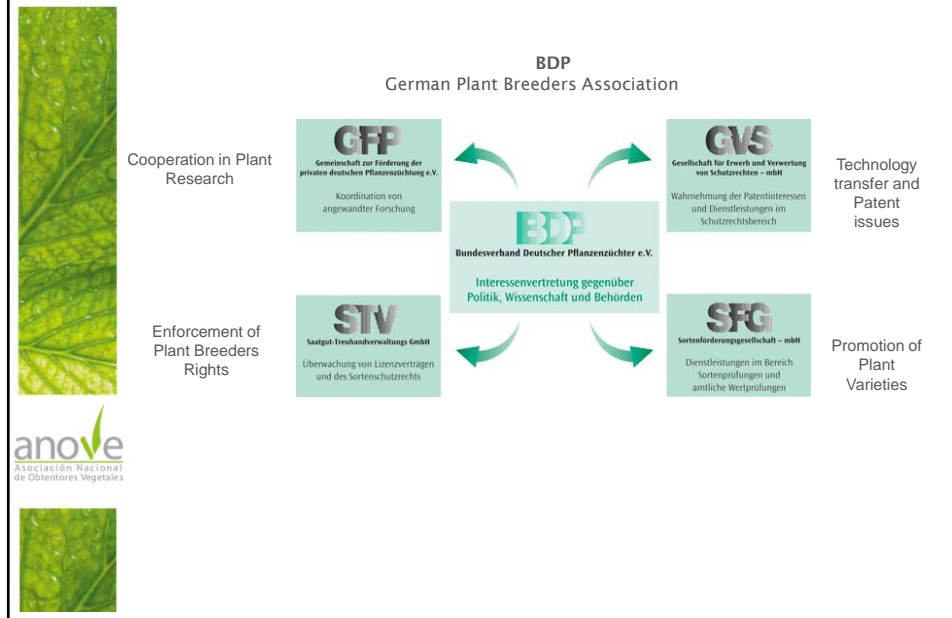


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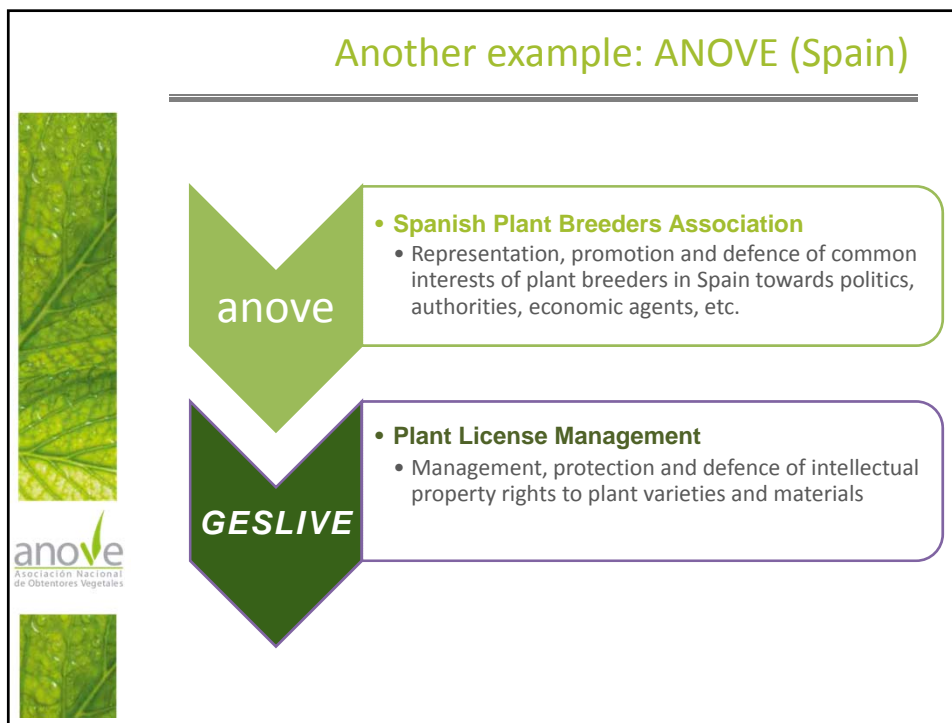


- Plant Breeders organization varies greatly at national level
- In most countries, plant breeders are associated and represented through seed trade associations:
 - ASTA (American Seed Trade Association, USA)
 - PLANTUM (NL)
 - SANSOR (South African National Seed Organization)
 - ASA (Argentinian Seed Association)
 - ...
- In some countries, they are specific plant breeders organizations devoted to IP issues:
 - SICASOV (France)
 - BSPB (British Society of Plant Breeders)
 - ARPOV (Argentina)
 - STV (Germany)
 - URUPOV (Uruguay)
 - GESLIVE (Spain)
 - ...

An example of Plant Breeders organization: BDP (Germany)



Another example: ANOVE (Spain)



anove mission and vision



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- **ANOVE' Mission:** Representing plant breeding industry in Spain, promoting the defence of its interests and the awareness of its activity, supporting the innovation and development of agriculture
- **ANOVE' Vision:** An innovative agriculture, competitive and sustainable, which values and have full access to plant breeding, contributing by this way to food security and economic development of the society.
- **ANOVE'** current membership includes most of plant breeders active in Spain, both private companies and public centres, from large multinationals to SMS companies (cooperatives, family companies, etc.), in all crops (vegetables, field crops, fruits, ornamentals, etc.)

anove priorities



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- ✓ **Communication:** Improving the social perception and appreciation of plant breeders activities
- ✓ **IP:** protecting the intellectual property rights of plant breeders.
- ✓ **Regulations:** participating in the discussion and decisions affecting plant breeding industry.
- ✓ **Representation:** representing and coordinating the plant breeding sector in Spain before national and international associations and stakeholders.

Geslive



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- **GESLIVE** was incorporated in 1996 as an independent organization by the main plant breeders operating in Spain.
- Since 2014, **GESLIVE** is a subsidiary of ANOVE, which holds 100% of the capital stock
- **GESLIVE**' main role is management, protection and defence of PVRs:
 - Legal assistance
 - Licenses management
 - 2,500 licenses on 1,270 varieties in 2015
 - Inspection activities
 - 1,250 inspections in 2015
 - Enforcement
 - 63 legal proceedings in 2015

Most common infringements of IP in the seed and plant sector



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- ❖ Open pollinated varieties (cereals, forage crops) – “brown bags” and “fake” farm saved seeds
 - ❖ Hybrid vegetable seeds – vegetative propagation
 - ❖ Hybrid field crops seeds (Maize, Sunflower) – counterfeit seeds
 - ❖ Fruit and ornamental plants – vegetative propagation
- Offenders:**
- Competitors
 - Farmers & growers
 - Nurseries & Plant-raisers
 - Organized crime?
- ❖ In many cases, infringers = customers (**key feature of infringements to PBRs!**)
 - ❖ Fighting infringements is very hard to individual breeders

Most common infringements of IP in the seed and plant sector



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- ❖ Infringement of plant breeders' rights is widespread in Spain in some crops
- ❖ Some examples:
 - Cereals: 25 % certified seed
 - The other 75 % comes from two sources:
 - Genuine farm saved seed (estimated 25%)
 - Brown bags (estimated 50%)
 - Vegetables: 20% of tomato plants are illegally produce through vegetative reproduction ("stubs")
 - Fruits: 70% of peach plants comes from non controlled sources

Why seeds and plants are counterfeited?



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- ❖ Cultural and social factors (traditional practices, etc.)
- ❖ Lack of awareness or appreciation to plant breeders work and rights.
- ❖ Recession, low income for farmers
- ❖ Relatively easy to organize
- ❖ **Low risk:** not in the main focus of the law enforcement
 - Means no harm to the human health (Pharmaceuticals, foods)
 - Not so big loss on tax revenue (tobacco, alcoholic beverages)
 - Political misunderstandings ("*poor farmers vs big multinationals*")
- ❖ **High profit**

Regulatory offences



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- ❖ Seed market strongly regulated in many countries (certification scheme)
- ❖ Counterfeited seeds imply regulatory offences against seed production and market regulations.
- ❖ Nevertheless...
 - ❖ Opacity of administrative proceedings in some countries (i.e., right holder not acknowledged as party in the proceedings – no intervention)
 - ❖ Lack of commitment by competent authorities in the prosecution of counterfeited seeds and plants
 - ❖ No dissuasive fines (to deterring further infringements – TRIP'S):
Example: € 600 on average in Spain!!

Enforcement: main obstacles



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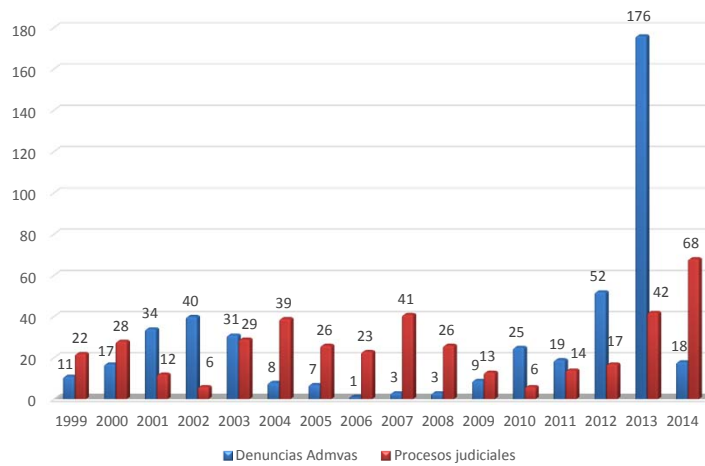


- Legislative shortcomings
- Ignorance of applicable regulations and technical aspects (production and multiplication of plant material, variety identification, etc.) by authorities (Courts, prosecutors, police, etc.)
- Collecting evidence
- Variety identification (phenotype vs genotype)
- “Farmer’s privilege”: farm saved seed

What is done by Plant Breeders Associations: Legal proceedings by Geslive



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Training programs: SEPRONA (Spain)



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Training programs: SEPRONA (Spain)



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	ZONE	DATE	PLACE	COMANDANCE	PEOPLE TO TRAIN
1	CATALUÑA	30 de septiembre	BARCELONA	BARCELONA	8
				GERONA	2
				LÉRIDA	8
				TARRAGONA	2
2	CASTILLA-LA MANCHA	27 de octubre	ALBACETE	ALBACETE	30
3	MURCIA	26 de noviembre	MURCIA	MURCIA	14
4	CASTILLA Y LEÓN	5 de noviembre	PALENCIA	PALENCIA	18
				BURGOS	8
				LEÓN	14
5	CASTILLA Y LEÓN	20 de octubre	SEGOVIA	SEGOVIA	27
				SORIA	1
				ÁVILA	18
6	CASTILLA Y LEÓN	22 de octubre	SALAMANCA	SALAMANCA	14
				VALLADOLID	2
				ZAMORA	10
				CÁCERES	44
7	EXTREMADURA	29 de octubre	CÁCERES	CÁCERES	44
				GRANADA	26
8	ANDALUCÍA	9 de diciembre	ALMERÍA	ALMERÍA	22
				CÁDIZ	20
9	ANDALUCÍA	19 de octubre	CÁDIZ	HUELVA	5
				ALGECIRAS	6
10	LA RIOJA	3 de noviembre	LOGROÑO	LA RIOJA	16
11	GALICIA	18 de noviembre	LA CORUÑA	LA CORUÑA	18
				PONTEVEDRA	8
12	CANARIAS	30 de noviembre	TENERIFE	TENERIFE	15

TOTAL: 356 Civil Guards from 25 Comandances

Training programs: SEPRONA (Spain)



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	2012	2013	2014	2015*
Nº services	50	252	366	81
Inspections	70	206	251	55
Identifications	3	6	16	1
Infringements	40	210	211	26
Crimes	6	12	5	6
Arrests	5	9	6	8
Seizures	6	14	12	2



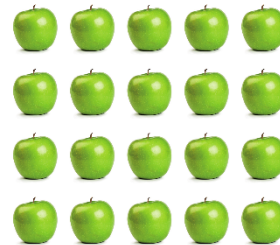
What is done by Plant Breeders Associations: Communication



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FIND THE FAULT!



THE FAULT IS THAT THREE OF THE APPLES HAVE BEEN HARVESTED FROM TREES, WHICH HAVE BEEN PROPAGATED WITHOUT A PROPER LICENSE.

Dealing with unlicensed propagating material of a protected variety, and the harvest obtained from it, is a Plant Breeder's Rights infringement. It can have serious consequences for your company and in a criminal or in many countries, make sure that you deal with legal plant material only. Be aware that anybody in the whole value chain can be held liable for a Plant Breeder's Rights infringement. For more information please visit: www.cipora.eu



Conclusions



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- ❖ Plant Breeding is a key industry to solve the challenges mankind is facing for food, fibers and energy supply, in a sustainable and economically efficient way.
- ❖ Plant Breeding is an expensive activity in both time and money
- ❖ IP rights are indispensable to protect and sustain breeder's efforts and investments
- ❖ Proliferation of regulations on key aspects (access to genetic resources, GMOs, LLP, new plant breeding technics, phytosanitary issues, trade...) can impose barriers to plant breeding activity
- ❖ Associations play a major role in enhancing the plant breeders environment and activities
- ❖ Communication and education are essential tools to improve social perception and appreciation of plant breeders work



Thank you

