

## Technical Working Party for Agricultural Crops

TWA/55/11

**Fifty-Fifth Session**  
**Seoul, Republic of Korea, June 15 to 18, 2026**

**Original:** English  
**Date:** June 18, 2026

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**REPORT**

*adopted by the Technical Working Party for Agricultural Crops*

*Disclaimer: this document does not represent UPOV policies or guidance*

## OPENING OF THE SESSION

1. The Technical Working Party for Agricultural Crops (TWA) held its fifty-fifth session in Seoul, Republic of Korea, from June 15 to 18, 2026.
2. The session was opened by Mr. Ľubomír Bašta (Slovakia), Chair of the TWA, who welcomed the participants.
3. The TWA was welcomed by Mr. Yang Joopil, Director General, Korea Seed & Variety Service (KSVS), who welcomed participants. A copy of the speech is provided as Annex I to this document.
4. The TWA received a presentation on the Plant Variety Protection System in the Republic of Korea by Mr. Cho Yong-Hyun, Senior Researcher, KSVS, as provided in Annex II to this document.

## ADOPTION OF THE AGENDA

5. The TWA adopted the agenda as provided in document TWA/55/1 Rev.

## DEVELOPMENT OF GUIDANCE AND INFORMATION MATERIALS

6. The TWA considered documents TWP/10/1 and TWA/55/9.

Revision of document TGP/7 “Development of Test Guidelines”: Number of growing cycles and concluding examination

7. The TWA considered the proposed amendments to document TGP/7 “Development of Test Guidelines”, to amend the universal standard wording for “number of growing cycles” and to when the testing of a variety may be concluded, as set out in document TWP/10/1, paragraphs 12 to 14.
8. The TWA agreed that the word “minimum” in relation to the duration of tests should be retained to ensure a clear understanding of the harmonized approach provided in Test Guidelines. The TWA agreed that the word “generally” in the same sentence would ensure sufficient flexibility for authorities to address particular cases.
9. The TWA agreed that the standard wording should amend to read as follows:

“(a) Single growing cycle:

“The minimum duration of tests should ~~normally~~ generally be a single growing cycle. The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test”

“(b) Two independent growing cycles:

“The minimum duration of tests should normally generally be two independent growing cycles. The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test”

## PROCEDURES FOR DUS EXAMINATION

10. The TWA received a presentation on “*Cannabis* L. Community Plant Variety Office (CPVO) Test Protocol (TP)” by an expert from the European Union, as provided in document TWA/55/7.

11. The TWA noted that the test guidelines of the European Union had been amended to ensure consistency with terminology used in the Single Convention on Narcotic Drugs of 1961, as amended in 1972.

## MEASURES TO IMPROVE SUPPORT PROVIDED FOR DUS EXAMINATION

12. The TWA considered document TWP/10/3.

### Procedure for discussing matters relevant for drafting national test guidelines at Technical Working Parties

13. The TWA noted that UPOV members had been invited to present characteristics, approaches or challenges for DUS examination relevant for drafting national test guidelines, as set out in document TWP/10/3, paragraph 10.

14. The TWA noted that no presentations had been proposed for discussion under this agenda item. The TWA agreed to invite UPOV members to propose presentations about national test guidelines which they would wish to discuss with the TWA.

### Possible measures on Test Guidelines (TG) and online tool for drafting Test Guidelines

#### *Subgroup on Test Guidelines*

15. The TWA considered the options for improving the Test Guidelines and the web-based TG template, as set out in document TWP/10/3, paragraph 15, and agreed as follows:

	Proposals	TWA
(a)	It is recommended that consideration is given to the need to review the standard wording of the Test Guidelines	- Agree to invite TWA experts to make proposals of standard wording in Test Guidelines to be revised, which should be considered in the context of revisions to the standard wording in document TGP/7 “Development of Test Guidelines”
(b)	It is recommended that the format of the Test Guidelines should be revised to take advantage of the opportunities for interactive viewing when accessed electronically: <ul style="list-style-type: none"> <li>(i) Active links to UPOV Guidance</li> <li>(ii) Pop-ups and hints</li> <li>(iii) Zoom</li> <li>(iv) Video explanations</li> </ul>	- Interactive content would be welcome in case additional resources would be made available for their development. - Additional Information available in UPOV members, such as calibration manuals, should be presented to the TWPs and assessed for coherence with UPOV guidance prior to considering their inclusion in Test Guidelines
(c)	It is recommended that consideration be given to the layout of the Test Guidelines to bring the additional information and diagrams closer to (or within) the table of contents.	- not a priority for the TWA
(d)	It is recommended that additional information provided in a Test Guidelines (for example details of a molecular technique or a laboratory	- the TWA recalled the existence of harmonized templates for disease resistance characteristics and molecular marker techniques.

	Proposals	TWA
	test) should have a harmonized template across all guidelines.	- the templates include data fields with contact details for additional information, reference materials and / or the publication with markers of methodologies used.
(e)	It is recommended that the format and layout of the Test Guidelines is such that it can be translated using automated electronic methods.	- The table of characteristics in Excel format would be useful for some authorities to translate the Test Guidelines
(f)	It is recommended that the removal of the four UPOV languages from the table of characteristics be considered	- TWA agreed that the table of characteristics with the four UPOV languages was useful to enable checking the translation of terminology used and should remain available.
(g)	It is recommended that consideration be given to the process of revising Test Guidelines, in particular to partial updates that affect only one part of the document, for example the technical questionnaire or single characteristics	- The TWA agreed it was important to identify changes introduced in different draft versions of Test Guidelines being revised. - The scope of partial revisions should be mentioned in the draft version of the Test Guidelines to be revised to facilitate the analysis of any changes introduced.
(h)	It is recommended that consideration be given to producing the technical questionnaires in a document separate to the Test Guidelines. It is important that the technical questionnaire be reviewed along with a revision of the Test Guidelines. However, it is not considered necessary for the Test Guidelines to be reviewed along with a revision of the Technical Questionnaire	- Separating the technical questionnaire from the Test Guidelines is not a priority. - UPOV technical questionnaires provide the basis for international harmonization and could be further expanded by UPOV members, in case required.

### *The Web-based Test Guidelines Template (TG Template)*

#### Access for Interested Experts

16. The TWA considered whether to develop criteria for granting access to Interested Experts to the TG template, as set out in document TWP/10/3, paragraph 19.

17. The TWA agreed it was important for UPOV members and observers to coordinate the comments on draft Test Guidelines to be provided using the web-based TG Template. The TWA agreed that the contact person for the TWA should be in charge of introducing comments to the web-based TG Template, or designate another person to act on their behalf.

#### Drafting of partial revisions using the web-based TG Template

18. The TWA considered the use of the web-based TG Template for partial revisions, as set out in document TWP/10/3, paragraph 22.

19. The TWA noted that the use of the TG Template for partial revisions could require the inclusion of standard wording used since the adoption of document TGP/7 "Development of Test Guidelines", in 2008. The TWA agreed to use the web-based TG Template for partial revisions on the basis that the scope of revision was clearly indicated and information to be checked was easily identified in the documents.

### TECHNICAL QUESTIONNAIRE, SECTION 4.2: "METHOD OF PROPAGATING THE VARIETY"

20. The TWA considered document TWP/10/5.

21. The TWA agreed the options for information on methods of propagating the variety to be provided in Technical Questionnaires for the following crops, as provided in Annex III to this report:

Document	
TG/4	Ryegrass
TG/6	Lucerne
TG/39	Tall Fescue
TG/66	Lupins
TG/67	Red Fescue
TG/144	Evening Primrose

TG/178	Fodder Radish
TG/180	Rescue Grass
TG/227	Hop
TG/228	Medics
TG/248	Common Millet
TG/249	Coffee

#### VARIETY DESCRIPTION DATABASES

22. The TWA received a presentation on “Digital management of the variety collection with Kora” from an expert from Italy, as provided in document TWA/55/6.

23. The TWA noted that the software Kora would be suitable for UPOV members that would wish to automate the management of variety collections. The TWA noted that calculations such as phenotypic distances would require the use of additional software, such as GAIA.

24. The TWA noted that the software Kora would be released the next months and made available free of charge. The TWA noted that Kora would be released as an open source software and that UPOV members were invited to contact Italy for collaboration of further development and maintenance.

#### IMAGE ANALYSIS AND NEW TECHNOLOGIES IN DUS EXAMINATION

25. The TWA received a presentation on “Development of image analysis method for DUS testing of maize varieties” from an expert from China, as provided in document TWA/55/5 Rev.

26. The TWA noted the levels of accuracy achieved on the assessment of different characteristics using high-throughput phenotyping and noted the plans to continue developing the methodology. The TWA discussed possibilities to scale up the methodology and the level of investment required.

27. The TWA noted that the methodology included the acquisition of images in open field conditions. The TWA discussed the challenges to standardize the assessment of color under different lighting conditions, including the use of a color calibration ruler for that purpose.

28. The TWA agreed to invite China to report further developments at its fifty-sixth session.

#### MOLECULAR TECHNIQUES IN DUS EXAMINATION

29. The TWA considered document TWP/10/4.

#### Confidentiality and ownership of molecular information

30. The TWA noted that the “Policy on the status of plant material submitted for DUS testing purposes” reported by the European Union would be included in a revision of document TGP/5, Section 11 “Examples of Policies and Contracts for Material Submitted by the Breeder”, to be put forward for adoption by the Council in October 2026.

31. The TWA noted the request from the Technical Committee that future discussions on confidentiality and ownership of molecular information should be organized based on concrete cases and specific situations.

32. The TWA noted the request from the TC that future discussions on the use of molecular information should focus on cooperation, such as the joint development of molecular markers, selection of molecular markers for variety identification and the management of variety collections.

### Cooperation between international organizations

#### *Harmonizing terms, definitions and methods between UPOV, OECD and ISTA*

33. The TWA noted that the leading expert from France had provided a report had been provided in 2026 to the Technical Working Party on Testing Methods and Techniques (TWM) on the terminology on molecular markers used at UPOV, OECD and ISTA, level of convergence and possible need for harmonization. The TWA noted that further developments would be reported to the TWM, at its fifth session.

#### *Updating the list of molecular markers used per crop*

34. The TWA noted the results of survey on the use of molecular markers, as set out in document TWP/10/4 and received a presentation from an expert from the Netherlands (Kingdom of the), as provided in document TWP/10/4 Add.

35. The TWA noted that the results of the survey had been provided as an excel file available for download from the TWA/55 webpage of the UPOV website, along with document TWA/55/4.

#### *Information on the use of molecular techniques in each organization: possible joint meeting*

36. The TWA noted that a joint workshop with UPOV, OECD and ISTA had been organized during the fourth session of the TWM, held in Cambridge, United Kingdom, from June 2 to 5, 2026.

#### *Common sets of molecular markers for variety identification*

37. The TWA noted discussions on the possible establishment of common sets of molecular markers for variety identification, in collaboration with OECD and ISTA, as provided in document TWP/10/4. The TWA noted that UPOV members had been invited to analyze and validate the molecular marker sets presented during the TWM/4 and report results in 2027.

### Exploring the potential use of UPOV model “Combining Phenotypic and Molecular Distances in the Management of Variety Collections” for bread wheat in France

38. The TWA received a presentation “Exploring the potential use of UPOV model combining phenotypic and molecular distances in the management of variety collections for bread wheat in France”, from an expert from France, as provided in document TWM/4/24-TWA/55/8.

39. The TWA discussed the methodology to establish the thresholds for phenotypic and molecular distances to calculate the “distinctness plus” threshold described in document TGP/15 to reduce the size of trials.

40. The TWA noted that pairs of varieties were assessed for distinctness on the basis of a “global assessment” during two visits to the trial at the main growth stages. The TWA noted the global assessment did not evaluate individual characteristics and was performed by experts familiar with DUS examination, but not necessarily with the crop.

41. The TWA noted that the methodology described by France in document TGP/15 was currently being tested in Brazil for soybean.

### Molecular markers for DUS tests in Italy

42. The TWA received a presentation on “Molecular markers for DUS tests in Italy”, from an expert from Italy, as provided in document TWA/55/10.

43. The TWA agreed that the presentation provided a summary of challenges and opportunities to be considered when deciding whether to use molecular markers to support DUS examination. The TWA noted the expression of interest of Brazil to collaborate on the development of molecular markers for rice varieties.

## EXPERIENCES WITH NEW TYPES AND SPECIES

44. No reports on experiences with new types and species were made during the fifty-fifth session of the TWA.

## EXPERIENCES AND NOTIFICATION OF ADDITIONAL CHARACTERISTICS OR STATES OF EXPRESSION

45. The TWA considered document TWP/10/2.

Proposals for additional characteristics and states of expression

46. The TWA considered the following additional characteristics notified, as set out in the Annex to document TWP/10/2:

- (a) Test Guidelines for Red fescue, Sheep's fescue, Hair fescue, Reliant hard fescue, Shade fescue, Pseudovina (document TG/67/5)
  - Red fescue (*Festuca rubra* L.): Plant: natural height when plants are fully extended
- (b) Test Guidelines for Ryegrass (document TG/4/8)
  - *Lolium multiflorum* L.: Plant: natural height when plants are fully extended
  - *Lolium perenne* L.: Plant: growth habit in summer of year of sowing
- (c) Test Guidelines for Wheat (document TG/3/12 Rev.)
  - Production of pollen (male sterility)

47. The TWA agreed that the additional characteristics should be posted on the "additional characteristics" page of the UPOV website and that it would not be necessary to initiate a partial revision of the Test Guidelines for their inclusion.

Ongoing European work on barley protocol

48. The TWA received a presentation on "Ongoing European work on barley protocol", by an expert from France, as provided in document TWA/55/4.

49. The TWA noted the ring-test organized in France and agreed on their usefulness for training, information exchange and calibration of assessments.

50. The TWA discussed the challenges for distinctness in spring barley varieties, with reduced level of variation among varieties for characteristics in the Test Guidelines. The TWA noted that new characteristics had been developed and were being used by France in the examination of spring barley varieties. The TWA noted that France was considering whether to propose the revision of the Test Guidelines for Barley.

## DISCUSSIONS ON DRAFT TEST GUIDELINES

51. The TWA discussed the following draft Test Guidelines, presented by the relevant Leading Expert:

Full draft Test Guidelines

Species	Basic Document	Leading Expert(s)
*Fodder Beet ( <i>Beta vulgaris</i> Fodder Beet Group) (Revision)	TG/150/4(proj.3)	Ms. Anne-Lise Corbel (FR)
*Grain Amaranth ( <i>Amaranthus</i> L.) (Revision)	TG/247/2(proj.2)	Mr. Lubomir Basta (SK)
*Mung Bean ( <i>Vigna radiata</i> (L.) R. Wilczek)	TG/VIGNA_RAD (proj.3)	Ms. Lixia Wang on behalf of Mr. Xiongfei Jiao (CN)
*Sugarcane ( <i>Saccharum</i> L.) (Revision)	TG/186/2(proj.6)	Mr. Ali Bhatti (AU)
White Clover ( <i>Trifolium repens</i> L.)	TG/38/7	Mr. Alex Talibudeen on behalf of Ms. Margaret Wallace (GB)

Partial revisions

Species	Basic Document	Leading Expert(s)
Sweet Potato ( <i>Ipomoea batatas</i> (L.) Lam.) - Adding a new characteristic “Leaf blade: anthocyanin coloration of nectary” - Adding a new shape to “Storage root: shape” - Adding new colors to “Storage root: main color of flesh” - Revision of example variety for char. 23	TG/258/1, TWV/55/3	Mr. Toru Watanabe (JP)

52. The TWA noted that the changes agreed during discussions on draft Test Guidelines had been recorded in the TG Template and that drafts presenting the changes in “revision-mode” had been made available on the TWA/55 webpage (see: <https://www.upov.int/en/about-upov/events/details?meeting-id=90354>).

RECOMMENDATIONS ON DRAFT TEST GUIDELINES

(a) Test Guidelines to be put forward for adoption by the Technical Committee

53. The TWA agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its sixty-second session, to be held in Geneva on October 19 and 20, 2026, on the basis of the following documents and the agreed changes presented in the drafts available on the TWA/55 webpage (see: <https://www.upov.int/en/about-upov/events/details?meeting-id=90354>).

Full draft Test Guidelines

<u>Subject</u>	<u>Basic Document(s) (2026)</u>
*Fodder Beet ( <i>Beta vulgaris</i> L. Fodder Beet Group) (Revision)	TG/150/4(proj.4)
*Grain Amaranth ( <i>Amaranthus</i> L.) (Revision)	TG/247/2(proj.3)
*Mung Bean ( <i>Vigna radiata</i> (L.) R. Wilczek)	TG/VIGNA_RAD(proj.4)
*Sugarcane ( <i>Saccharum</i> L.) (Revision)	TG/186/2(proj.7)
White Mustard ( <i>Sinapis alba</i> L.) (Revision)	TG/179/4(proj.1)

Partial revision

<u>Subject</u>	<u>Basic Document(s) (2026)</u>
Sweet Potato ( <i>Ipomoea batatas</i> (L.) Lam.) - Adding a new characteristic “Leaf blade: anthocyanin coloration of nectary” - Adding a new shape to “Storage root: shape” - Adding new colors to “Storage root: main color of flesh” - Revision of example variety for char. 23	TG/258/1, TWA/55/3

(b) Test Guidelines to be discussed at the fifty-sixth session

54. The TWA agreed to discuss the following draft Test Guidelines at its fifty-sixth session:

Full draft Test Guidelines

<u>Subject</u>	<u>Basic Document(s) (2026)</u>
Barley ( <i>Hordeum vulgare</i> L.) (Revision)	TG/19/11 Corr.
Fodder Radish ( <i>Raphanus sativus</i> L. var. <i>oleiformis</i> Pers.) (Revision)	TG/178/3

Tall Fescue, Meadow Fescue ( <i>Festuca pratensis</i> Huds. / <i>Festuca arundinacea</i> Schreb.) Revision	TG/39/8
Turnip Rape ( <i>Brassica rapa</i> L. var. <i>silvestris</i> (Lam.) Briggs.) (Revision)	TG/185/3
*White Clover ( <i>Trifolium repens</i> L.) (Revision)	TG/38/8(proj.1)

#### Partial revisions

<u>Subject</u>	<u>Basic Document(s) (2026)</u>
Cannabis, Hemp ( <i>Cannabis sativa</i> L.)	TG/276/2

55. The leading experts, interested experts and timetables for the development of the Test Guidelines are set out in Annex V to this report.

#### (c) *Test Guidelines for possible future discussions*

56. The TWA agreed that it should consider the development of Test Guidelines for the following at a future session:

<u>Subject</u>	<u>Basic Document(s) (2026)</u>
Common Millet ( <i>Panicum miliaceum</i> L.) (Revision)	TG/248/1
Couch Grass, Bermuda Grass ( <i>Cynodon</i> Rich.)	New

#### (d) *Participation in discussions of Test Guidelines from other TWPs*

57. The TWA agreed to propose that the following experts be added as interested experts to the following draft Test Guidelines being discussed by the Technical Working Party for Vegetable Crops (TWV), subject to the deadlines agreed in the report of the sixtieth session of the TWV:

<u>Subject</u>	<u>Interested experts (countries/organizations) <sup>1</sup></u>
Vegetable Marrow, Squash ( <i>Cucurbita pepo</i> L.) (Revision)	QZ, ARIPO, CLI, Euroseeds, ISF

## MATTERS FOR INFORMATION

### Reports on developments in plant variety protection from members and observers

58. The TWA noted the information on developments in plant variety protection from members and observers provided in document TWA/55/2 Prov. The TWA noted that further reports submitted to the Office of the Union until June 18, 2026, would be included in the final version of document TWA/55/2.

### Reports on developments in UPOV

59. The TWA noted the following matters for information, as set out in document TWP/10/6:

#### (i) UPOV genera and species database (GENIE database)

The TWA noted that UPOV members at the TWPs were invited to check the information on the new UPOV codes added to the GENIE database and the amendments to existing UPOV codes, as set out in the Annexes to document TWP/10/6.

#### (ii) PLUTO database

<sup>1</sup> for name of experts, see list of participants

- (iii) TWP workshops and webinars
- (iv) Discussion on “New technologies in DUS examination”
- (v) Corrections to Test Guidelines
- (vi) UPOV e-PVP DUS Report Exchange Module

60. The TWA noted that UPOV members were invited to use the new “UPOV e-PVP DUS Report Exchange Module” to facilitate cooperation in variety examination. The TWA noted that the requirement for using the Module was for the representative to the Council to acknowledge its terms of use.

#### DATE AND PLACE OF THE NEXT SESSION

61. At the invitation of Ghana, the TWA agreed to hold its fifty-sixth session in Accra, from June 21 to 24, 2027.

#### CHAIR

62. The TWA agreed to propose to the TC that it recommend to the Council to elect Ms. Anne-Lise Corbel (France) as the next Chair of the TWA.

63. The TWA thanked Mr. Ľubomír Bašta for chairing the TWA and noted that he was awarded a UPOV bronze medal in recognition of chairing the TWA from 2024 to 2026.

#### FUTURE PROGRAM

64. The TWA agreed that documents for its fifty-fifth session should be submitted to the Office of the Union by May 7, 2027. The TWA noted that items would be deleted from the agenda if the planned documents did not reach the Office of the Union by the agreed deadline.

65. The TWA proposed to discuss the following items at its next session:

1. Opening of the session
2. Adoption of the agenda
3. Development of guidance and information materials (document to be prepared by the Office)
4. Procedures for DUS examination (presentations invited)
5. Variety description databases (presentations invited)
6. Image analysis and new technologies in DUS examination (presentations invited)
7. Molecular techniques in DUS examination (presentations invited)
8. Experiences with new types and species (oral reports invited)
9. Notification of additional characteristics or states of expression (reports invited)
10. Support for drafting national test guidelines (presentations invited on characteristics, approaches or challenges for national test guidelines)
11. Measures to improve support provided for DUS examination
12. Discussion on draft Test Guidelines (Subgroups)
13. Recommendations on draft Test Guidelines
14. Date and place of the next session
15. Future program
16. Adoption of the report on the session (if time permits)

Matters for information

17. Reports from members and observers (written reports to be prepared by UPOV members and observers)
18. Report on developments in UPOV (general developments, including variety denominations, information databases, exchange and use of software and equipment)
19. Closing of the session

VISIT

66. On Wednesday, June 17, 2026, the TWA visited the Central Northern Crop Research Center, National Institute of Crop Science (NICS), Rural Development Administration (RDA), in Suwon, where the TWA was welcomed by Mr. Jung-Pil Seo, Director, and Mr. Eokkeun Ahn, Rice Breeder. The TWA received information on the following breeding programs:

- Maize: Mr. Hwan Hee Bae
- Rice: Mr. Woong Jo Hyun
- Oat and triticale: Ms. Sujeong Kim
- Introduction to tongil rice: Ms. Mijin Chae

67. The TWA also visited the National Agricultural Museum of Korea in Suwon, where the TWA was welcomed by Mr. Lim SungKyu, Chief of Communications and Partnerships Office.

68. In the afternoon, the TWA visited the Suracheong Rice Processing Complex in Hwaseong, where the TWA was welcomed by Mr. Kyung-Goo, CEO, and Mr. Song Seol Lee, Head of Management Division, who provided the TWA with information on the activities of the Suracheong Rice Processing Complex. The TWA received a presentation from Mr. Kim Eungbon, Executive Advisor of the SEEDPIA breeding company and further information on the rice varieties bred by SEEDPIA by Mr. Cho Yoo-Hyun, President and Breeder at SEEDPIA. A copy of the presentation is provided in Annex IV to this report.

69. *The TWA adopted this report at the close of its session.*

[Annex I follows]

<p>UPOV TWA/55 June 15, 09.05~09.10</p>
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## Opening Ceremony Welcome Remarks

Distinguished representatives of the UPOV Office, plant variety protection and DUS examination experts from each country, and all participants joining us both online and in person, it is my great honor and pleasure to welcome you all.

I am Yang Joopil, Director General of the Korea Seed and Variety Service under the Ministry of Agriculture, Food and Rural Affairs of the Republic of Korea.

It gives me great pleasure that the 55th session of the UPOV Technical Working Party for Agricultural Crops is being held here in Seoul.

To those who have traveled to Seoul, I extend my warmest welcome. To those joining us virtually, I extend my same gratitude for your participation.

The TWA is a valuable forum where we share technical experience in crop variety examination and discuss better examination approaches.

Today, agriculture is facing many challenges, including climate change, food security, and the spread of pests and diseases.

In this context, it is becoming even more important to develop excellent new varieties and examine them in a fair and reliable manner.

Since introducing the plant variety protection system in 1997, the Republic of Korea has made sustained efforts to build a fair and transparent variety examination framework.

Recently, we have been progressively integrating new technologies, including digital tools, image analysis, and molecular markers, into the variety examination process.

Next year, Korea will celebrate the 30th anniversary of the establishment of its plant variety protection system.

Building on the experience accumulated over the years, the Korea Seed and Variety Service will continue working to improve the accuracy and reliability of variety examination.

With this in mind, I sincerely hope that this meeting will provide a meaningful opportunity for substantive and constructive exchange.

I also hope that, during your stay in Seoul, you will have the opportunity to experience Korea's rich culture and warm hospitality.

In closing, I would like to express my sincere appreciation to the UPOV Office and all those who have contributed to the preparation of this meeting.

Thank you very much for your attention.

# Plant Variety Protection in Korea

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, June 2026

KSVS

1

## Contents

01	Agricultural Circumstances	02	Seed Industry of Korea
03	Plant Variety Protection in Korea	04	Future Development in PVP

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

2

# 01

## Agricultural Circumstances

Overview of Korea's farming landscape and key crop statistics

3

### Introduction of Korea

#### General

Land area **10 million ha**

Population **51.4 million**

#### Agriculture (2024)

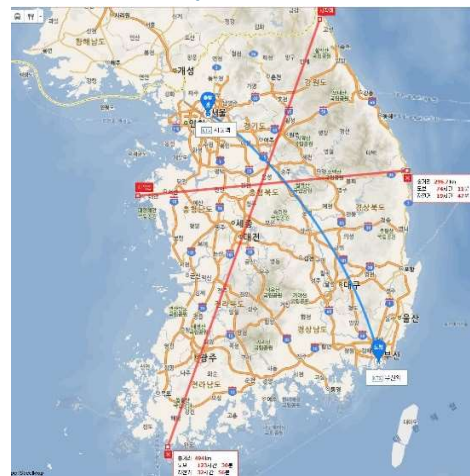
Farm households **973,000 (4.4%)**

Farm population **2,004,000 (4.4%)**

Cultivated land **1.5 million ha**

Area per household **1.5 ha**

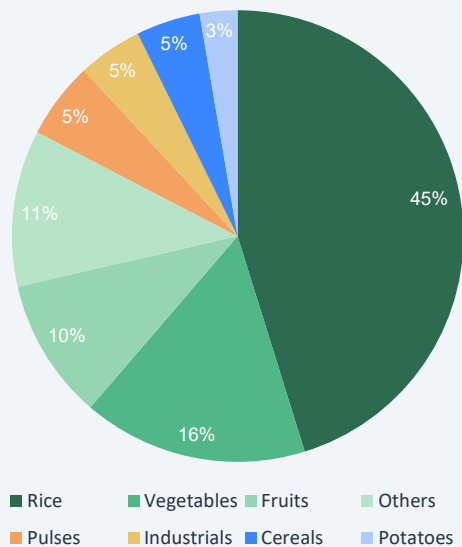
Map of Korea



Located in East Asia 35°N, 127°E

4

## Cultivated Area by Crops (2024)



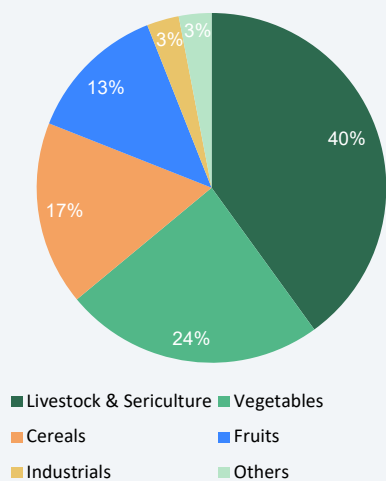
Crop	Area (ha)	(%)
<b>Rice</b>	<b>697,713</b>	<b>45.2</b>
Vegetables	248,378	16.1
Fruits	156,583	10.1
Others	172,771	11.2
Pulses	84,750	5.5
Industrials	71,279	4.6
Other Cereals	38,210	2.5
Barleys	32,834	2.1
Potatoes	41,700	2.7
<b>Total</b>	<b>1,544,218</b>	<b>100.0</b>

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

5

## Agricultural Products in Market Prices (2024)

Total Production: 60,767 billion KRW

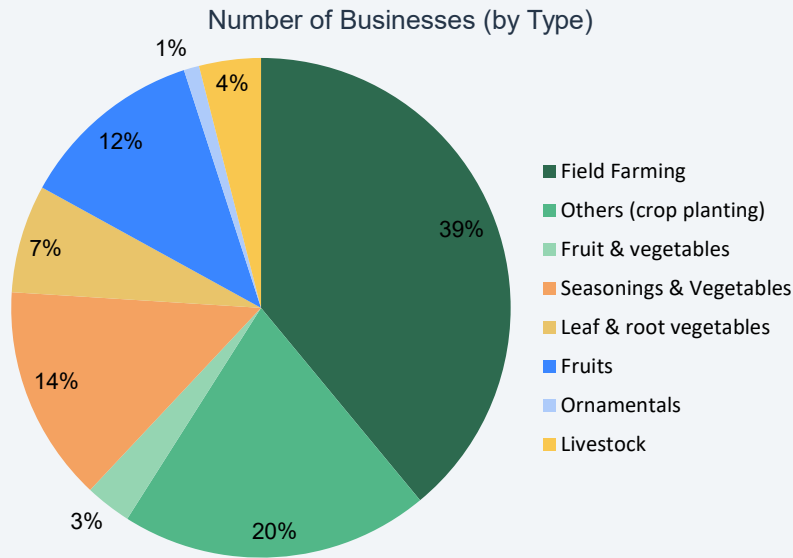


Crop	Prod. (bil. KRW)	(%)
Apple	2,120.1	3.5
Strawberry	1,558.4	2.6
Grapes	1,416.8	2.3
Chinese cabbage	1,163.4	1.9
Tomato	1,130.6	1.9
Onion	1,094.2	1.8
Red pepper	1,004.0	1.7
Peach	971.5	1.6
Garlic	991.0	1.6
Welsh onion	913.2	1.5
Water melon	613.3	1.0
Ornamentals	534.4	0.9

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

6

## Agricultural Business Overview



Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

7

# 02

## Seed Industry of Korea

Market capacity, trade volume, and industry structure

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

8

## Capacity of Seed Industry (2024)

**9,719**

Total Seed Market  
(billion KRW)

**~700M**

USD  
(~1.4% of world market)

**2,143**

Seed Companies

**1,311**

Seedling Companies

### Seed Companies

Sales > 40B KRW **1.1%**

5B < Sales < 40B **7.3%**

Sales < 5B KRW **91.6%**

### Seedling Companies

Sales > 1B KRW **23.8%**

0.4B < Sales < 1B **31.2%**

Sales < 0.4B **45.0%**

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9

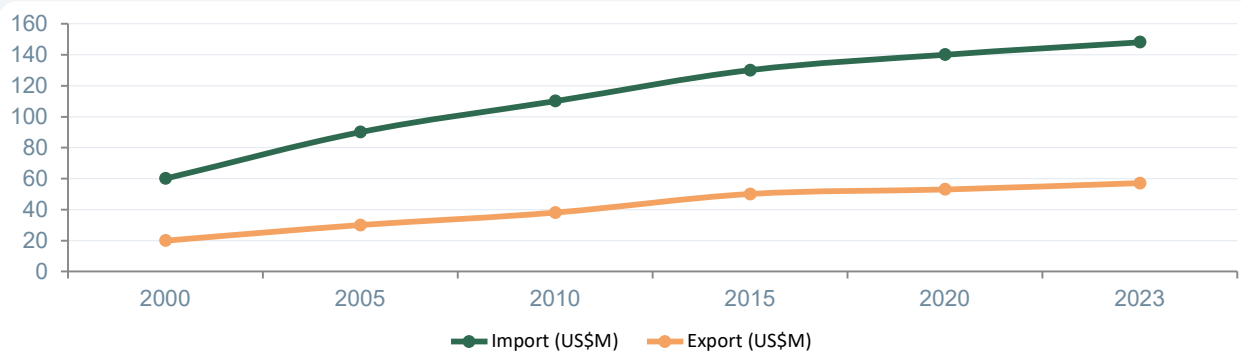
## Import and Export of Seeds (2023)

**21,204 ton**

Total Seed Import Volume

**2,341 ton**

Total Seed Export Volume



Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

10

## Import & Export by Crops (2023) Unit: US\$

Crop	Import (US\$)	Imp %	Export (US\$)	Exp %
Cereals	9,850,000	6.7	680,000	1.0
Forages	32,500,000	22.0	96	0.0002
Ornamentals	7,200,000	4.9	14,800	0.03
Vegetables	85,100,000	57.4	52,100,000	91.2
Forestry	2,300,000	1.6	500	0.0008
Fruits	290,000	0.2	5,200	0.007
Others	11,060,000	7.5	4,300,000	7.5
<b>Total</b>	<b>148,300,000</b>	<b>100</b>	<b>57,100,000</b>	<b>100</b>

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

11

# 03

## Plant Variety Protection in Korea

Legal framework · Administration · Statistics · International cooperation

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

12

## Overview of Korea Seed & Variety Service (KSVS)



Protection of plant breeders' rights

Enhancement of agricultural competitiveness

Support for the development of the seed industry

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

13

## Plant Variety Protection (PVP) System in Korea

### Korea Seed & Variety Service

- Ministry of Agriculture, Food and Rural Affairs
- Agricultural seed & variety
- Application(~25)  
14,284 variety
- Registration(~25)  
10,792 variety

### National Forest Seed & Variety Center

- Korea Forest Service
- Forest seed & variety
- Application(~25)  
780 variety
- Registration(~25)  
453 variety

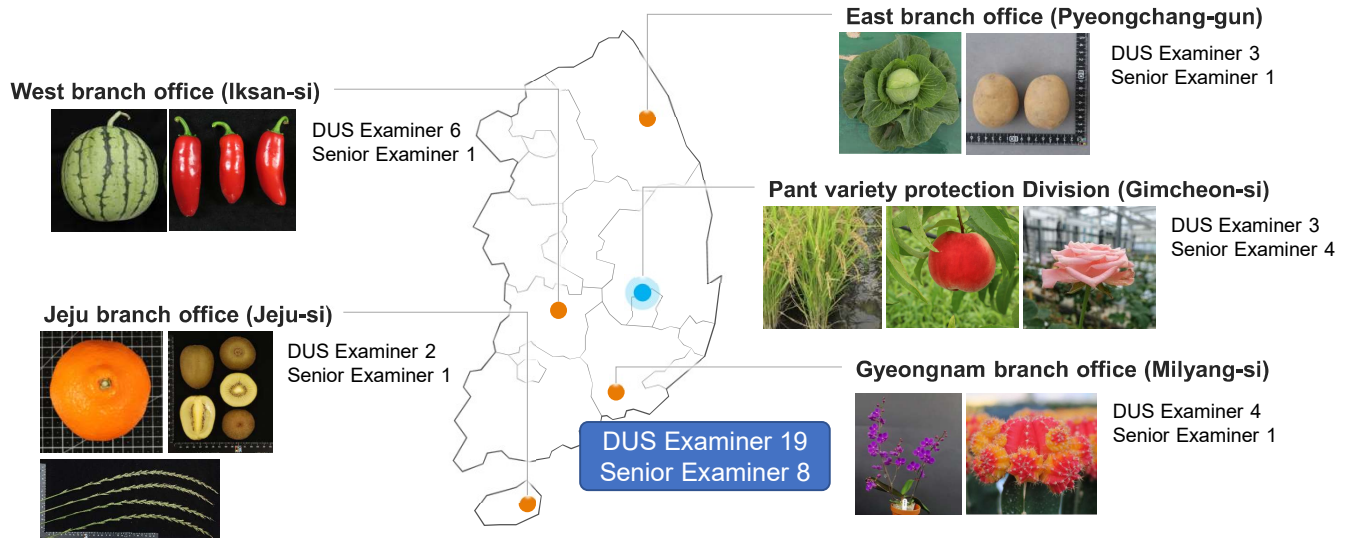
### National Institute of Fisheries Science

- Ministry of Oceans and Fisheries
- Aquatic seed & variety
- Application(~25)  
51 variety
- Registration(~25)  
37 variety

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

14

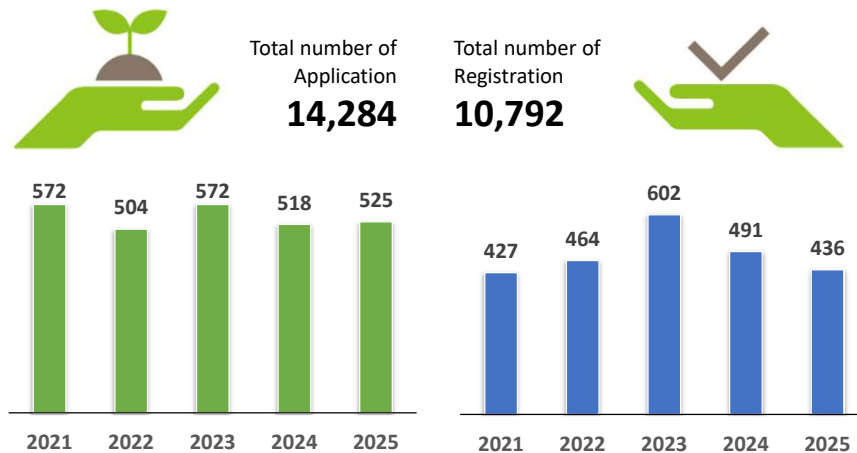
## Organization of KSVS (DUS Examination)



Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

15

## PVP Application & Registration (2025)

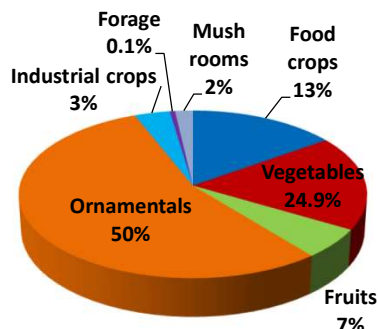


Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

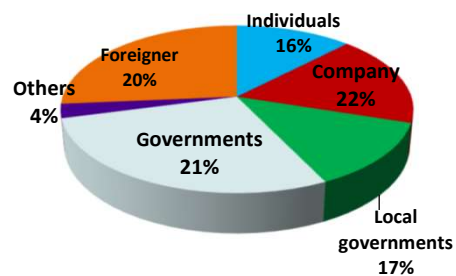
16

## Statistics of PVP in KSVS

Application share by Crops



Application by type of Applicant



Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

17

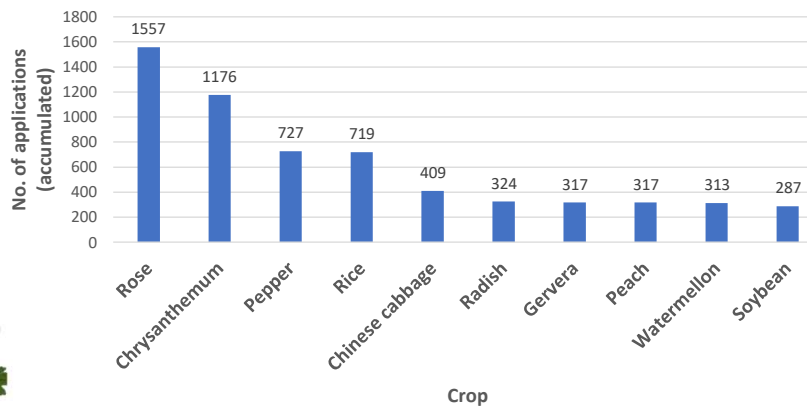
## PBR Status

- PBR Applications in Korea

# 2025

**Total: 582 varieties**

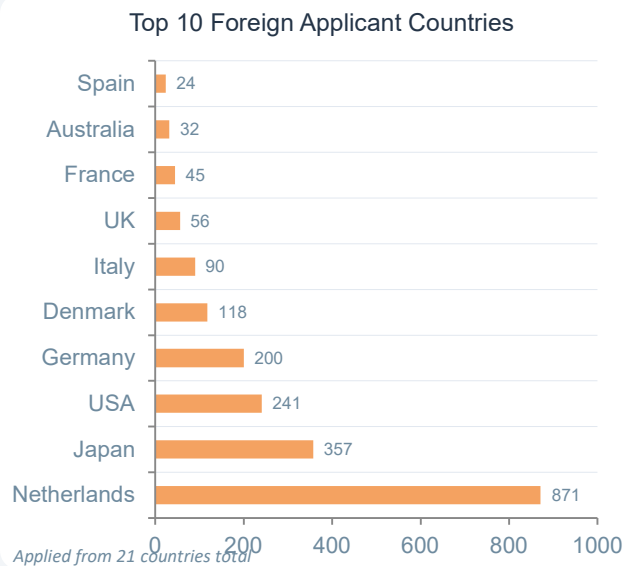
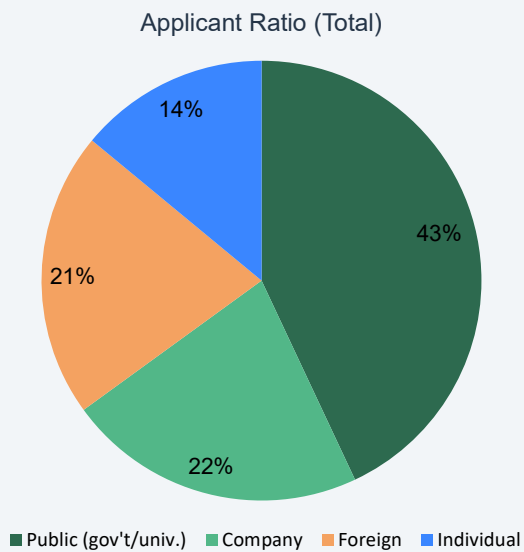
- Agricultural crops: 525
- Forestry crops: 55
- Aquatic crops: 2



Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

18


## Ratio by Applicants & Foreign Applications




Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

19


## Seed Testing & Research

 **Seed Testing**

- ISTA Seed Test
- Storage & Management of legal seed samples
- Staff training

 **DNA analysis**

- Variety Identification by molecular marker
- LMO analysis
- Staff training

 **Pathology Test**

- Disease Resistance test
- Seed Health test
- Virus/viroid test of Fruit Seedlings

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

20

## Variety identification based on the DNA analysis(2024)

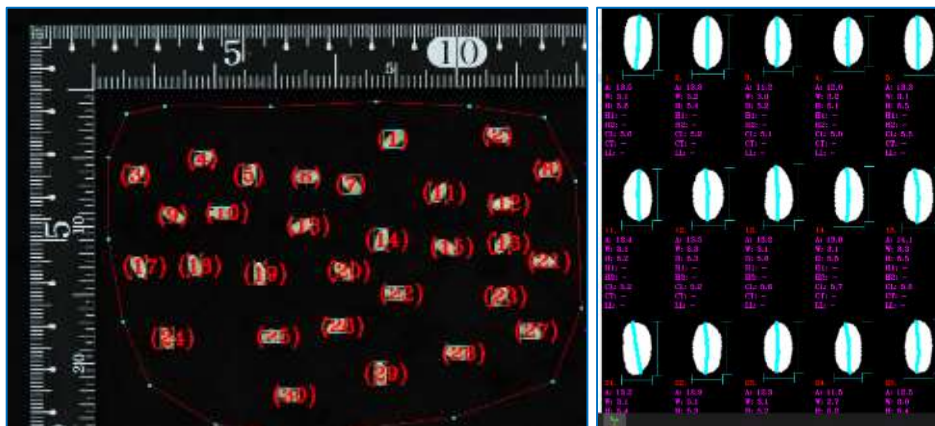
Crops	Marker	No. of Varieties	Crops	Marker	No. of Varieties
Pepper	SSR/SNP	672/647	Peach	SSR	174
Watermelon	SSR/SNP	311/96	Apple	SSR/SNP	67/75
Melon	SSR/SNP	181/96	Blueberry	SSR/SNP	40/84
Tomato	SSR/SNP	136/260	Citrus	SSR	113
Onion	SSR	77	Plum	SSR	160
Chinese Cabbage	SSR/SNP	435/142	Pear	SSR	87
Strawberry	SSR	110	Persimmon	SNP	48
Oriental melon	SSR/SNP	113/96	Grape	SNP	86
Pumpkin	SSR/SNP	167/96	Rose	SSR	70
Radish	SSR/SNP	288/157	Chrysanthemum	SSR/SNP	128/129
Lettuce	SSR/SNP	171/164	Gerbera	SSR	30
Cucumber	SSR/SNP	175/236	Rice	SSR/SNP	373/305
Carrot	SSR	115	Barley	SSR/SNP	71/90
Welsh onion	SNP	39	Soybean	SSR/SNP	16/104
Cabbage	SNP	167	Maize	SSR	90
Oyster Mushroom	SSR	69	Sesame	SNP	67
			Wheat	SSR	45

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

21

## Digital Image Analysis

- Measurement characteristics

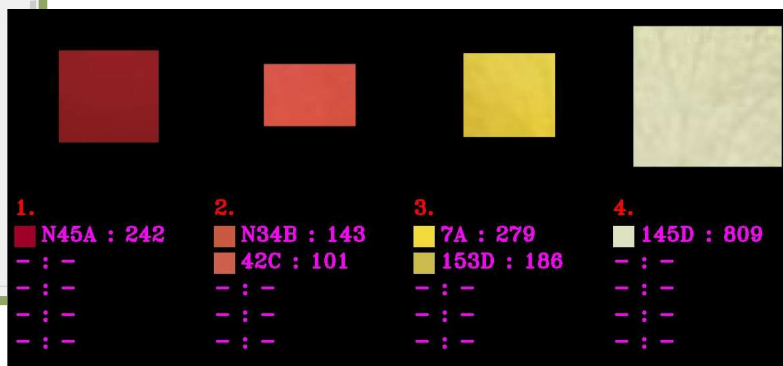
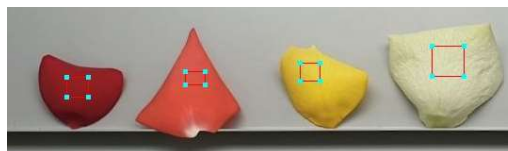
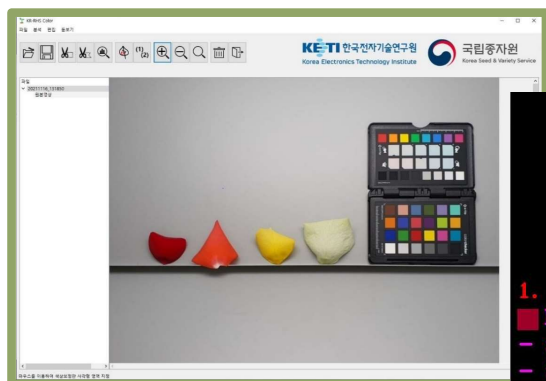


Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

22

## Digital Image Analysis

- Color characteristics



23

## Seed Business Assistance

### Strengthen competitiveness of seed industry

- Encouraging the development of new varieties
- Korea Variety Award
- Establishing domestic foundation of seed production



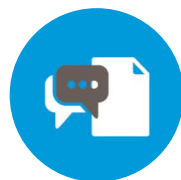
### Support for export of seeds

- Oversea field exhibition of varieties
- Council for exporting seeds



### Control Domestic Seed Market

- Investigation of seed market
- Operation Special Judicial Police
- Conciliation seed dispute



### Build up international cooperation

- Exchange & cooperation with international organization(UPOV, ISTA, ISF, etc)
- Aid developing countries of Asia & Africa

24

## Seed Business Assistance



**대한민국  
우수품종상**  
Korea Variety Award

- To **promote** the development of new varieties
- **PR** superior varieties
- **Object** : All varieties
- **Awards**  
President 1  
Prime Minister 2  
Minister of MAFRA 5



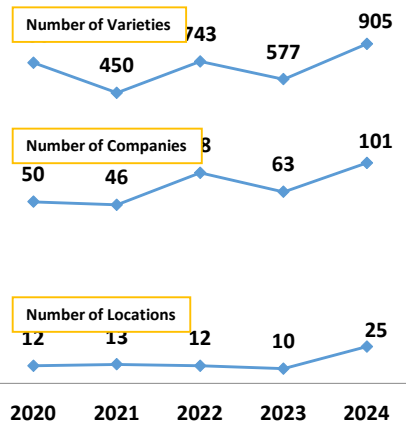
Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

25

## Seed Business Assistance

### Operation of **overseas variety exhibition of Korean seed company**

- **Goal** : Increasing of export of Korea seed
- **Location** : China, India, Indonesia, Vietnam etc



Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

26

# 04

## Future Development in PVP

Reliability · Customer service · Breeders' rights protection

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

27

## Future Development in PVP

### 01 Reliability & Efficiency in DUS Examination

- Management system for example and similar varieties' collection
- Standardization of minimum distance between examiners
- AI image analysis for variety identification (TWM/4 presentation, 2026)

### 02 Better Service to PVP Customers

- Simplification of PVP application documents
- Various PVP information services via new online management system
- Promotion of PVP cooperation among member states

### 03 Strengthening Plant Breeders' Rights Protection

- Active response to infringement by Special Judicial Police
- Check of implementation right to marketing varieties
- 30th anniversary commemoration of Korea's PVP system (2027)

Korea Seed and Variety Service | UPOV TWA/55 | Seoul, 2026

28



## TECHNICAL QUESTIONNAIRE, SECTION 4.2: "METHOD OF PROPAGATING THE VARIETY"

004	Ryegrass	Ray-grass	Weidelgras	Raygrás	Lolium perenne L.; Lolium multiflorum Lam. ssp. italicum (A. Br.) Volkart; Lolium multiflorum Lam. var. westerwoldicum Wittm; Lolium boucheanum Kunth; Lolium rigidum Gaudin.
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**4.2 Method of propagating the variety**

Information on method of propagating the variety

**Seed-propagated varieties**

Cross-pollination  
 population  
 synthetic variety  
 Other (please specify):

**Other (please specify):**

CODE	ENGLISH	FRANÇAIS	DEUTSCH	ESPAÑOL	LATIN
006	Lucerne	Luzerne	Luzerne	Alfalfa	Medicago sativa L., Medicago X varia Martyn

**4.2 Method of propagating the variety**

Information on method of propagating the variety

**Seed-propagated varieties**

Cross-pollination  
 population  
 synthetic variety  
 Other (please specify):

**Other (please specify):**

CODE	ENGLISH	FRANÇAIS	DEUTSCH	ESPAÑOL	LATIN
039	Tall Fescue	Fétuque des prés, Fétuque élevée	Wiesen-, Rohrschwengel	Festuca pratense, Festuca alta	Festuca pratensis Huds. / Festuca arundinacea Schreb.

**4.2 Method of propagating the variety**

Information on method of propagating the variety

**Seed-propagated varieties**

Cross-pollination  
 population  
 synthetic variety  
 Other (please specify):

**Other (please specify):**

<u>CODE</u>	<u>ENGLISH</u>	<u>FRANÇAIS</u>	<u>DEUTSCH</u>	<u>ESPAÑOL</u>	<u>LATIN</u>
066	Lupins	Lupins	Lupinen	Altramuz	Lupinus albus L., L. angustifolius L., L. luteus L.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed-propagated varieties

Self-pollination

Cross-pollination

population

synthetic variety

Other (please specify):

Other (please specify):

<u>CODE</u>	<u>ENGLISH</u>	<u>FRANÇAIS</u>	<u>DEUTSCH</u>	<u>ESPAÑOL</u>	<u>LATIN</u>
067	Red Fescue, Sheep's Fescue, Hair Fescue, Reliant Hard Fescue, Shade Fescue, Pseudovina	Fétuque rouge; Fétuque ovine, Fétuque des moutons; Fétuque à feuilles fines; Fétuque à feuilles scabres, Fétuque durette, Fétuque à feuilles rudes; Fétuque hétérophylle; Fétuque pseudovine	Rotschwengel; Schafschwengel; Feinblättriger Schwengel, Haar- Schaf-Schwengel; Härtlicher Schwengel; Borstenschwengel, Verschiedenblättriger Schwengel	Cañuela Roja, Festuca Roja; Cañuela de Oveja, Cañuela Ovina, Festuca Ovina	Festuca rubra L.; Festuca ovina L.; Festuca filiformis Pourr.; Festuca brevipila R. Tracey; Festuca heterophylla Lam.; Festuca pseudovina Hack. ex Wiesb.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed-propagated varieties

Cross-pollination

population

synthetic variety

Other (please specify):

Other (please specify):

<u>CODE</u>	<u>ENGLISH</u>	<u>FRANÇAIS</u>	<u>DEUTSCH</u>	<u>ESPAÑOL</u>	<u>LATIN</u>
144	Evening Primrose	Onagre	Nachtkerze	Onagra	Oenothera L.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed propagation

Cross-pollination

Other (please specify):

##### Vegetatively propagated varieties

Cuttings

in vitro propagation

Other (please specify):

##### Other (please specify):

<u>CODE</u>	<u>ENGLISH</u>	<u>FRANÇAIS</u>	<u>DEUTSCH</u>	<u>ESPAÑOL</u>	<u>LATIN</u>
178	Fodder Radish	Radis oléifère	Ölrettich	Rábano oleaginoso	Raphanus sativus L. var. oleiformis Pers.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed-propagated varieties

Cross-pollination

population

synthetic variety

Other (please specify):

##### Other (please specify):

<u>CODE</u>	<u>ENGLISH</u>	<u>FRANÇAIS</u>	<u>DEUTSCH</u>	<u>ESPAÑOL</u>	<u>LATIN</u>
180	Rescue Grass, Alaska Brome- grass, Bromus Auleticus	Brome cathartique, Brome sitchensis, Bromus auleticus	Horntrespe, Alaska- Trespe, Bromus Auleticus	Triguillo	Bromus catharticus Vahl., Bromus sitchensis Trin., Bromus auleticus Trin.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed-propagated varieties

Self-pollination

Cross-pollination

population

synthetic variety

Other (please specify):

##### Other (please specify):

CODE	ENGLISH	FRANÇAIS	DEUTSCH	ESPAÑOL	LATIN
227	Hop	Houblon	Hopfen	Lúpulo	Humulus lupulus L.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Vegetatively propagated varieties

Cuttings  
Budding or grafting  
Rhizomes  
Other (please specify):

**Other (please specify):**

CODE	ENGLISH	FRANÇAIS	DEUTSCH	ESPAÑOL	LATIN
228	Medics	Luzernes annuelles	Medicago L. (ohne M. sativa L.)	Medicago L. (excl. M. sativa L.)	Medicago L. (excl. M. sativa L.)

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed-propagated varieties

Self-pollination  
Other (please specify):

**Other (please specify):**

CODE	ENGLISH	FRANÇAIS	DEUTSCH	ESPAÑOL	LATIN
248	Common Millet	Millet commun	Rispenhirse	Mijo común	Panicum miliaceum L.

#### 4.2 Method of propagating the variety

Information on method of propagating the variety

##### Seed-propagated varieties

Self-pollination  
Cross-pollination  
Other (please specify):

**Other (please specify):**

<b>CODE</b>	<b>ENGLISH</b>	<b>FRANÇAIS</b>	<b>DEUTSCH</b>	<b>ESPAÑOL</b>	<b>LATIN</b>
249	Coffee	Caféier	Kaffee	Cafeto	Coffea arabica L.; C. canephora Pierre ex A. Froehner; C. arabica x C. canephora hybrids

#### **4.2 Method of propagating the variety**

Information on method of propagating the variety

##### **Seed-propagated varieties**

Self-pollination

Cross-pollination

Hybrid

    Single hybrid

    Three-way hybrid

    Double hybrid

    Male sterile hybrid

    Male fertile hybrid

Inbred line

    Male sterile line

    Male fertile line

Other (please specify):

##### **Vegetatively propagated varieties**

Cuttings

in vitro propagation - Tissue Culture or micropropagation; Indirect Somatic Embryogenesis

Budding or grafting

Air layering

Other (please specify):

**Other (please specify):**

[Annex IV follows]

# Rice Breeding Innovation and Commercialization of Protected Rice Varieties at SEEDPIA



TWA 2026, Seoul, Republic of Korea

1

## About SEEDPIA

### Establishment

- Established in 2011
- Private rice breeding company located in Hwaseong, Gyeonggi Province, Republic of Korea

### Vision

- Leading the high-value seed industry through aromatic and functional rice varieties
- Becoming a leading private seed company in Korea

### Core Activities

- Rice variety breeding
- Seed production and distribution
- Securing Plant Variety Protection (PVP) rights
- Variety commercialization and royalty business



2

## Representative Variety – Golden Queen 3



### Key Characteristics



- Flagship aromatic rice variety developed by SEEDPIA
- Distinctive popcorn-like aroma when cooked
- Low amylose content (approximately 12.5%) Soft and sticky eating quality
- Highly preferred by consumers
- One of the leading aromatic rice varieties in Korea
- Meets consumer demand for premium and differentiated rice products

3

## Market Success and Achievements of Golden Queen 3

- Major Achievements**
- More than 80% share of the Korean aromatic rice market
  - Successfully replaced foreign developed rice varieties
  - Known to consumers as one of the most famous rice brands in Korea

- Benefits for Farmers**
- Higher added value compared with conventional rice
  - Approximately 21% increase in farm income

- Recognition**
- Recipient of the Presidential Award at the 2024 Korea Excellent Variety Awards
  - Recognized for both quality and market competitiveness



4

## Intellectual Property-Based Growth and Future Vision

### Breeding Achievements Supported by Intellectual Property

#### •Plant Variety Protection Rights

- 17 registered
- 7 applications pending

#### •Patents

- More than 9 registered patents

### Future Vision

#### •Continuous Variety Development

- Expansion of aromatic and functional rice breeding

#### •Global Market Expansion

- Wider distribution of Korean rice varieties overseas

#### •Strengthening International Cooperation

- Expanded collaboration with international breeding institutes and seed companies

#### •Sustainable Agricultural Development

- Increasing farm income and strengthening the competitiveness of the seed industry

5

# Thank You

6

**DRAFT TEST GUIDELINES TO BE SUBMITTED  
TO THE TECHNICAL COMMITTEE IN 2026**

All requested information to be submitted to the Office of the Union

**before July 31, 2026**

Full draft Test Guidelines

Species	Basic Document(s)	Leading expert
*Fodder Beet ( <i>Beta vulgaris</i> L. Fodder Beet Group) (Revision)	TG/150/4(proj.4)	Ms. Anne-Lise Corbel (FR)
*Grain Amaranth ( <i>Amaranthus</i> L.) (Revision)	TG/247/2(proj.3)	Mr. Lubomir Basta (SK)
*Mung Bean ( <i>Vigna radiata</i> (L.) R. Wilczek)	TG/VIGNA_RAD (proj.4)	Mr. Xiongfei Jiao (CN)
*Sugarcane ( <i>Saccharum</i> L.) (Revision)	TG/186/2(proj.7)	Mr. Ali Bhatti (AU)
White Mustard ( <i>Sinapis alba</i> L.) (Revision)	TG/179/4(proj.1)	Ms. Beate Rücker (DE)

Partial revision

Species	Basic Document(s)	Leading expert
Sweet Potato ( <i>Ipomoea batatas</i> (L.) Lam.) - Adding a new characteristic "Leaf blade: anthocyanin coloration of nectary" - Adding a new shape to "Storage root: shape" - Adding new colors to "Storage root: main color of flesh" - Revision of example variety for char. 23	TG/258/1, TWA/55/3	Mr. Toru Watanabe (JP)

**DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWA/56**  
**(\* indicates possible final draft Test Guidelines)**

Guideline date for Subgroup draft to be circulated by Leading Expert: **March 12, 2027**

Guideline date for comments to Leading Expert by Subgroup: **April 9, 2027**

New draft to be submitted to the Office of the Union  
**before May 7, 2027**

The procedure for the introduction and revisions of Test Guidelines is provided in document TGP/7 "Development of Test Guidelines", Section 2

Full draft Test Guidelines

Species	Basic Document	Leading expert	Interested experts (countries/organizations) <sup>2</sup>
Barley ( <i>Hordeum vulgare</i> L.) (Revision)	TG/19/11 Corr.	Ms. Anne-Lise Corbel (FR)	AR, AT, AU, CA, CZ, DE, DK, FI, GB, HU, IT, KR, JP, PL, NZ, QZ, TR, ZA, CropLife, Euroseeds, ISF, Office
Fodder Radish ( <i>Raphanus sativus</i> L. var. <i>oleiformis</i> Pers.) (Revision)	TG/178/3	Ms. Beate Rücker (DE)	CZ, FR, GB, IT, JP, NZ, PL, QZ, ZA, Euroseeds, ISF, Office
Tall Fescue, Meadow Fescue ( <i>Festuca pratensis</i> Huds. / <i>Festuca arundinacea</i> Schreb.) Revision	TG/39/8	Ms. Jacqueline Broadhead (NZ)	AR, CA, CN, CZ, DE, FI, FR, GB, IT, JP, KR, NL, PL, QZ, SK, Euroseeds, ISF, Office
Turnip Rape ( <i>Brassica rapa</i> L. var. <i>silvestris</i> (Lam.) Briggs.) (Revision)	TG/185/3	Ms. Anne-Lise Corbel (FR)	DE, FI, GB, IT, JP, NZ, PL, QZ, ZA, Euroseeds, ISF, Office
*White Clover ( <i>Trifolium repens</i> L.) (Revision)	TG/38/8(proj.1)	Ms. Margaret Wallace (GB)	AU, CA, CZ, DE, FR, IT, JP, KR, NL, NZ, PL, QZ, SK, ZA, Euroseeds, ISF, Office

Partial revisions

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) <sup>1</sup>
Cannabis, Hemp ( <i>Cannabis sativa</i> L.)	TG/276/2	Mr. Peter Hendriks (NL)	AR, AU, CA, DE, FR, HU, IT, JP, NZ, QZ, ZA, Euroseeds, ISF, Office

Draft Test Guidelines for possible future discussion

Species	Basic Document(s)	Possible Leading Expert
Common Millet ( <i>Panicum miliaceum</i> L.) (Revision)	TG/248/1	AT
Couch Grass, Bermuda Grass ( <i>Cynodon</i> Rich.)	New	Mr. Andrew Hallinan (AU)

[End of Annex V and of document]

<sup>2</sup> for name of experts, see list of participants