nak tuinbouw

Plant Variety Protection in the Netherlands

PVP in the Netherlands and the EU
The examination
International cooperation
The benefits of UPOV PVP

Marian van Leeuwen

Naktuinbouw

Plant breeders' rights (UPOV)

- Plant breeders' rights (PBR), also known as Plant Variety Protection (PVP), are rights granted to the owner of a new variety of plant that gives him exclusive control over the propagating material (including seed, cuttings, divisions, tissue culture) and harvested material (cut flowers, fruit, foliage) of a new variety for a number of years.

Union Internationale pour la Protection
des Obtentions Végétales (UPOV)
International organisation for the protection of Plant Varieties

Contents

- **Plant Variety Protection in the Netherlands and the EU**

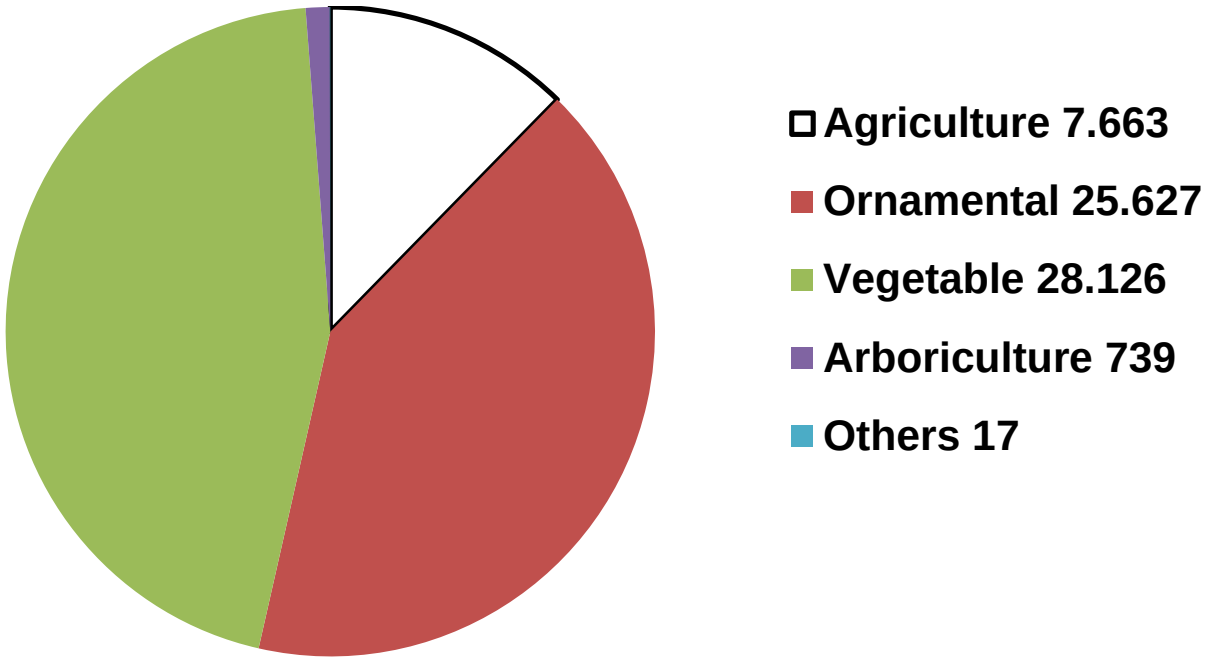
Raadvoorplantenrassen

CPVO
Community Plant Variety Office
Communautair Bureau voor plantenrassen

- **DUS Examination of Plant Varieties**
- **Cooperation in DUS examination**
- **Benefits of Plant Variety Protection system**

Applications in the Netherlands

Total 62.172 since 1960 in 663 different species (PVP and Listing)



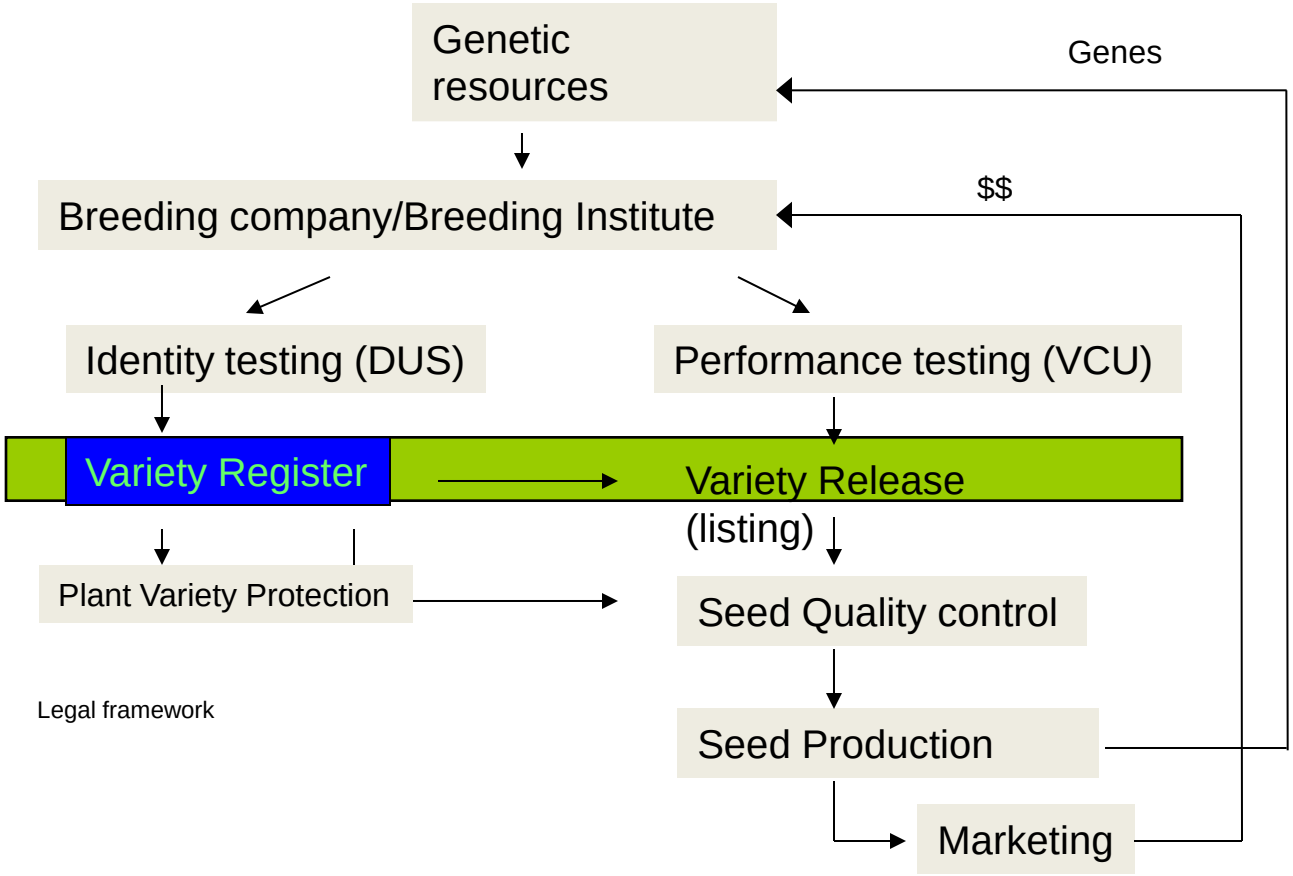
Rise of the Dutch PVP system

Anno 2016

•Holland has a thriving plant breeding industry:

- Especially: potatoes, vegetables, ornamentals
- Important global player
- High investments in R&D
- Return on investment by IP protection is essential

Variety development cycle

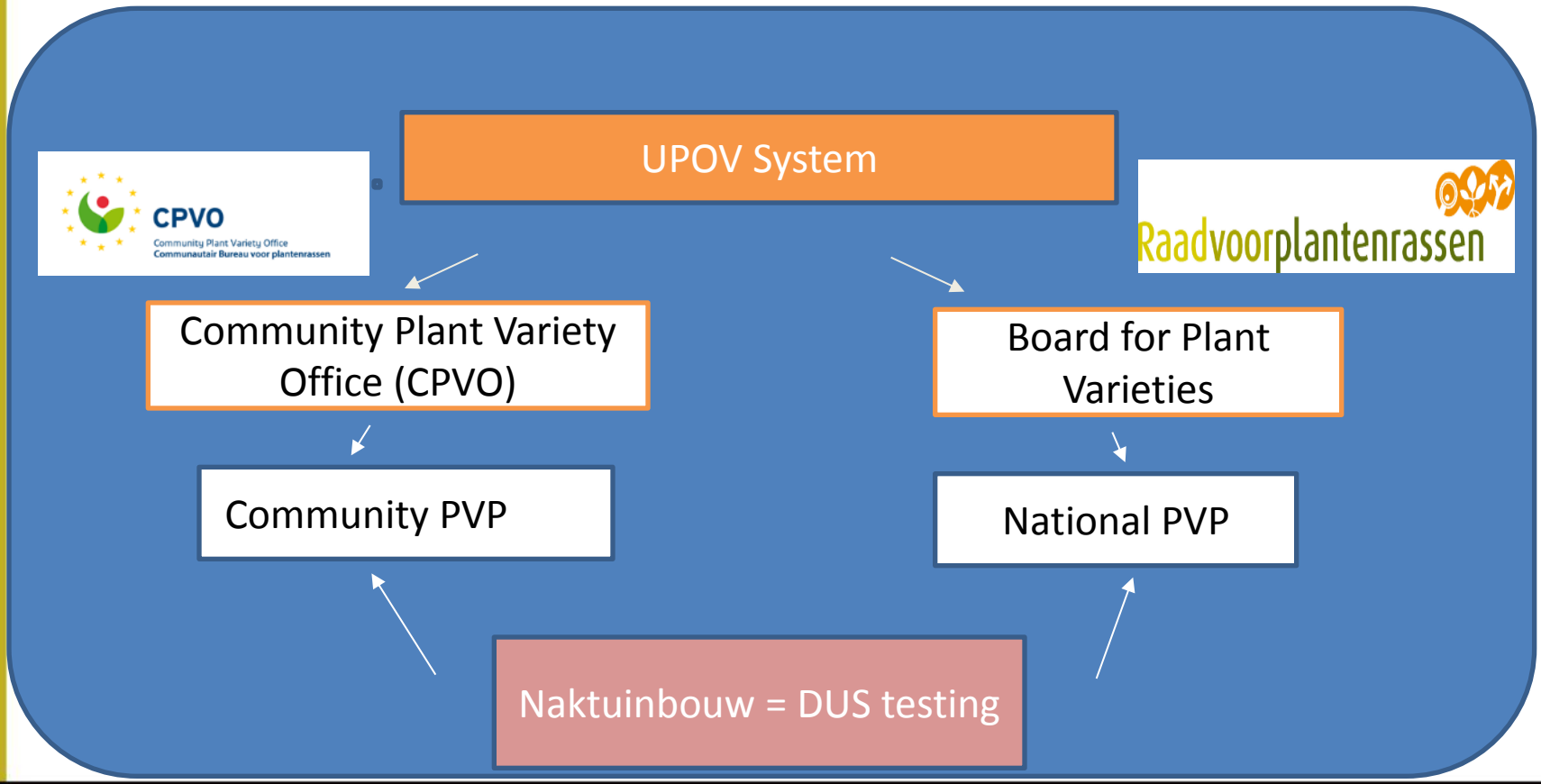


The PVP system in the Netherlands nowadays

- The Dutch Seeds and Plant Material Act regulates (conform UPOV ‘91):
  - Plant Variety Protection
  - Listing (registering) of plant varieties
  - Trading of seeds and plant material

The PVP system in The Netherlands nowadays

Two kinds of PVP: (1) European Union PVP or (2) National PVP



The PVP system in The Netherlands nowadays

- Why is the (Dutch) breeding industry strongly advocating the UPOV system?
  - Uniform principles
  - One language
  - Explanatory notes
  - Confidence of industry/ breeders
  - Cooperation in examining

Farmer's Rights

- Farmer's privilege for those species where harvest is at the same time seed
- Obligatory exception for subsistence farmers (private and non-commercial use)
- Applies for agricultural varieties
- Possibility to exclude small farms from paying royalties to the owner of the variety

Applications National/ Community PVP

Raadvoorplantenrassen

National Plant Variety Protection

Year	Applications	Grants	In force
2010	720	473	4.998
2011	787	719	5.660
2012	648	837	6.410
2013	747	585	6.833
2014	698	536	7.236
2015	798	610	7.719

Community Plant Variety Protection

Year	Applications	Grants	In force
2010	2.886	2.303	17.613
2011	3.184	2.585	18.900
2012	2.868	2.640	20.364
2013	3.297	2.706	21.577
2014	3.626	2.684	22.557
2015	3.111	2.844	23.766

CPVO
Community Plant Variety Office
Communautair Bureau voor plantenrassen

Cooperation: Board for Plant Varieties and Naktuinbouw

The Netherlands system has two players:

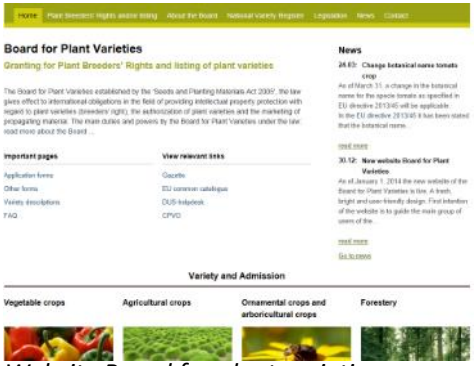
Board for Plant Varieties: Wageningen

Naktuinbouw: Roelofarendsveen

Board for Plant Varieties

- Falls under Ministry of Economic Affairs
- Members (7 – 11) appointed by Minister
- Present independent members from inspection bodies, agricultural university, produce board
- No administrative tasks
- Secretary of the Board
- http://www.raadvoorplantenrassen.nl/en/home

Raadvoorplantenrassen



Website Board for plant varieties

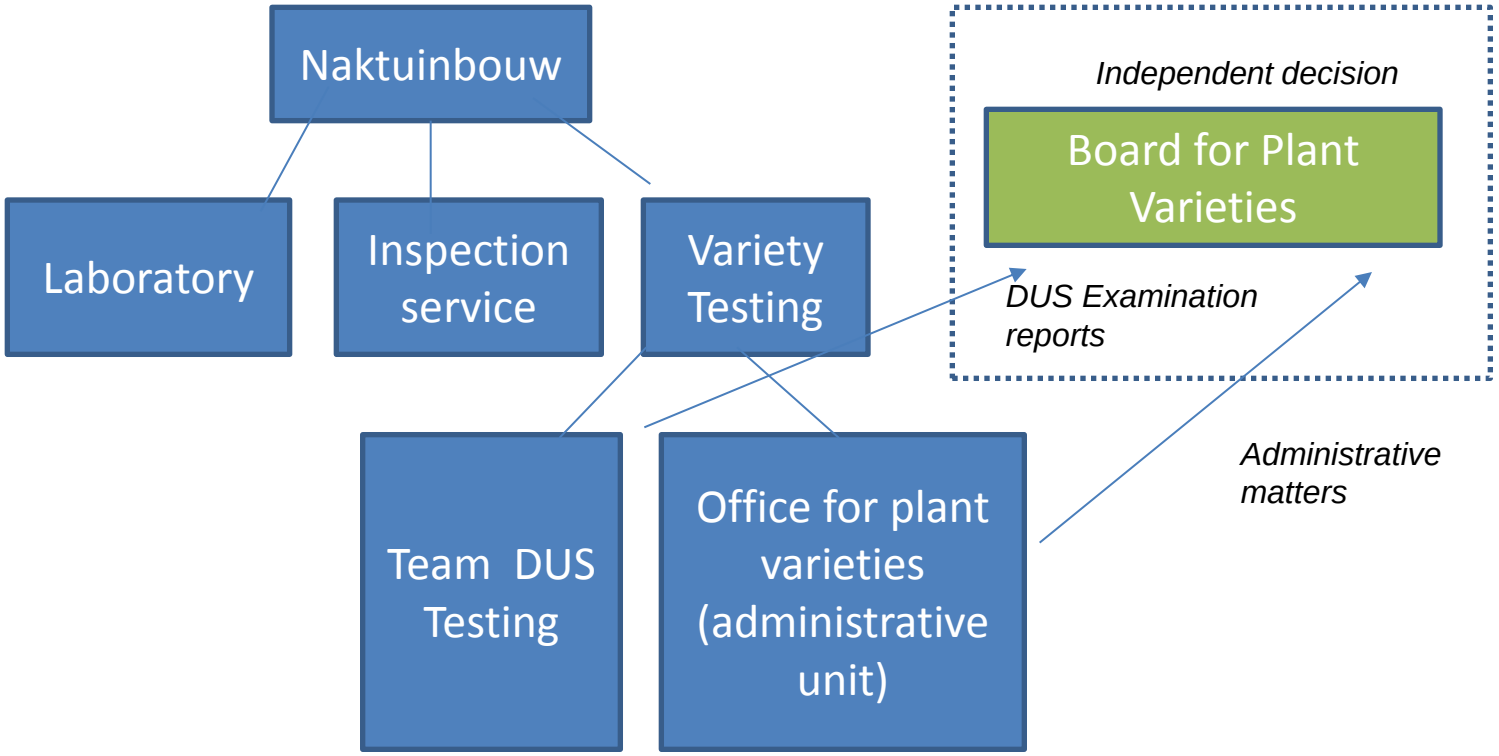
Naktuinbouw: Netherlands Inspection Service for Horticulture

- Basic inspection according to
  - Dutch Seed and Plant Material Act and Plant Disease Act
  - European legislation

- DUS testing for National Listing, National and European Plant Variety Protection
  - Ornamental crops
  - Agricultural crops
  - Vegetable crops

Board for Plant Varieties and Naktuinbouw

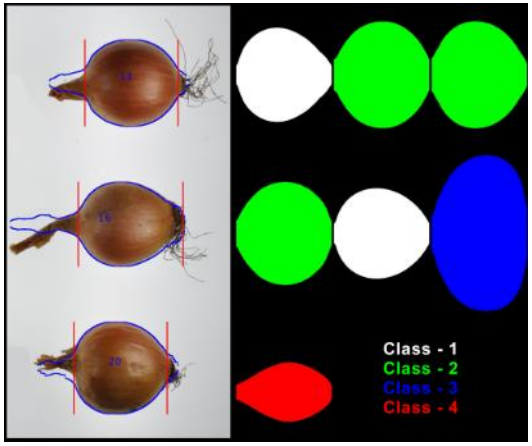
Organisational aspects cooperation Naktuinbouw and Board for Plant Varieties :



Naktuinbouw

Naktuinbouw: Variety Testing Department

- 3 teams
  - Office for Plant Varieties (administrative team)
  - DUS Testing Agricultural, Ornamental, Fruit and Vegetable Crops
  - Trial Management
- Number of staff: 60
- Managers DUS team give technical support to Board for Plant Varieties



Board for Plant Varieties and Naktuinbouw

Who is doing what?

Naktuinbouw
tasks

Competence:

- DUS test and DUS report
- Variety description
- Administrative matters

Board for Plant Varieties tasks

Competence:

- Grant PBR
- Registering Variety
- Policy matters
- Appeal

Result: independent decision

Acceptance of decision by breeders

Following the grant of Plant Variety Protection

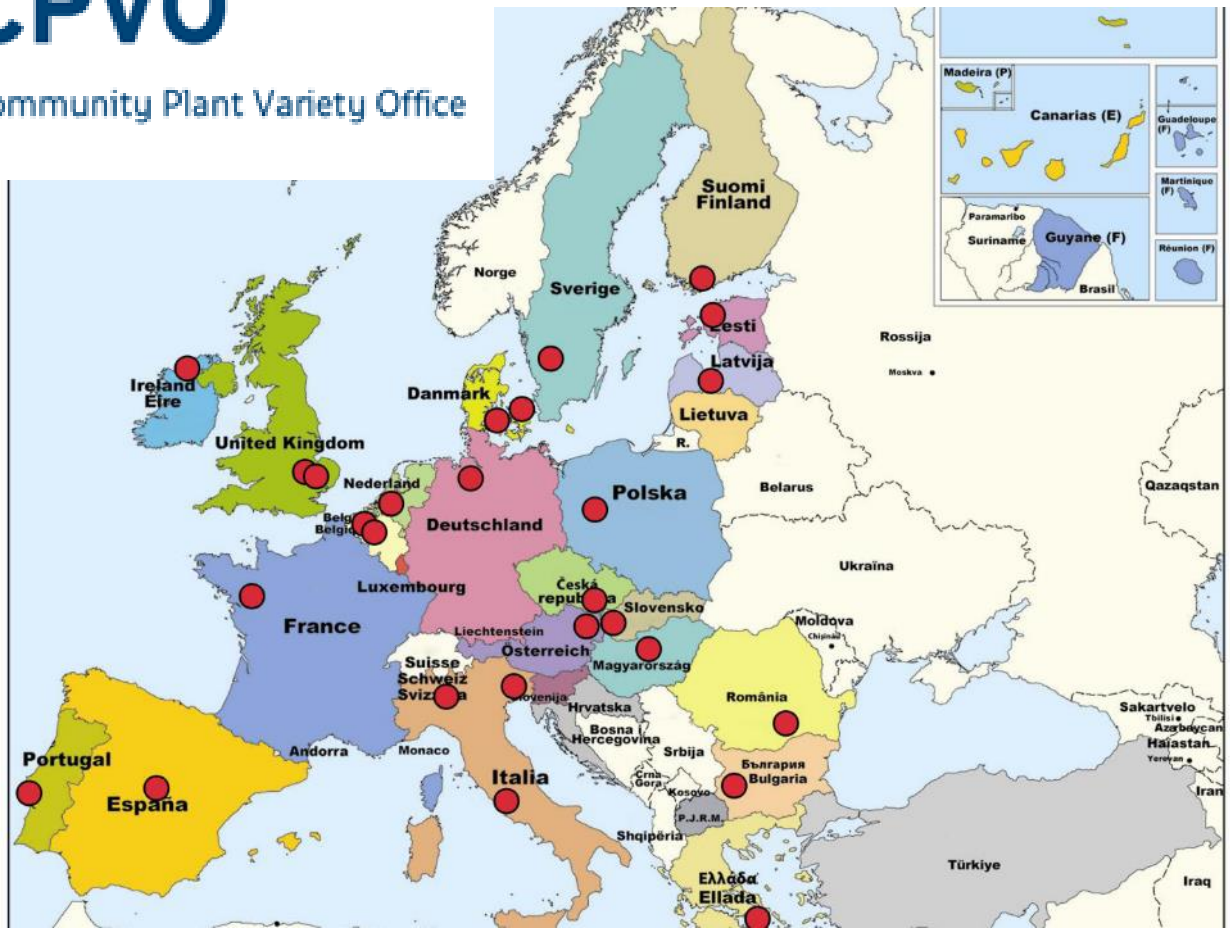
- Annual fees
  - Not applicable in the Netherlands
  - EU: Non payment means cancellation of PVP
- Verification of PVP's
  - CPVO has task to verify
- Maintaining variety register
- Infringements
  - Responsibility of breeder to check

You have to bring frauds to court yourself

EU

CPVO

Community Plant Variety Office



EU Plant Variety Protection

Based on the UPOV Convention 1991.

Characteristics
A system for the protection of plant varieties on European scale was established by a Regulation of the European Community in 1994.

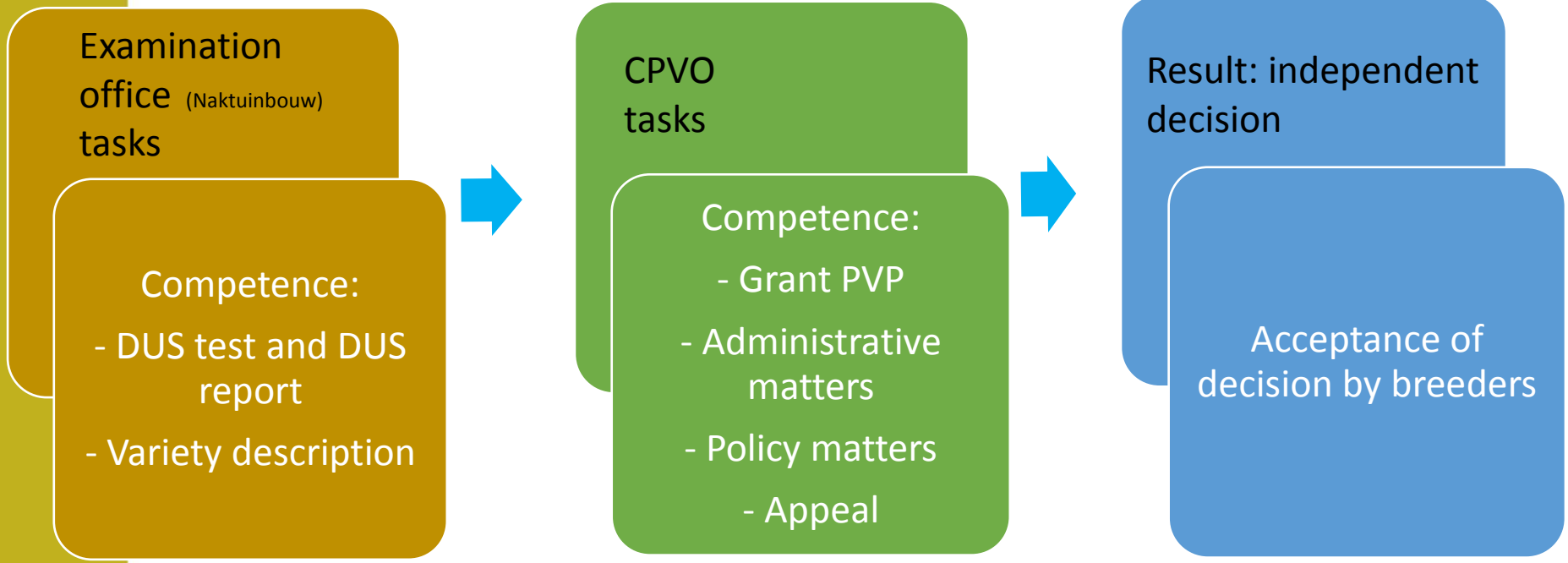
Duration of the Community Right: 25 years
(30 years for vine, trees and potato varieties).

The Community Plant Variety Office (CPVO) administers the system.

The rights (Community Plant Variety Rights) granted under this system are valid throughout the territory of the 27 Member States of the European Union.

CPVO and Naktuinbouw

Who is doing what?



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DUS Examination

- In order to be granted Plant Variety Protection, a variety must comply to criteria for

  - **D**istinctness consistent and clear
  - **U**niformity appropriate standards, depending on propagation
  - **S**tability after repeated propagation

  - Novelty
  - Denomination

If these requirements are met then the variety will be described.
This description will be the 'ID-card' of the variety.

CPVO Technical Protocol for DUS Test

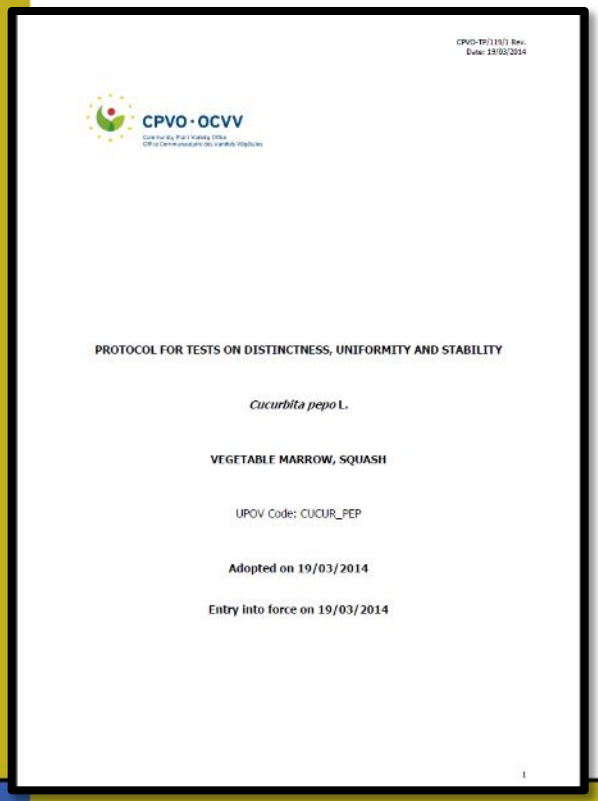
- Describes:
  - The technical procedures: How to assess DUS, how to make a description
- Based on UPOV documents:
  - General introduction to DUS
  - Test Guidelines

Guidance for DUS Examination

CPVO Technical Protocols

UPOV Technical Guidelines

National Protocols



CPVO-TP/119/1 Rev.
Date: 19/03/2014

CPVO · OCVV

PROTOCOL FOR TESTS ON DISTINCTNESS, UNIFORMITY AND STABILITY

Cucurbita pepo L.

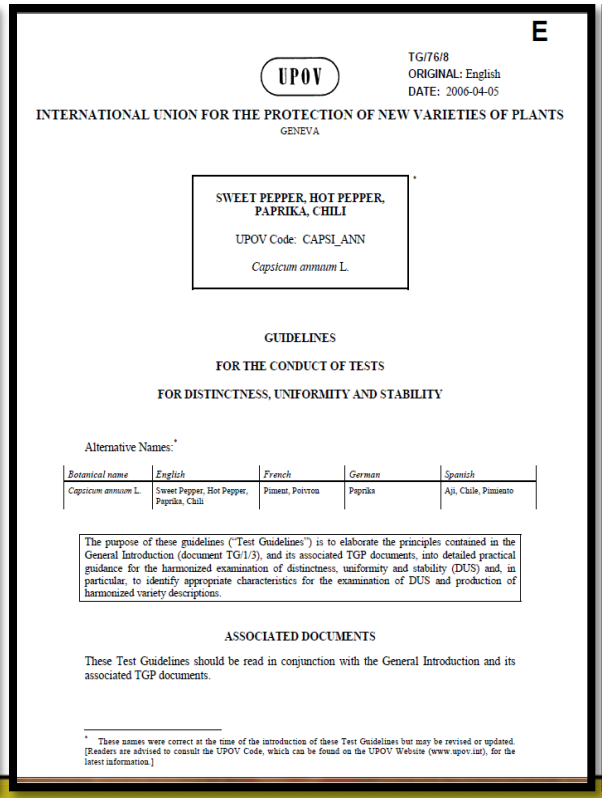
VEGETABLE MARROW, SQUASH

UPOV Code: CUCUR_PEP

Adopted on 19/03/2014

Entry into force on 19/03/2014

1



E

UPOV

TG/76/8
ORIGINAL: English
DATE: 2006-04-05

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

SWEET PEPPER, HOT PEPPER, PAPRIKA, CHILI

UPOV Code: CAPSI_ANN

Capsicum annuum L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

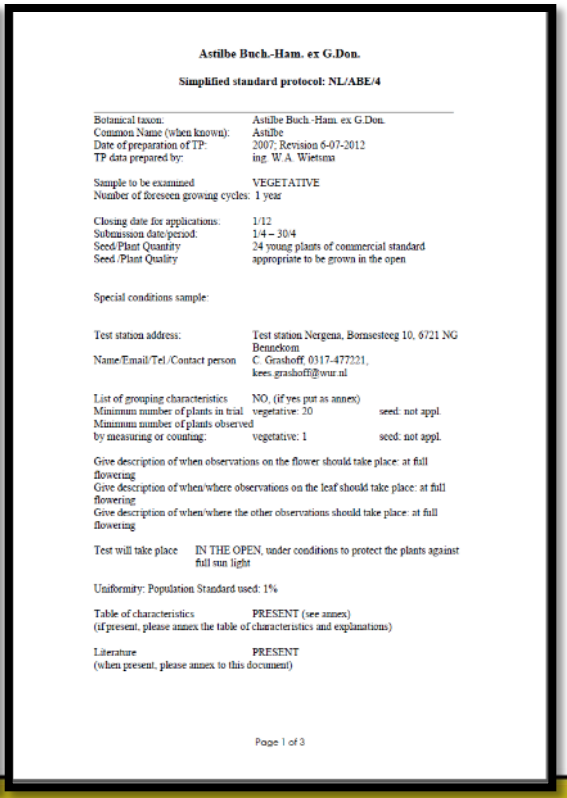
Botanical name	*English*	*French*	*German*	*Spanish*
Capsicum annuum L.	Sweet Pepper, Hot Pepper, Paprika, Chili	Piment, Poivron	Paprika	Ají, Chile, Pimiento

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]



Astilbe Buch.-Ham. ex G.Don.

Simplified standard protocol: NL/ABE/4

Botanical taxon:	Astilbe Buch.-Ham. ex G.Don.
Common Name (when known):	Astilbe
Date of preparation of TP:	2007; Revision 6-07-2012
TP data prepared by:	ing. W.A. Wietsma
Sample to be examined	VEGETATIVE
Number of foreseen growing cycles:	1 year
Closing date for applications:	1/12
Submission date/period:	1/4 – 30/4
Seed/Plant Quantity	24 young plants of commercial standard
Seed /Plant Quality	appropriate to be grown in the open
Special conditions sample:	
Test station address:	Test station Nergena, Bornsesteeg 10, 6721 NG Bennekom
Name/Email/Tel./Contact person	C. Grashoff, 0317-477221, kees.grashoff@wur.nl
List of grouping characteristics	NO, (if yes put as annex)
Minimum number of plants in trial	vegetative: 20 seed: not appl.
Minimum number of plants observed by measuring or counting:	vegetative: 1 seed: not appl.
Give description of when observations on the flower should take place: at full flowering	
Give description of when/where observations on the leaf should take place: at full flowering	
Give description of when/where the other observations should take place: at full flowering	
Test will take place	IN THE OPEN, under conditions to protect the plants against full sun light
Uniformity: Population Standard used: 1%	
Table of characteristics (if present, please annex the table of characteristics and explanations)	PRESENT (see annex)
Literature (when present, please annex to this document)	PRESENT

Page 1 of 3

160 Protocols

303 Guidelines

ca. 170 National protocols

CPVO Technical Protocol

to promote uniform DUS testing within EU and enable Community PVP

25

EN**TRUST**ED

Examination Offices

Submission of the samples

- Closing dates
- Amount and Quality
- Examination Office

1. Appropriately packaged
2. Clearly labelled
3. Must be submitted in the specified period, number and conditions.

4. Clean of pests and diseases.
5. Untreated with insecticides, fungicides or any other treatment.

Preparation of the trials

- Test design
  - Layout, number of plants in test
  - replications
  - allowing removal of plants or parts of plants
  - Number of plants/parts of plants to be examined
- Additional tests
- Number of growing cycles

Material to be included in the trial

- Candidate varieties
- Candidate varieties from countries with bilateral agreement for DUS testing
- Reference varieties
  - example varieties
  - varieties for comparison (similar varieties)

    (is candidate variety truly distinct?)

DUS Examination: a challenge

DUS Examination: The real work can start

Description of the variety

- Using the table of characteristics of the CPVO protocol/UPOV guideline/National guideline.

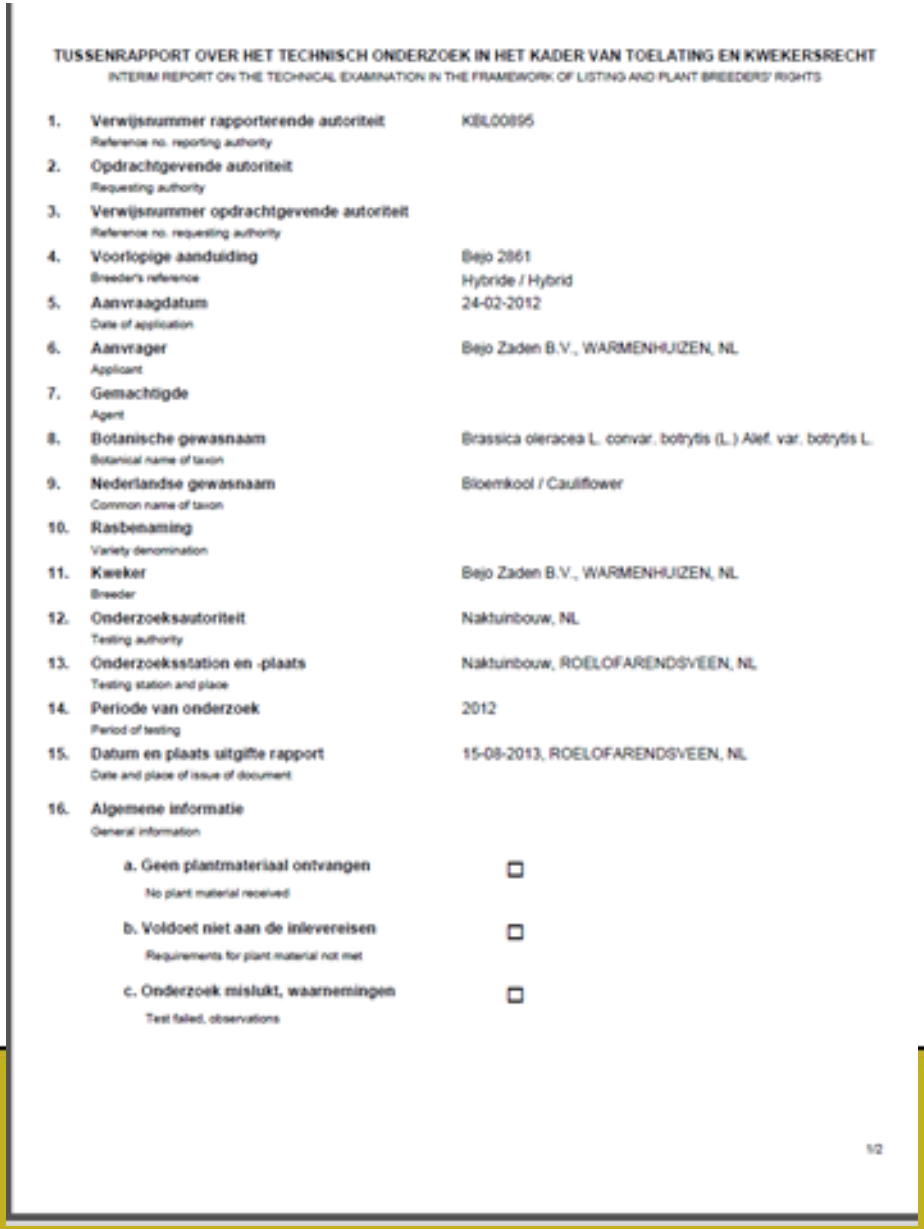
CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
30.	30.		**Fruit: general shape**		
(+)			disc shaped		1
			transverse elliptical		2
			transverse broad elliptical		3
			globular		4
			top shaped		5
			broad elliptical		6
			ovate		7
			elliptical		8
			cylindrical		9
			pear shaped		10
			bottle shaped		11
G			club shaped		12
31.1	31.1		**Only Scallop type varieties: Fruit: length**		
			short	Bennings Green Tint	3
			medium	Sunburst	5
			long	Yellow Bush Scallop	7
31.2	31.2		**Only Acorn type varieties: Fruit: length**		
			short	Table Gold	3

Applicants visiting the trial

Reporting

Interim report:

interim report: mid-term on D, U and S.



TUSSENRAPPORT OVER HET TECHNISCH ONDERZOEK IN HET KADER VAN TOELATING EN KWEKERSRECHT
INTERIM REPORT ON THE TECHNICAL EXAMINATION IN THE FRAMEWORK OF LISTING AND PLANT BREEDERS' RIGHTS

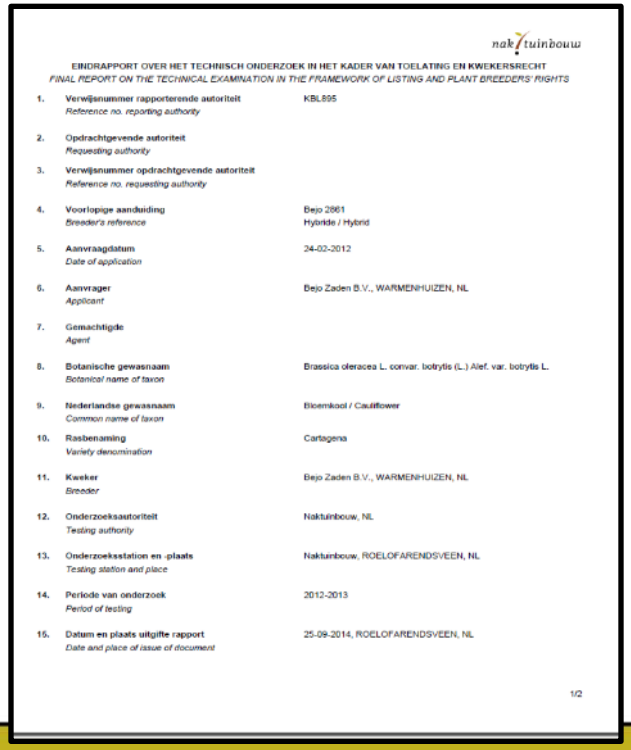
1.	Verwijsnummer rapporterende autoriteit Reference no. reporting authority	KBL00895
2.	Opdrachtgevende autoriteit Requesting authority	
3.	Verwijsnummer opdrachtgevende autoriteit Reference no. requesting authority	
4.	Voorlopige aanduiding Breeder's reference	Bejo 2861 Hybride / Hybrid
5.	Aanvraagdatum Date of application	24-02-2012
6.	Aanvrager Applicant	Bejo Zaden B.V., WARMENHUIZEN, NL
7.	Gemachtigde Agent	
8.	Botanische gewasnaam Botanical name of taxon	Brassica oleracea L. convar. botrytis (L.) Alef. var. botrytis L.
9.	Nederlandse gewasnaam Common name of taxon	Bloemkool / Cauliflower
10.	Rasbenaming Variety denomination	
11.	Kweker Breeder	Bejo Zaden B.V., WARMENHUIZEN, NL
12.	Onderzoeksautoriteit Testing authority	Naktuinbouw, NL
13.	Onderzoeksstation en -plaats Testing station and place	Naktuinbouw, ROELOFARENDSVEEN, NL
14.	Periode van onderzoek Period of testing	2012
15.	Datum en plaats uitgifte rapport Date and place of issue of document	15-08-2013, ROELOFARENDSVEEN, NL
16.	Algemene informatie General information	
	a. Geen plantmateriaal ontvangen No plant material received	☐
	b. Voldoet niet aan de inlevereisen Requirements for plant material not met	☐
	c. Onderzoek mislukt, waarnemingen Test failed, observations	☐

1/2

Reporting

Final report:

situation at the end of the DUS test, decision on D,U and S



naktuinbouw

EINDRAPPORT OVER HET TECHNISCH ONDERZOEK IN HET KADER VAN TOELATING EN KWEKERSRECHT
FINAL REPORT ON THE TECHNICAL EXAMINATION IN THE FRAMEWORK OF LISTING AND PLANT BREEDERS' RIGHTS

1.	Verwijsnummer rapporterende autoriteit *Reference no. reporting authority*	KBL895
2.	Opdrachtgevende autoriteit *Requesting authority*	
3.	Verwijsnummer opdrachtgevende autoriteit *Reference no. requesting authority*	
4.	Voorlopige aanduiding *Breeder's reference*	Bejo 2861 Hybride / Hybrid
5.	Aanvraagdatum *Date of application*	24-02-2012
6.	Aanvrager *Applicant*	Bejo Zaden B.V., WARMENHUIZEN, NL
7.	Gemachtigde *Agent*	
8.	Botanische gewasnaam *Botanical name of taxon*	Brassica oleracea L. convar. botrytis (L.) Alef. var. botrytis L.
9.	Nederlandse gewasnaam *Common name of taxon*	Bloemkool / Cauliflower
10.	Rasbenaming *Variety denomination*	Cartagena
11.	Kweker *Breeder*	Bejo Zaden B.V., WARMENHUIZEN, NL
12.	Onderzoeksautoriteit *Testing authority*	Naktuinbouw, NL
13.	Onderzoeksstation en -plaats *Testing station and place*	Naktuinbouw, ROELOFARENDSVEEN, NL
14.	Periode van onderzoek *Period of testing*	2012-2013
15.	Datum en plaats uitgifte rapport *Date and place of issue of document*	25-09-2014, ROELOFARENDSVEEN, NL

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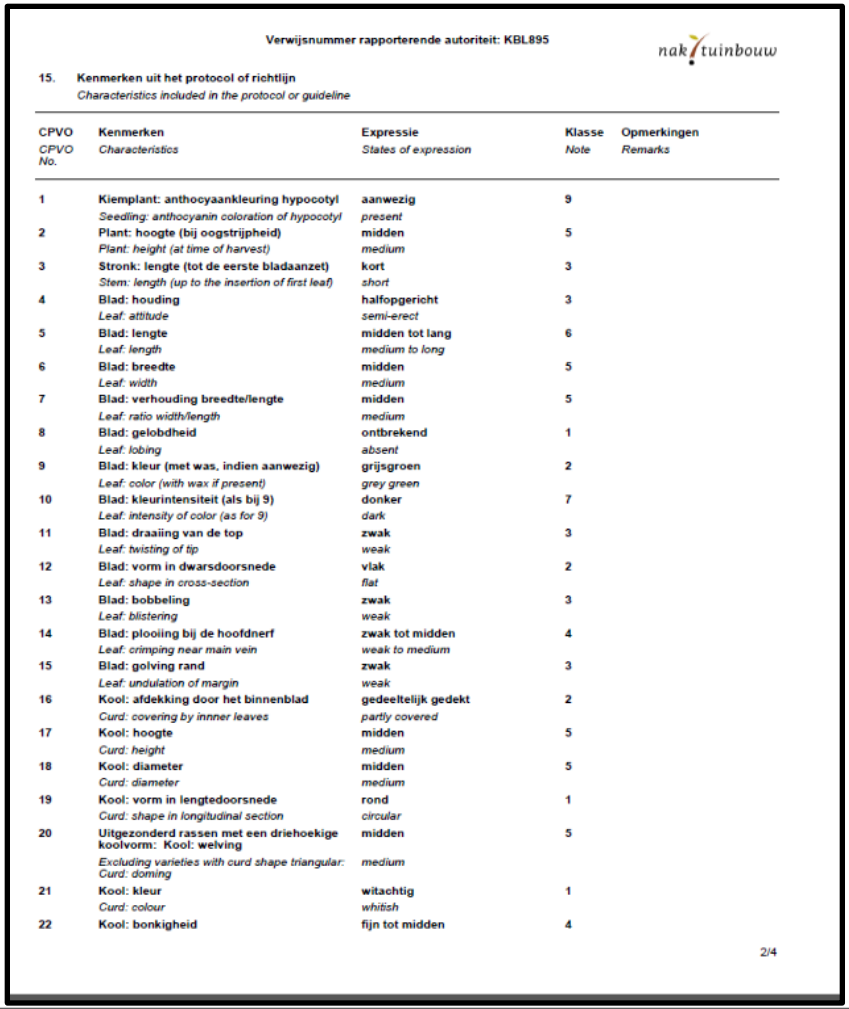

Verwijsnummer rapporterende autoriteit: KBL895

naktuinbouw

15. Kenmerken uit het protocol of richtlijn
Characteristics included in the protocol or guideline

CPVO *CPVO No.*	Kenmerken *Characteristics*	Expressie *States of expression*	Klasse *Note*	Opmerkingen *Remarks*
1	Kiemplant: anthocyaankleuring hypocotyl *Seedling: anthocyanin coloration of hypocotyl*	aanwezig *present*	9	
2	Plant: hoogte (bij oogstrijpheid) *Plant: height (at time of harvest)*	midden *medium*	5	
3	Stronk: lengte (tot de eerste bladaanzet) *Stem: length (up to the insertion of first leaf)*	kort *short*	3	
4	Blad: houding *Leaf: attitude*	halfopgericht *semi-erect*	3	
5	Blad: lengte *Leaf: length*	midden tot lang *medium to long*	6	
6	Blad: breedte *Leaf: width*	midden *medium*	5	
7	Blad: verhouding breedte/lengte *Leaf: ratio width/length*	midden *medium*	5	
8	Blad: gelobdheid *Leaf: lobing*	ontbrekend *absent*	1	
9	Blad: kleur (met was, indien aanwezig) *Leaf: color (with wax if present)*	grijsgroen *grey green*	2	
10	Blad: kleurintensiteit (als bij 9) *Leaf: intensity of color (as for 9)*	donker *dark*	7	
11	Blad: draaiing van de top *Leaf: twisting of tip*	zwak *weak*	3	
12	Blad: vorm in dwarsdoorsnede *Leaf: shape in cross-section*	vlak *flat*	2	
13	Blad: bobbeling *Leaf: blistering*	zwak *weak*	3	
14	Blad: plooiing bij de hoofdnerf *Leaf: crimping near main vein*	zwak tot midden *weak to medium*	4	
15	Blad: golving rand *Leaf: undulation of margin*	zwak *weak*	3	
16	Kool: afdekking door het binnenblad *Curd: covering by innner leaves*	gedeeltelijk gedekt *partly covered*	2	
17	Kool: hoogte *Curd: height*	midden *medium*	5	
18	Kool: diameter *Curd: diameter*	midden *medium*	5	
19	Kool: vorm in lengtedoorsnede *Curd: shape in longitudinal section*	rond *circular*	1	
20	Uitgezonderd rassen met een driehoekige koolvorm: Kool: welving *Excluding varieties with curd shape triangular: Curd: doming*	midden *medium*	5	
21	Kool: kleur *Curd: colour*	witachtig *whitish*	1	
22	Kool: bonkigheid	fijn tot midden	4	

2/4

Policy on Plant Material

- What may Naktuinbouw/the EU Examination office do with the material after the variety has been granted?

Vegetative propagated material

•If no living reference collection kept, material should be destroyed or sent back to the applicant.

•Living reference collection, material should be kept by the EU EO until the title expiry.

Seed propagated material

•Trial is destroyed

•Sample is stored

What is left after the trial is finished…..

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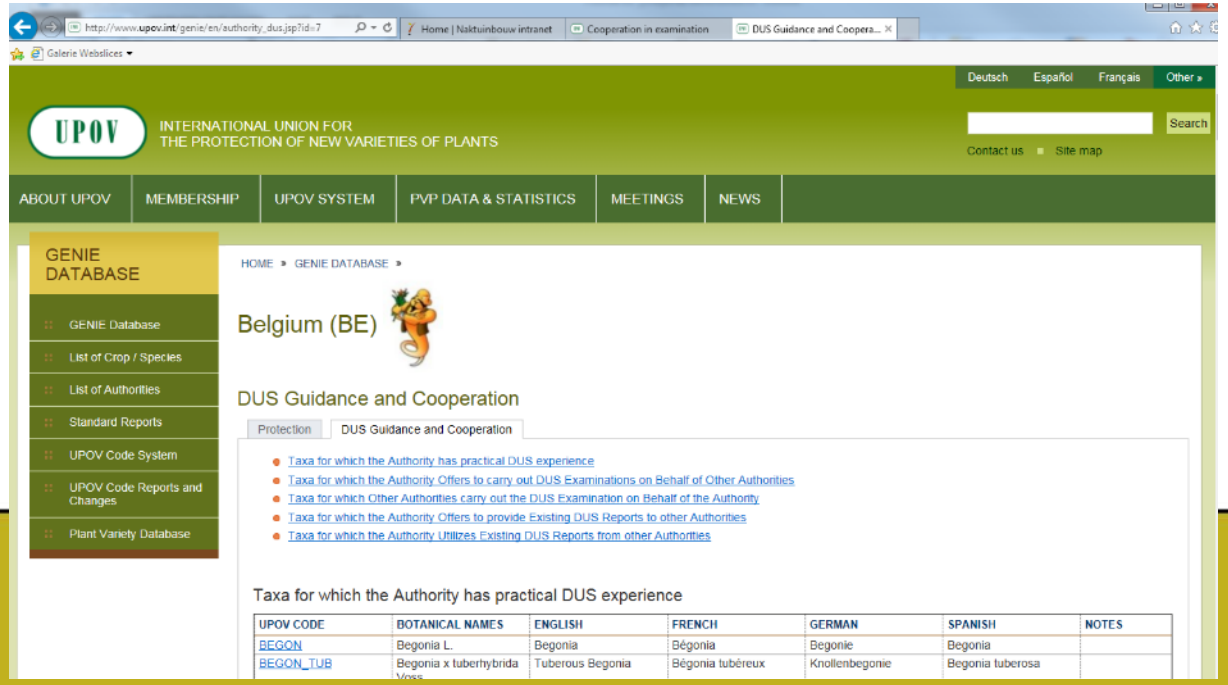
UPOV guidance on cooperation

Cooperation is essential for:

- Extending the protection to all plant genera and species
- Minimizing the costs for PVP
- Minimizing the work load for individual PVP offices

UPOV guidance on cooperation

- TGP/5 “EXPERIENCE AND COOPERATION IN DUS TESTING”
  - Section 8: Cooperation in Examination
- GENIE database
  - online information on GENera and specIEs (hence GENIE) in relation to protection offered by members of the Union, cooperation in examination, experience in DUS testing and the existence of UPOV Test Guidelines



Cooperation between authorities: Purchase of DUS reports

- **‘Take-overs’ of Naktuinbouw DUS reports by countries all over the world**
  - CPVO, Germany, UK, France, Finland, Slovenia, Croatia, Serbia, Turkey, Kenya, Russia, Brasil, Colombia, Ecuador, New Zealand, etc. etc.
- **‘Take-overs’ by Naktuinbouw**
  - Depending on the crop and country
  - Mainly agricultural crops (maize, wheat) or vegetables (lettuce, tomato)

Cooperation between authorities: Bilateral agreements

- **Naktuinbouw has many bilaterals:**
  - Potato: for Denmark, Belgium
  - Spinach: for United Kingdom, disease test for France.
  - Pea: disease test done by France
  - Alstroemeria: for Colombia
  - Flax: now done by France
  - We have ‘2 trials in one year’ for pea, bean, onion, cabbage, maize etc., with the 2nd trial in Czech Republic or for maize in Slovenia

Cooperation between authorities: Multilateral arrangements

- **Ornamentals in Europe**:
  - Chrysanthemum: United Kingdom,
  - Alstroemeria and Gerbera: the Netherlands,
  - Rose:
    - Cutflowers: the Netherlands,
    - Potroses: Germany,
    - Garden roses: United Kingdom.

Cooperation between authorities: Regional DUS testing

CPVO: Naktuinbouw is entrusted for many crops.

- Audits, harmonisation, communication

Africa:

- OAPI (UPOV in 2014, ‘french speaking’)
- ARIPO (not UPOV yet, ‘english speaking’)

Andean Pact:

- Bolivia, Colombia, Ecuador and Peru

  (not regional DUS test, but only ‘Regional priority date’)

Asia:

- EAPVPF

Other cooperations

- **Harmonizing protocols**
  - UPOV, CPVO, ISF (MATREF/Isolate collection)
- **Exchanging variety descriptions**
  - On our website
- **Sharing databases**
  - Potato (DNA), Phaleonopsis, tomato, pea, melon
- **Sharing DUS experience**
  - Projects, PVP training, calibration books, internships, DUS helpdesk

Collaboration Myanmar Netherlands

- 2015: Visit of Dutch Minister of Agriculture resulted in a Memorandum of Understanding

- Seed sector development is one of the components
- A comprehensive multi-annual plan was elaborated
- One of the topics is Development and Implementation of Myanmar Plant Variety Protection system

Collaboration Myanmar Netherlands

- Assistance in process of compliance of PVP Law with UPOV Convention
- 2016: Myanmar experts attend
  Plant Variety Protection Course
  in the Netherlands
- 2016: Seed Seminar In Myanmar concerning Seed Sector Development and National Seed Association
- 2017: Naktuinbouw organises a two-week Plant Variety Protection Course in Myanmar
- Etc.

Contents

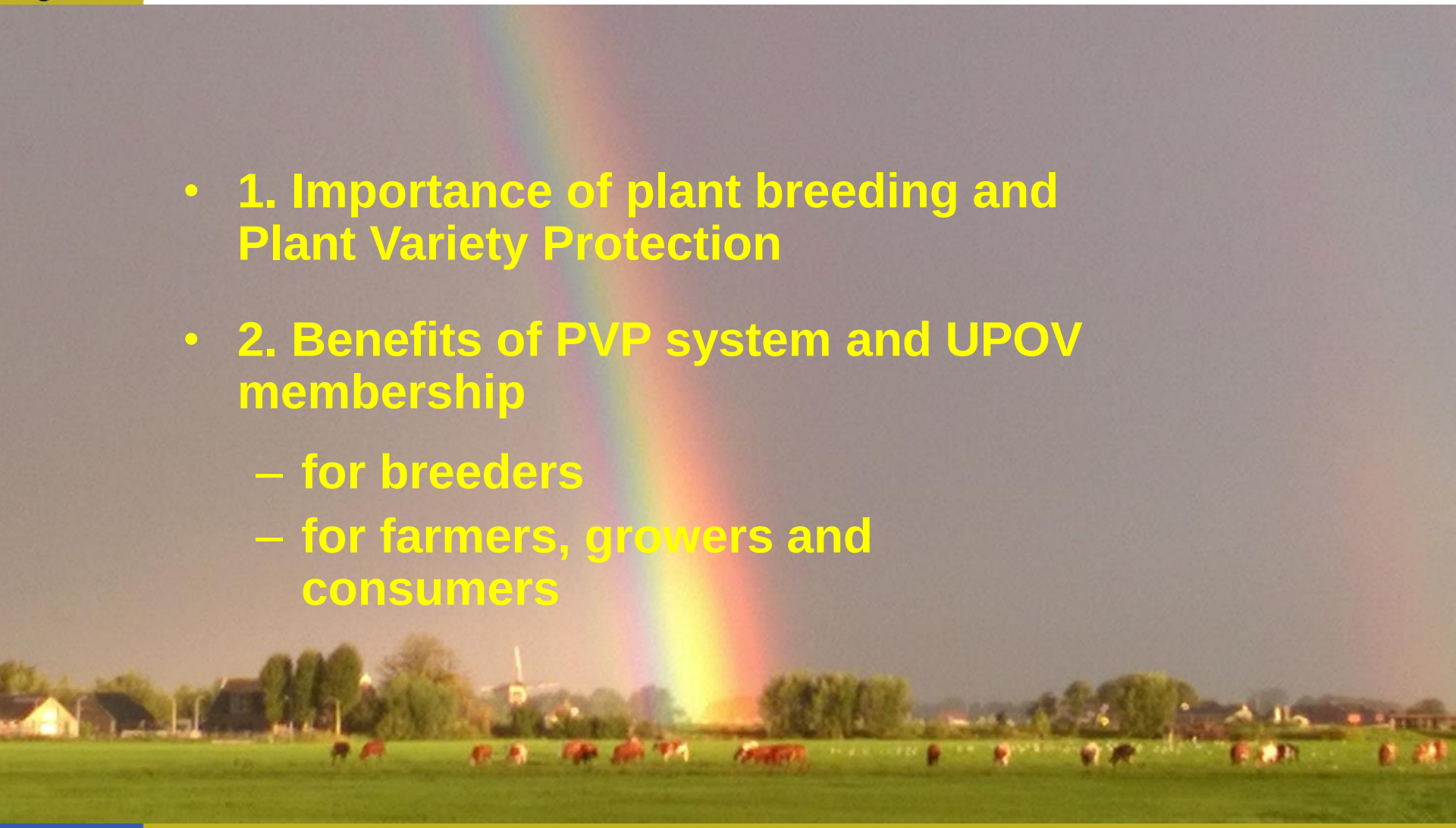
- **Plant Variety Protection in the Netherlands and the EU**

Raadvoorplantenrassen

CPVO
Community Plant Variety Office
Communautair Bureau voor plantenrassen

- **DUS Examination of Plant Varieties**
- **Cooperation in DUS examination**
- **Benefits of Plant Variety Protection system**

Benefits of PVP according to UPOV



- 1. Importance of plant breeding and Plant Variety Protection
- 2. Benefits of PVP system and UPOV membership
  - for breeders
  - for farmers, growers and consumers

Benefits of PVP system

(a) Breeders

- Diversity of breeders
- Number of breeders
- Investment in breeding

(b) Improved varieties

(c) Farmers, Growers, Consumers

- Delivering improved varieties to farmers/growers
- Delivering added value to consumers
- Income and Knowledge

(d) International dimension

- Development of new industry on foreign markets
- Access to foreign varieties and enhanced domestic programs

Benefits of PVP system

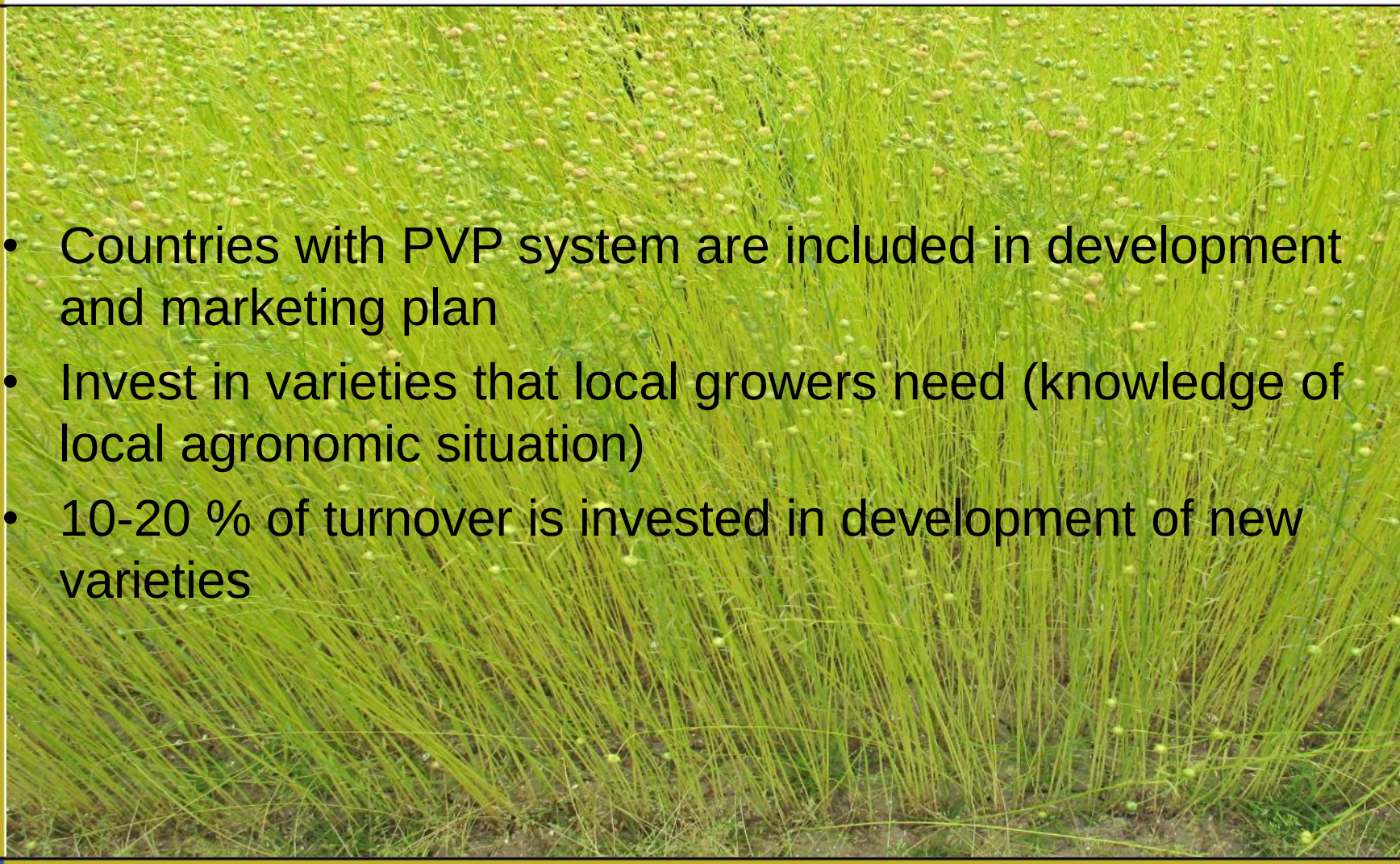
- According to recent estimates, new and improved varieties have accounted for more than 50% of overall yield increases for important crops in Europe
- The remaining growth was attributed to improved agricultural techniques, including fertilizers and better agronomic practices

Growers/Farmers viewpoint

- Increased yield
- Better availability of resistant varieties
- Adaption to (agro)climatic conditions
- Adaption to market driven characteristics, e.g. earliness
- Specialization

- Increase of income
- Become a breeder

Breeders viewpoint



- Countries with PVP system are included in development and marketing plan
- Invest in varieties that local growers need (knowledge of local agronomic situation)
- 10-20 % of turnover is invested in development of new varieties

Use of Plant Variety Protection

- Weighing up benefits against costs (Breeders)
- Factors influencing decisions
  - Confidence in PVP system
    - Confidence in DUS testing
    - Confidence in results
    - Independence of testing
  - Costs and duration of DUS testing
  - Security of varieties during DUS testing

Relevance of PVP

- Important factor to establish presence in a country
- Crop dependent, important for
  - Open pollinated crops
  - Vegetatively propagated crops
- Not important but gains importance
  - Hybrids
- Not always relevant for ornamentals
  - Closed chain production

Conclusion

- PVP has strong effect on breeding activities and resulting varieties
- Confidence in PVP system important for further development of PVP

Questions?

Quality in Horticulture