

# DUS Growing Test and Supporting Activities for Enforcement of PBR in Japan

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## DUS Growing Test in Japan

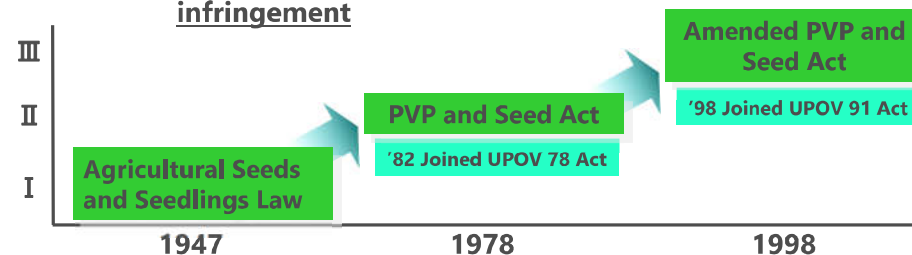
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Plant Variety Protection Seminar in China, Jan. 8-10, 2018

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## History of PVP System in Japan

Japan	UPOV
1947 <b>Agricultural Seeds and Seedlings Law</b>	
1972 <b>PVP and Seed Act</b>	1961/1972 Act
1978 <b>Join UPOV 1978 Act</b>	1978 Act
1982 <b>Amendment of PVP and Seed Act</b>	
1991 <b>Join UPOV 1991 Act</b>	1991 Act
1998 <b>Amendment of PVP and Seed Act</b>	
2003 <b>Strengthen against PBR infringement</b>	



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## Legal basis for NCSS to conduct DUS test (PVP and Seed Act)

### Article 15 (Examination of Applied Variety)

- (2) The Minister of Agriculture, Forestry and Fisheries shall, in the course of the examination of the applied variety, cause officers of the Ministry of Agriculture, Forestry and Fisheries to carry out on-site inspections or the Incorporated administrative agency [National Center for Seeds and Seedlings](#) > (hereinafter referred to as "NCSS") to carry out growing tests. However, this shall not apply where it is found unnecessary to do so for the purpose of the examination of the applied variety.
- (5) The NCSS may, with the consent of the Minister of Agriculture, Forestry and Fisheries, request relevant administrative organs, educational institutions or other persons whom it finds appropriate, to carry out growing tests prescribed in paragraph (2) of this Article.

### Article 47 (Examination of a Registered Variety)

Legal basis

- (1) The Minister of Agriculture, Forestry and Fisheries may order the holder of a breeder's right or of an exclusive exploitation right to submit entire plants or parts of plants of the registered variety or other material, where he/she finds it necessary in order to verify the maintenance of the expressions of the characteristics of the registered variety.
- (2) The Minister of Agriculture, Forestry and Fisheries shall cause officers of the Ministry of Agriculture, Forestry and Fisheries to carry out on-site inspections or cause the NCSS to carry out growing tests in the case prescribed in paragraph (1) of this Article.

> This English translation is not yet reflected that NCSS became a member of NARO in April 2016.

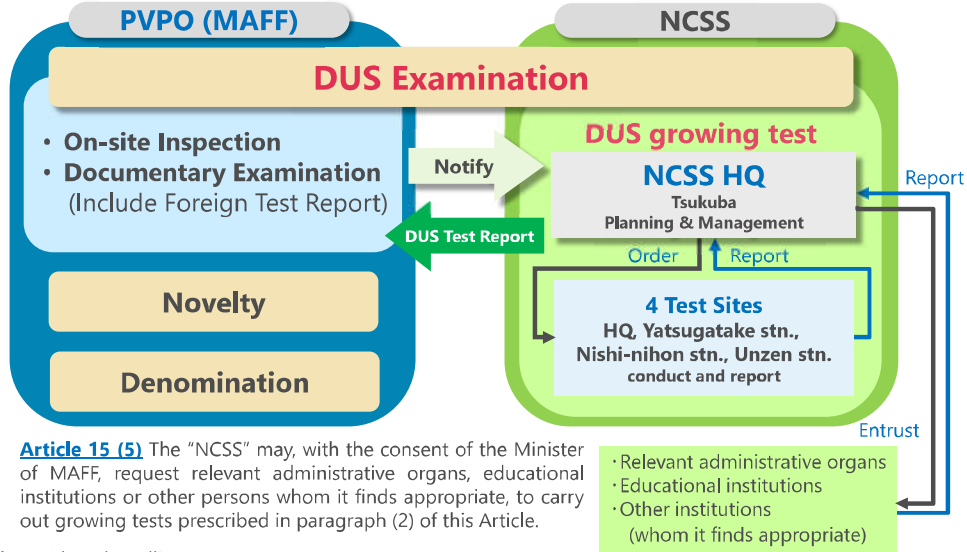
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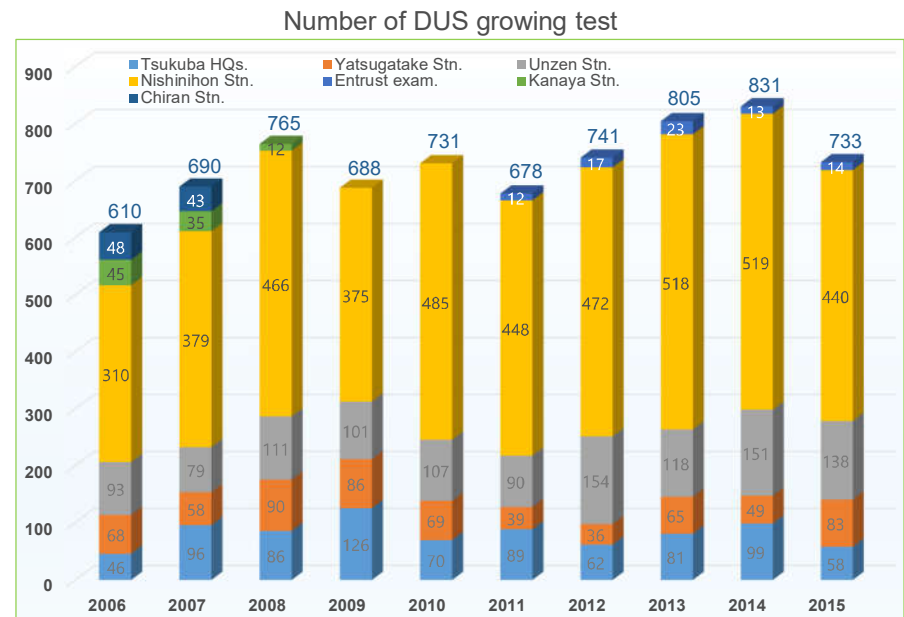
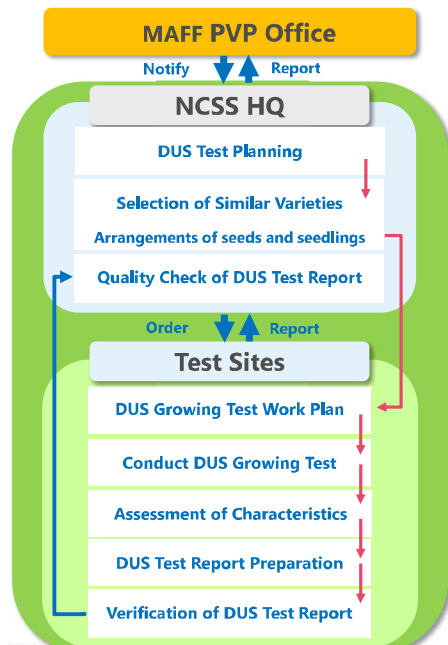
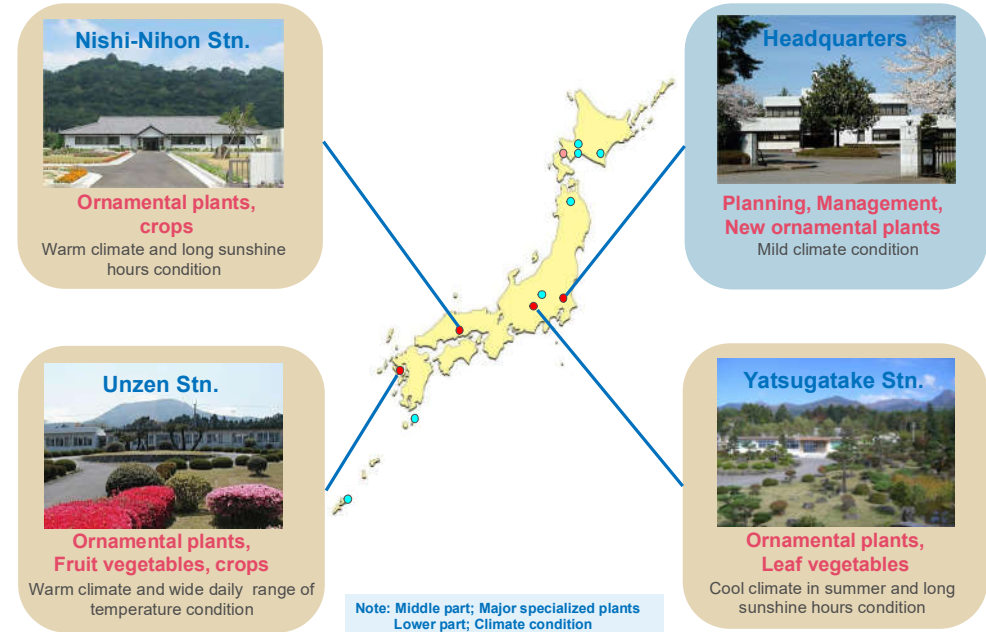
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The Plant Variety Protection and Seed Act

**Article 15 (2)** The Minister of MAFF shall, in the course of the examination of the applied variety, cause officers of the MAFF to carry out onsite inspections or the "NCSS" to carry out growing tests.



**Article 15 (5)** The "NCSS" may, with the consent of the Minister of MAFF, request relevant administrative organs, educational institutions or other persons whom it finds appropriate, to carry out growing tests prescribed in paragraph (2) of this Article.



Cultivation should be implemented according to the work plan for DUS growing test. It is executed under condition ensuring satisfactory growth for the expression of relevant characteristics of varieties.



Test Guidelines for **Tomato (*Solanum lycopersicum* L.)** : Each test should be designed to result in a total of at least 20 plants, which should be divided between at least two replicates.

Test Guidelines for **Chrysanthemum (*Chrysanthemum x morifolium* Ramat.)** : Each test should be designed to result in a total of at least 20 plants.

Characteristics are generally classified into 3 types (**Qualitative characteristic:(QL)**, **Quantitative characteristic:(QN)**, **Pseudo-Qualitative characteristic:(PQ)**) according to the type of expression.



Observation and Measurement of Characteristics

DUS assessment by 3 or more staffs.

- Observation and measurement of characteristics
- Assessment of distinctness and uniformity
- Assessment by 3 or more staff

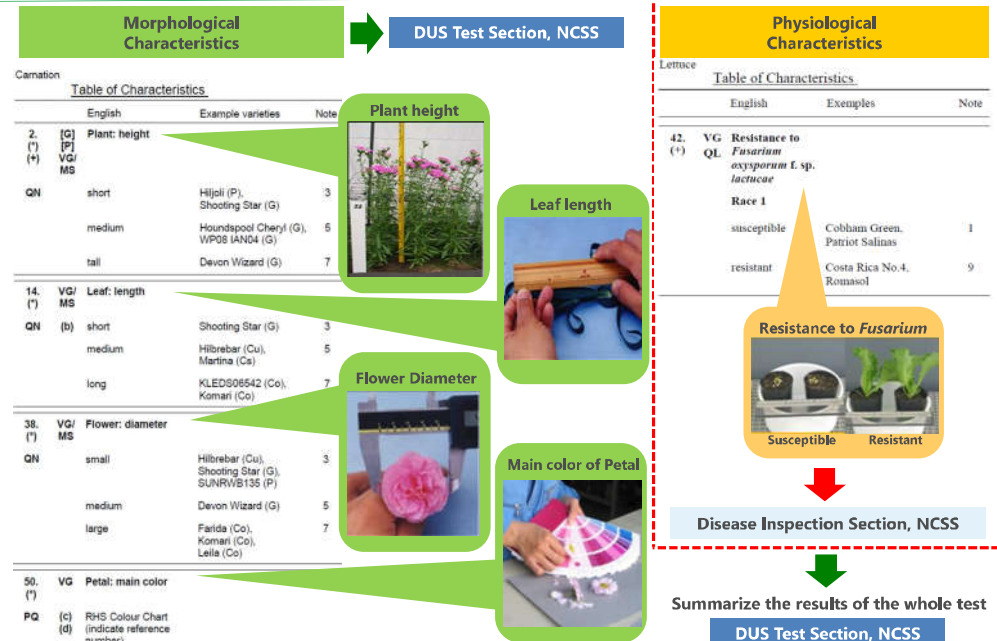
Characterization is evaluated on the basis of the 'Example variety' that are listed in the test guidelines. 'Example variety' is also important to develop internationally harmonized variety descriptions.



RHS colour chart

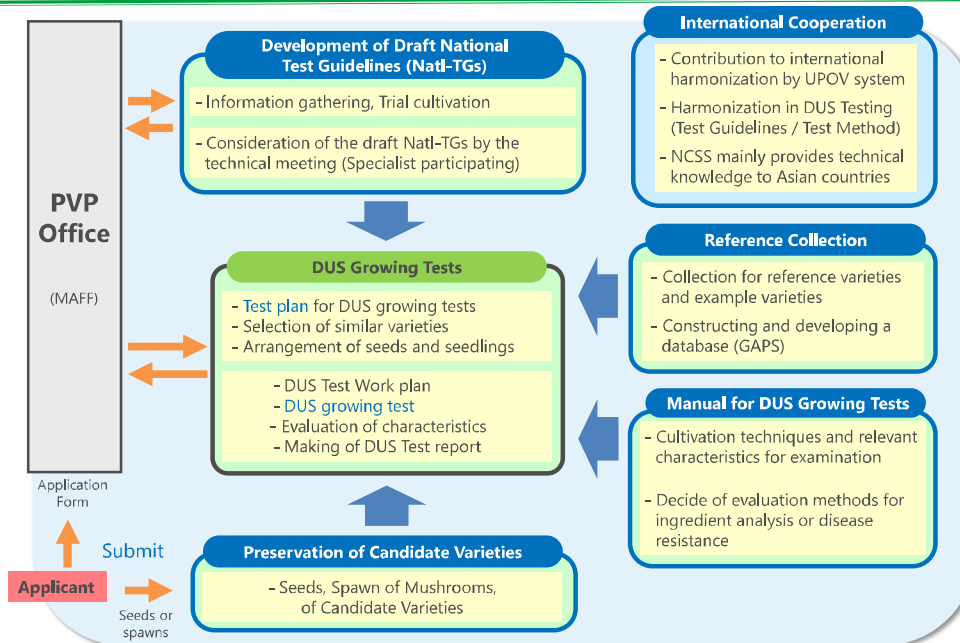
Photo taking

- Quantitative characters are evaluated the particular 'Example Variety' as an indicator.
- Detailed observation and measurement of characteristics
- Taking photo of plant parts

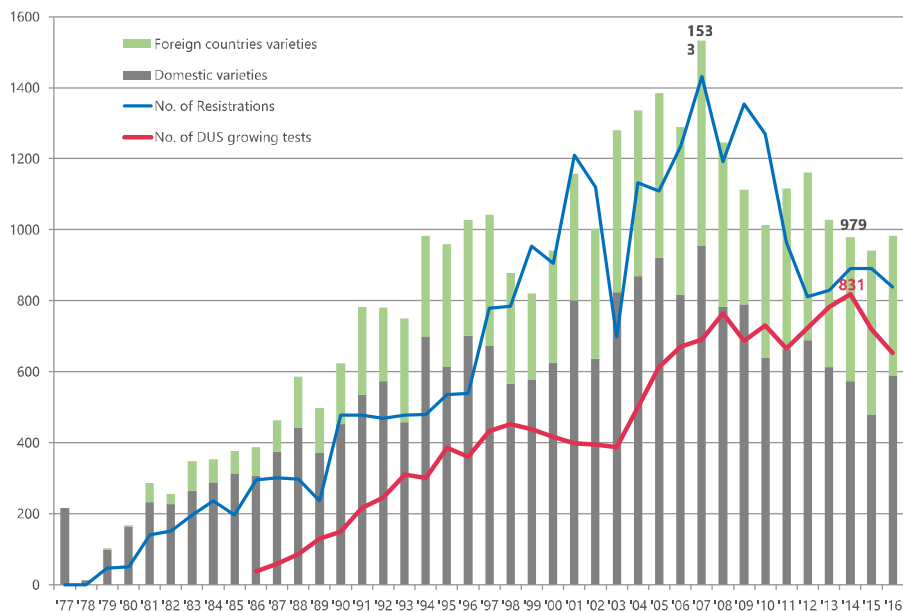


Application (2015)				Registration (2015)				Right to survive (2014)			
Rank	Country	Application	(%) to total	Rank	Country	Registration	(%) to total	Rank	Country	Right to survive	(%) to total
1	QZ	3111	21%	1	QZ	2844	23%	1	QZ	22557	21%
2	CN	2342	16%	2	US	1595	13%	2	US	22527	21%
3	US	1634	11%	3	CN	1589	13%	3	JP	8274	8%
4	UA	1075	7%	4	UA	946	8%	4	NL	7254	7%
5	JP	914	6%	5	JP	847	7%	5	RU	4246	4%
6	NL	799	5%	6	KR	619	5%	6	CN	4020	4%
7	KR	757	5%	7	NL	613	5%	7	KR	3932	4%
8	RU	743	5%	8	RU	544	4%	8	UA	3635	3%
9	AU	359	2%	9	BR	266	2%	9	ZA	2710	3%
10	BR	355	2%	10	ZA	233	2%	10	AU	2542	2%
:	:	:	:	:	:	:	:	:	:	:	:
Total		15,017	100%	Total		12,409	100%	Total		106,081	100%

Source: UPOV Board.  
Note: QZ(CPVO) has a common PVP system within the EU (28 countries).



Trend, Application and Growing test in Japan



International Cooperation

Dispatch of our staffs to the UPOV meeting

2011 TWV (USA)

2011 TWC (Korea)

JICA training course

PVP System course in Japan

JICA Project in Vietnam

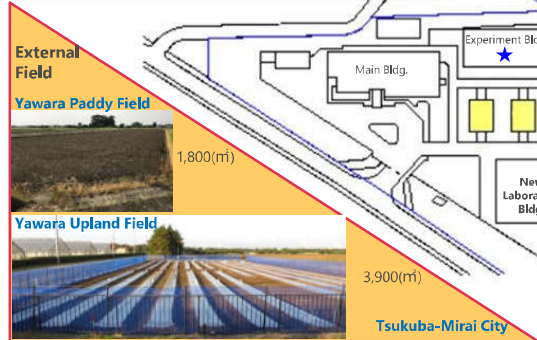
EAPVPF cooperation activity

In country training in Vietnam

Activities through the MoU

Harmonized with Naktuinbouw

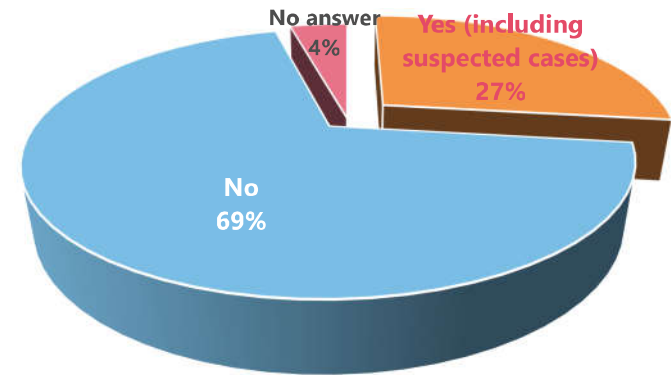
Center for Seeds and Seedlings, NARO HQ



Facilities for DUS Growing Test in NCSS HQ

Type	Classification	Area (m <sup>2</sup> )
Field	Cultivated field (External field)	800
	Plastic house	990
	subtotal	7,490
Facilities	Glasshouse	1,300
subtotal		1,300
Total		8,790

Have you ever been infringed on PVP?

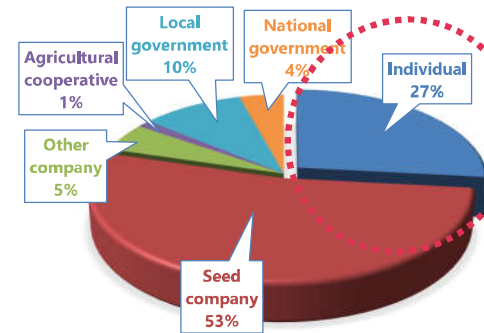


Quantity of responses: 640

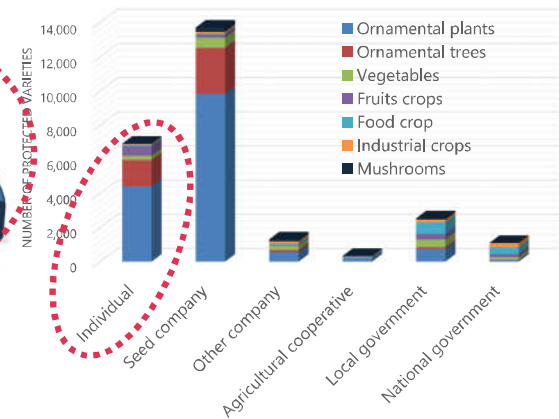
Supporting Activities for Enforcement of PBR in Japan

Number of Protected Varieties by Breeders

Ratio of Protected Variety by Breeders



Number of Protected Variety by Breeders and plant class



As of March 31, 2017

BREEDER

4 PVP G-men were assigned in the headquarters and Nishi-Nihon station of NCSS in 2005.



"In the NHK news program"



"In the newspaper reports"

# What is PVP G-men ?

## What is "PVP G-Men" ?

**NCSS Staff**  
(not government official)

with enough **knowledge and experience**  
on Intellectual Property Rights and DUS Testing

**Advisors** on PVP matters  
(no investigative authority)



*PBR holders should protect their rights by themselves.*

Original meaning of G-men in the United States : government officers, often FBI or DEA agents

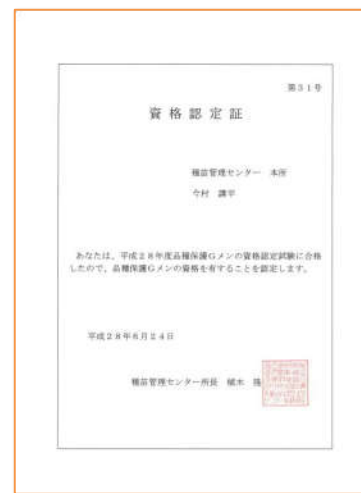
## Qualification as PVP G-men

- Knowledge of Intellectual Property, especially PBR, are essential for PVP G-men.
- Regulations of PVP G-men qualification, were enacted in 2007.
  - 1) To attend a PVP training course
  - 2) To pass a Qualifying examination
  - 3) Experience of DUS testing or Seed inspection

**These 3 points are requested for PVP G-men.**



Plant Variety Protection Seminar in China, Jan. 8-10, 2018



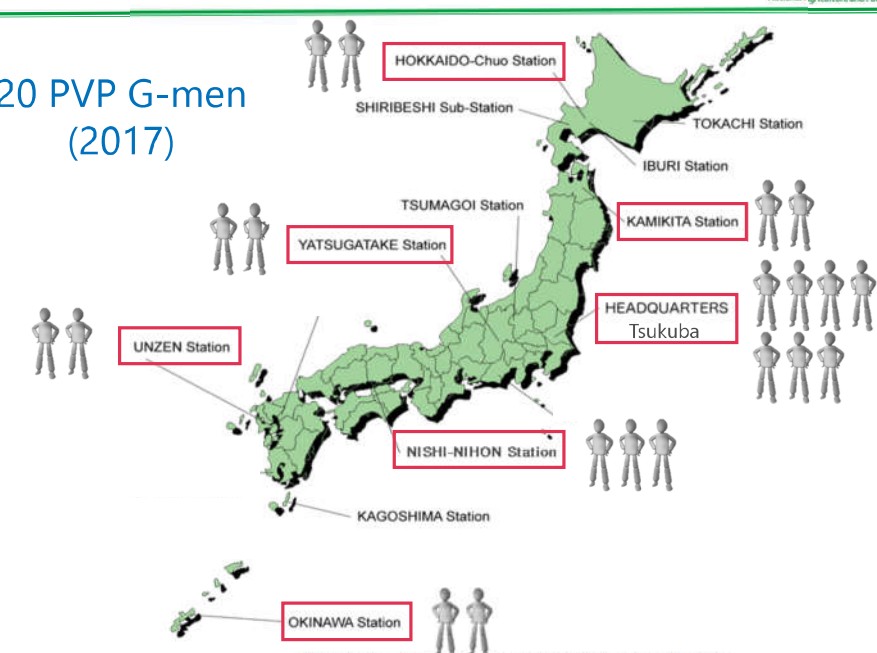
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Plant Variety Protection Seminar in China, Jan. 8-10, 2018

項目	内容	備考
1	種子の重要性、PVPの意義、PVPの目的、PVPの範囲、PVPの権利、PVPの義務、PVPの罰則、PVPの救済、PVPの争訟、PVPの国際的調和、PVPの発展、PVPの将来展望	
2	育種者の権利、育種者の義務、育種者の責任、育種者の権利の行使、育種者の義務の履行、育種者の責任の追及、育種者の権利の保護、育種者の義務の履行の確保、育種者の責任の追及の確保	
3	育種者の権利の行使、育種者の義務の履行、育種者の責任の追及、育種者の権利の保護、育種者の義務の履行の確保、育種者の責任の追及の確保	
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20 PVP G-men (2017)

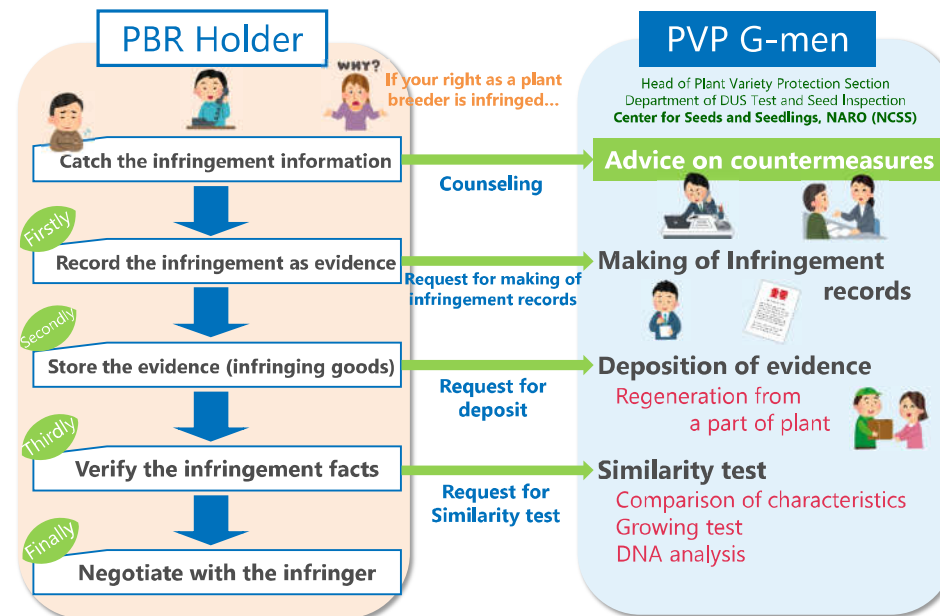


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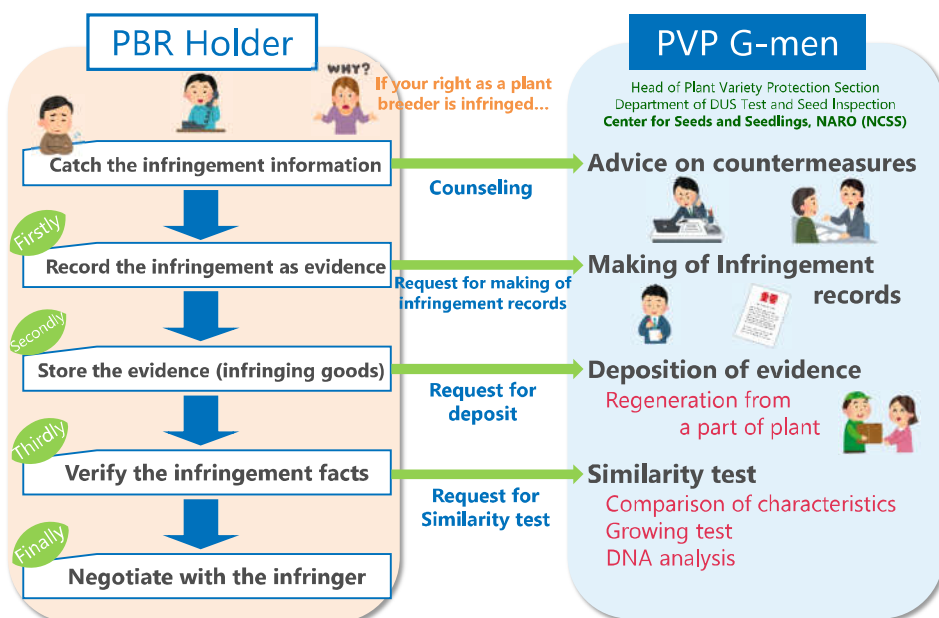
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# Activities of PVP G-men

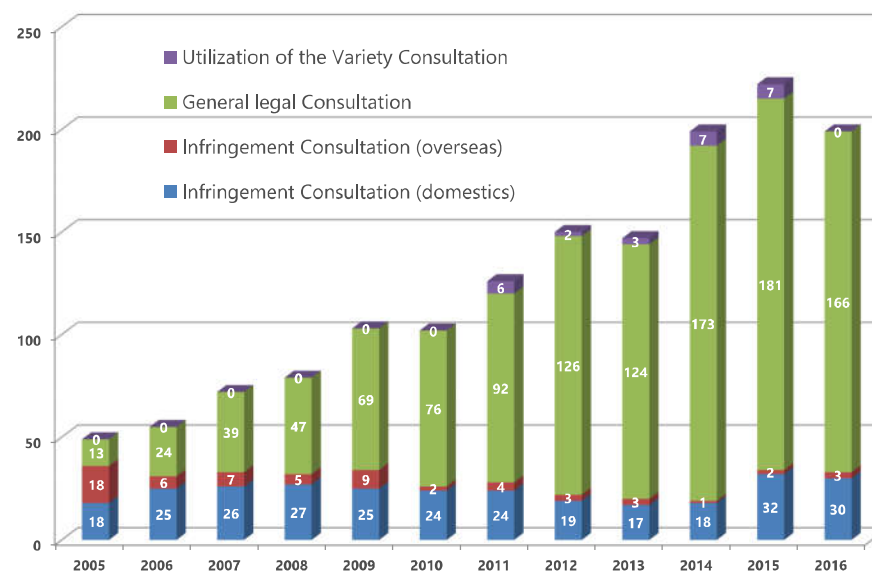
## Services of Plant Variety Protection Advisers (PVP G-men)



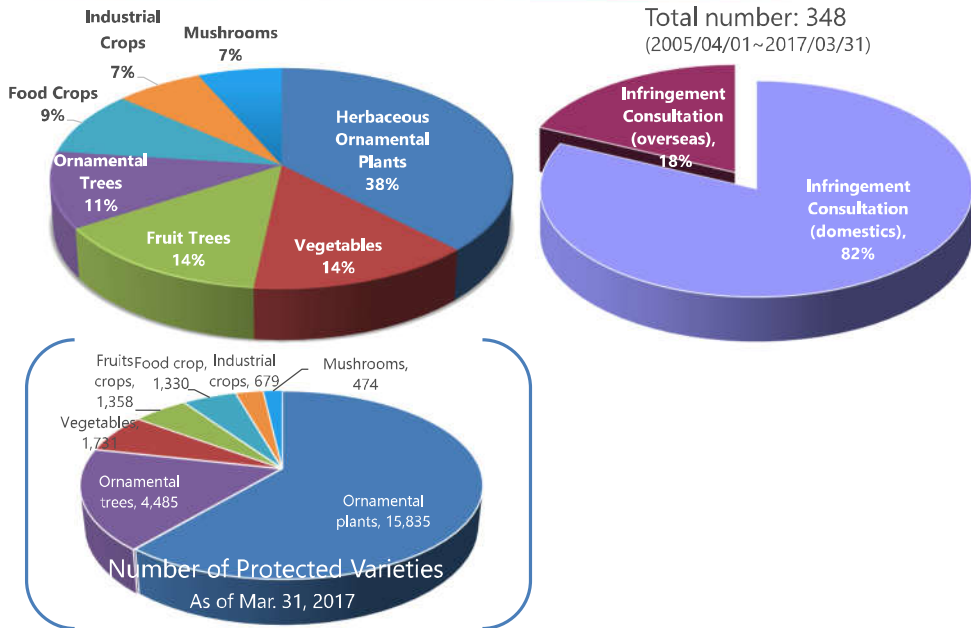
## Services of Plant Variety Protection Advisers (PVP G-men)



## Number of Consultation

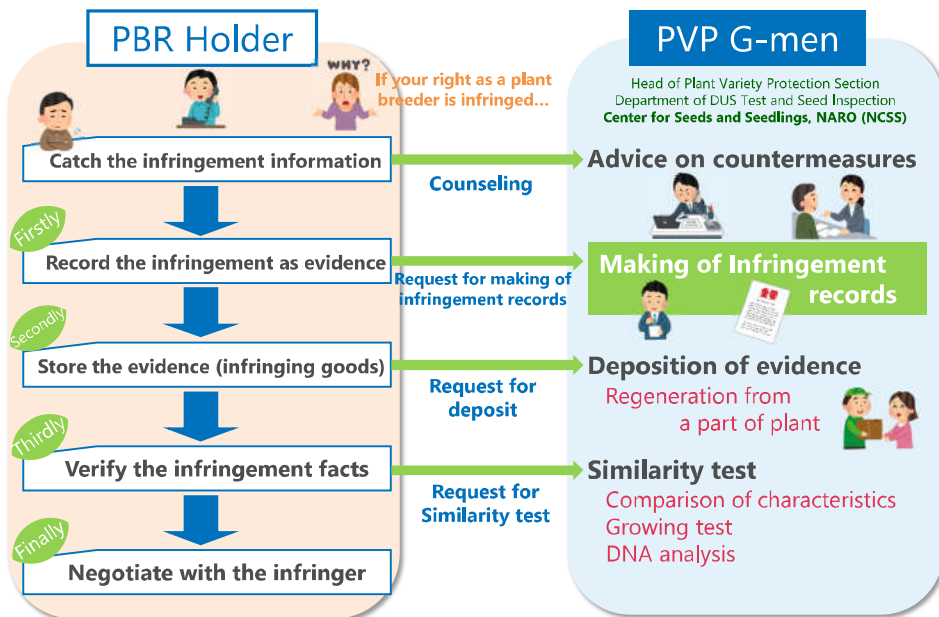


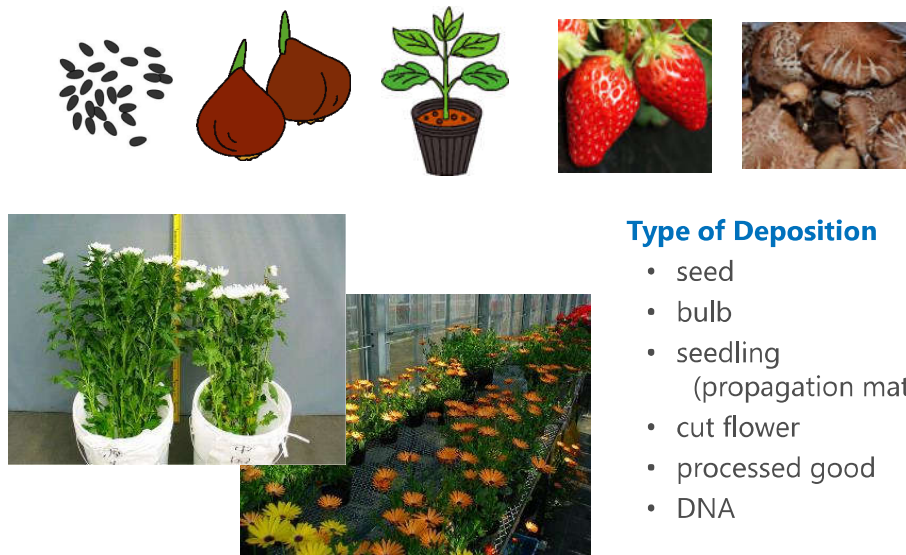
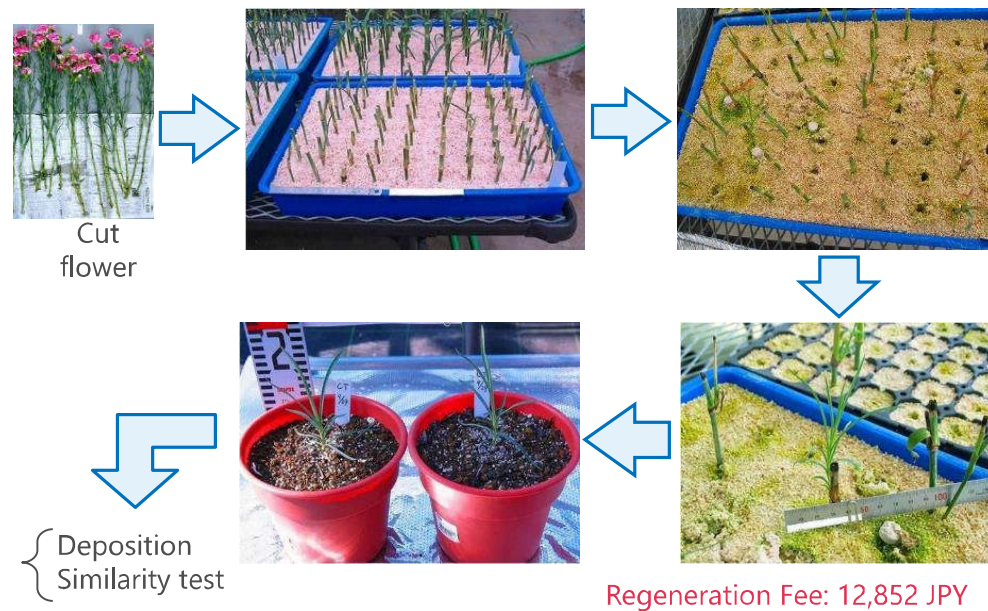
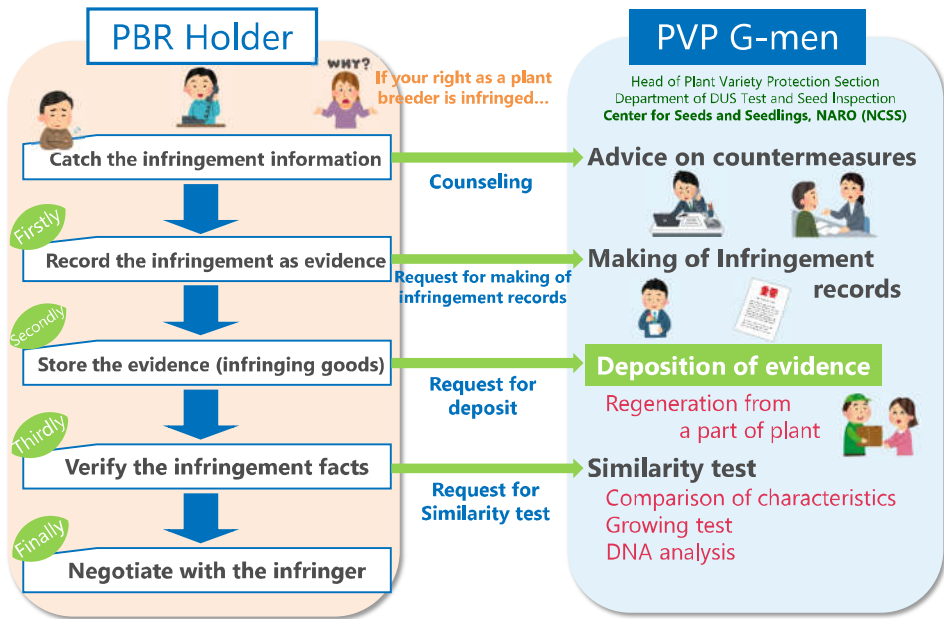




Survey and sampling in the market

Fee: 11,550 JPY + travel fee for G-men

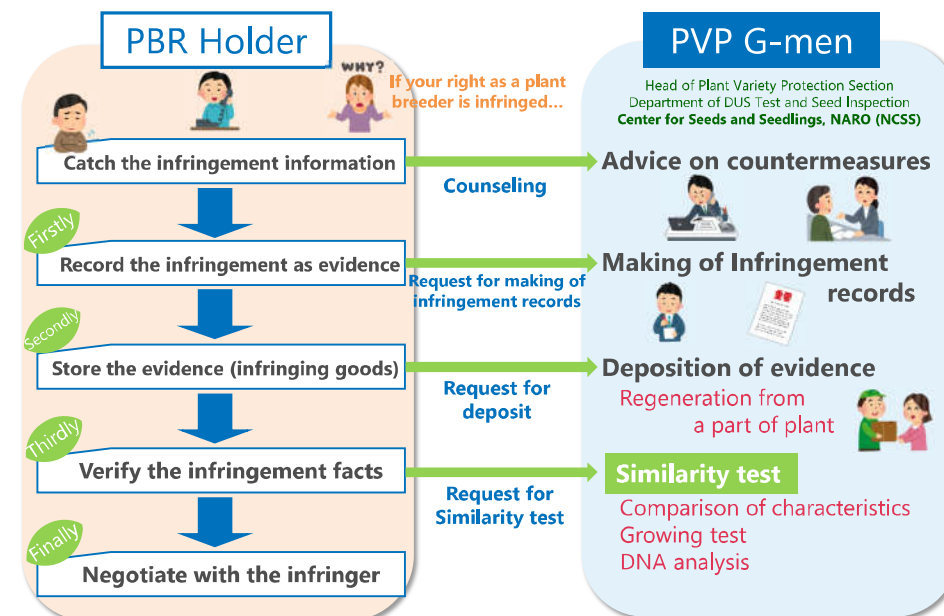




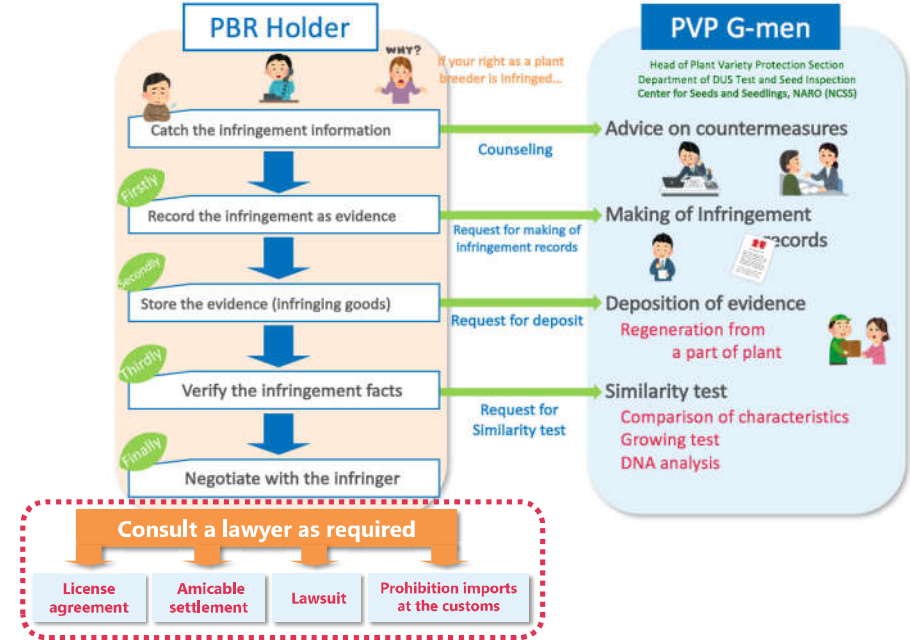
**Type of Deposition**

- seed
- bulb
- seedling (propagation material)
- cut flower
- processed good
- DNA

Deposition Fee: 2,808 - 5,508 JPY



Type of Tests	Detail of Similarity Tests
<p><b>Comparison of characteristics</b></p> <p>Fee: 22,680 JPY</p>	<p>To conduct comparative survey for the characteristics of both of protected variety and variety suspected of infringement which are provided from client, by visual assessment and measurement.</p>
<p><b>Growing test</b></p> <p>Fee: 129,600 JPY (minimum charge)</p>	<p>To survey characteristics comparison for the plants which are provided from client, by using the same methods of DUS growing test on the PVP system.</p>
<p><b>DNA analysis</b></p> <p>Fee: 34,344 JPY</p>	<p>To conduct DNA variety identification by using DNA from plant materials or tissues which are provided from client.</p>



Similarity test (DNA analysis)

Species		DNA analysis
Strawberry		CAPS
Kidney bean		RAPD-STS
Azuki bean		RAPD-STS SSR
Igusa rush		SSR
Tea		CAPS
Sweet cherry		SSR
Japanese pear		SSR
Sunflower		SSR
Maize		SSR
Carnation		SSR
Apple		SSR
Pineapple		Retrotransposon
Potato		SSR

CAPS : Cleaved Amplified Polymorphic Sequence  
 SSR : Single Sequence Repeat  
 RAPD : Random Amplified Polymorphic DNA  
 STS : Sequence Tagged Site

Thank you very much for your attention

国立研究開発法人  
 農業・食品産業技術総合研究機構  
 種苗管理センター  
 Center for Seeds and Seedlings NARO

<http://www.naro.affrc.go.jp/english/ncss/index.html>