

No.

202100228

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Institute of Agricultural Resources and Economics

Whereas, THERE HAS BEEN PRESENTED TO THE

Administrator of the Agricultural Marketing Service

An application requesting a certificate of protection for an alleged novel variety of sexually reproduced, asexually reproduced, or tuber propagated plant, the name and description of which are contained in the application and exhibits, a copy of which is hereunto annexed and made a part hereof, and the various requirements of law in such cases made and provided have been complied with, and the title thereto is, from the records of the PLANT VARIETY PROTECTION OFFICE, in the applicant(s) indicated in the said copy, and whereas, upon due examination made, the said applicant(s) is (are) adjudged to be entitled to a certificate of plant variety protection under the law.

Now, therefore, this certificate of plant variety protection is to grant unto the said applicant(s) and the successors, heirs or assigns of the said applicant(s) for the term of TWENTY years from the date of this grant, subject to the payment of the required fees and periodic replenishment of viable germplasm material of the variety in a public repository as provided by law, the right to exclude others from selling the variety, or offering it for sale, or reproducing it, or importing it, or exporting it, or conditioning it for propagation, or stocking it for any of the above purposes, or using it in producing a hybrid or different variety there from, to the extent provided by the PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)



BARLEY

'Kornelija'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this tenth day of December, in the year two thousand twenty one.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Administrator
Agricultural Marketing Service



U.S. Department of Agriculture
Agricultural Marketing Service, Science & Technology Program
Plant Variety Protection Office

US Plant Variety Protection Report Barley Variety 'Kornelija' PV Number: 202100228

Owner / Applicant / Organization

Institute of Agricultural Resources and
Economics
Zinatnes Street 2
LV-4130
Priekuli, TAL LV-4130
Latvia
Tel:
Fax:
Email:

Owner Representative / Agent

Sheree Rybak
121 SW Salmon Street
Portland, OR 97204
United States
Tel: (503) 330-2565
Fax:
Email: Sheree.rybak@klarquist.com

Experimental Name: IC-360
Kornelija

Variety Name:

Crop Kind: Barley

Filing Date : 03/02/2021

Application Status: Application Submitted and
Ready for Preliminary
Review and Filing Letter

Application Status Code: AS

ST470 Main

1. Genus and Species name of crop

Hordeum vulgare L.

2. Family name (Botanical)

Poaceae

3. Is the variety a first generation hybrid?

No

4. Does the variety contain any Transgenes?

No

5. Does the owner specify that seed of this variety be sold only as a class of certified seed? (see section 83(a) of the plant variety protection act)

No

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6. Has the variety (including any harvested material) or a hybrid produced from this variety been sold, disposed of, transferred, or used in the U.S. or other countries?

No

7. Is the variety or any component of the variety protected by intellectual property right? (plant breeder's right or patent)

Yes

Country, date of filing or issuance and assigned reference number:

Latvia, filed Dec 12, 2013, Application No. 13003, granted
Estonia, filed March 2, 2014, Application No. 23/2014, granted
Lithuania, filed Dec 14, 2018, Application No. AP-1566, granted
Poland, filed February 19, 2019, Application No. R 1588, withdrawn in favor of CPVO
Finland, filed April 30, 2019, Application No. 3242/04.00.04.00/2019, granted
CPVO, filed Dec 18, 2019, Application No. 2019/3438, granted
Norway filed November 25, 2020, Application No. XU_3020200000949, pending

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Exhibit A - Origin and Breeding History

1. Genealogy (back to and including public and commercial varieties, lines, or clones used) and the breeding method(s).

'Kornelija' (experimental name IC-360) resulted by application of traditional breeding methods by controlled cross (performed in 2000) among parents SCBN852.7/Sauce/3/Mola/Shuri and Arupo*2/Jet. The parental varieties were obtained in response to our request for high protein hullless barley from ICARDA (International Centre for Agricultural Research in the Dry Area) which runs the seed bank in Aleppo (Syria). Both parents used in this crossing originated from varieties and breeding lines, identified either by ICARDA scientists or by varieties produced by other breeding programs in the world. Therefore only some information about the genealogy of this cross combination and parents used in cross combinations can be provided.

2. Give the details of subsequent stages of selection and multiplication.

The main selection criteria under Latvian climatic conditions were earliness, yield potential, grain quality attributes, lodging resistance and resistance to diseases). Following the cross, in 2002 a hull-less barley line was selected with given breeder's reference name IC-360. Seed multiplication and the following progeny evaluation was carried out until 2011.

3. Is the variety uniform?

Yes

How did you test for uniformity?

Uniformity confirmed using the methods provided in the attached CPVO/UPOV report on technical examination for variety 'Kornelija' (see attachment TP_Hordeum_vulgare_019-3.pdf) issued by Estonian Agricultural Research Centre Viljandi Variety Testing Centre. Distinctness, Uniformity and Stability/DUS examination was performed based on the CPVO technical protocol CPVO-TP / 019/3. (see attachment)

4. Is the variety stable?

Yes

How did you test for stability? Over how many generations?

Stability confirmed in the CPVO/UPOV report on technical examination for variety 'Kornelija' (see attachment TP_Hordeum_vulgare_019-3.pdf) issued by Estonian Agricultural Research Centre Viljandi Variety Testing Centre. Distinctness, Uniformity and Stability/DUS examination was performed based on the CPVO technical protocol CPVO-TP / 019/3. See in the attachment CPVO/UPOV report on technical examination (see attachment) with reference to CPVO technical protocol CPVO-TP / 019/3.

5. Are genetic variants observed or expected during reproduction and multiplication?

No

Exhibit A Attached Files List

File Name	Last Modified On
TP_HORDEUM_VULGARE_019-3.pdf	3/2/2021 1:17:34 PM
Kornelija Exhibit A question 2.docx	3/2/2021 11:50:26 AM

'Kornelija' barley Exhibit A: question 2:

2. Give the details of subsequent stages of selection and multiplication.

Year	Detail stage	Selection criteria
2000	Cross	Parent selection: earliness, grain quality attributes,
2001	F1 progeny seeds multiplication and a segregating F2 population was obtained in glasshouse conditions	Earliness, plant height, ear morphology, resistance to diseases
2002	A segregating F3 population was space planted; Individual plant selection in random	Resistance to diseases, tillering capacity, plant height, earliness
2003	Progeny F4 breeding line was selected from one row plot; breeder's reference name IC-360 was given;	Resistance to diseases and lodging, plant height, ear length, earliness
2004	Progeny F5 pure-breeding line IC 360, hill plots in 3 replications	earliness, yield potential, seed quality attributes (1000 kernel weight, protein, beta-glucans), lodging and disease resistance.
2005-2011	Progeny F6 to F13 pure-breeding line IC-360; yield plots from 5-10 m2 in 2 to 4 replications. In progeny F7 elite plants selection was carried out, seed nurseries was established.	The main selection criteria under Latvian climatic conditions was earliness, yield potential, seed quality attributes (1000 kernel weight, protein, beta-glucans), lodging and disease resistance. Advantage of this line was their earliness, coarse grain, heightened protein and beta-glucan content, total phenolic compounds. See published results: Bleidere M., Zute S., Jakobsone I. (2013) Characterization of physical and biochemical traits of hulless spring barley grain in Latvian breeding program, Proceedings of the Latvian Academy of Sciences. Section B, 67 (4/5): 20-30. https://doi.org/10.2478/prolas-2013-0065 .
2012-2013	IC-360 was submitted for Distinctness, Uniformity and Stability/DUS test in Estonia (2 years testing) and for Value for Cultivation and Use/VCU testing in Latvia.	See in the attachment: CPVO/UPOV report on technical examination issued by Estonian Agricultural Research Centre Viljandi Variety Testing Centre,
2014	Line IC-360 was registered for Plant Breeders Rights in Latvia by variety name Kornelija	

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Exhibit B - Statement of Distinctness

1. Based on overall morphology. Applicant's new variety Kornelija
is most similar to Comparison Variety IRBE , ,

2. Application Variety Traits

Flag leaf: intensity of anthocyanin coloration of auricles is weak to medium for 'Kornelija' and strong for 'Irbe'
Flag leaf: attitude is horizontal for 'Kornelija' and semi-drooping for 'Irbe'

3. Comparison Variety1 Additional Comments?

4. Comparison Variety2 Additional Comments?

5. Comparison Variety3 Additional Comments

Exhibit B Attached Files List

File Name	Last Modified On
Estonia testing results.pdf	3/2/2021 11:37:15 AM

**ESTONIAN AGRICULTURAL RESEARCH CENTRE
VILJANDI VARIETY TESTING CENTRE**

CPVO / UPOV VARIETY DESCRIPTION

1. Reference number of reporting authority	10-1/76
2. Reference number of requesting authority	2019/3438
3. Breeder's reference	IC-360
4. Applicant	Institute of Agricultural Resources and Economics Zinātnes iela 2, Priekuļi, Priekuļu pagasts, Priekuļu novads, LV-4126

5. Botanical name of taxon	<i>Hordeum vulgare</i> L. Subsp. Distichum (L) Körn., var. nudum.
6. Common name of taxon	Naked barley
7. Variety denomination	KORNELIJA
8. Date and document number of CPVO TP / UPOV TG	CPVO TP/019/3 21/03/2012
9. Date and/or document number of national test guidelines -	
10. Testing authority	Estonian Agricultural Research Centre
11. Testing station(s) and place(s)	Viljandi Variety Testing Centre
12. Period of testing	2012-2013
13. Date and place of issue of document	31.01.2020 Viljandi

UPOV No.	National No.	Characteristics	States of Expression	Note	Remarks
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14.Group: (if characteristics of number 15 are using for grouping, they are marked with a G in that number)



**ESTONIAN AGRICULTURAL RESEARCH CENTRE
VILJANDI VARIETY TESTING CENTRE**

Reference number of reporting authority: 10-1/76

IC360

Kornelija

15. Characteristics Included in the CPVO TP/019/3

CPVO No.	UPOV No.	Characteristics	States of Expression	Note	Remarks
1.	28.	Kernel: colour of aleurone layer	weakly coloured	2	
2.	1.	Plant: growth habit	semi erect to intermediate	4	
3.G	2.	Lowest leaves: hairiness of leaf sheaths	absent	1	
4.		Flag leaf: intensity of anthocyanin coloration of auricles	weak to medium	4	
5.	5.	Flag leaf: attitude	horizontal	5	
6.	6.	Flag leaf: glaucosity of sheath	strong	7	
7.	7.	Time of ear emergence	early	3	
8.		Awns: intensity of anthocyanin coloration of tips	medium	5	
9.	10.	Ear: glaucosity	medium to strong	6	
10.	11.	Ear: attitude	semi-recurved	7	
11.	12.	Plant: length	long	7	
12.G	13.	Ear: number of rows	two	1	
13.	14.	Ear: shape	tapering to parallel	4	
14.	15.	Ear: density	medium to dense	6	
15.	16.	Ear: length (excluding awns)	medium to long	6	
16.	17.	Awn: length (compared to ear)	long	7	
17.	18.	Rachis: length of first segment	medium	5	
18.	19.	Rachis: curvature of first segment	medium	5	
19.		Ear: development of sterile spikelets	full	2	
20.	20.	Sterile spikelet: attitude	parallel to weakly divergent	2	
21.	21.	Median spikelet: length of glume and its awn relative to grain	equal	2	



CPVO No.	UPOV No.	Characteristics	States of Expression	Note	Remarks
22.G	22.	Grain: rachilla hair type	long	2	
23.	23.	Grain: husk	absent	1	
24.	24.	Grain: anthocyanin coloration of nerves of lemma	medium to strong	6	
25.	25.	Grain: speculation of inner lateral nerves of dorsal side of lemma	medium to strong	6	
26.	26.	Grain: hairiness of ventral furrow	absent	1	
27.G	27.	Grain: disposition of lodicules	clasping	2	
28.G	29.	Seasonal type	spring type	3	

16. Similar Varieties and Differences from These Varieties:

Denomination of similar variety	Characteristic in which the similar variety is different	State of expression of similar variety	State of expression of candidate variety
IRBE	4. Flag leaf: intensity of anthocyanin coloration of auricles	strong (7)	weak to medium (4)
	5. Flag leaf: attitude	semi-drooping (7)	horizontal (5)

17. Additional Information: -

a) Additional Data:

b) Remarks:

18. Signature:

Viljandi 31.01.2020

Head of the Viljandi Variety Testing Centre
Agra Univer

Stamp



Exhibit C

Barley

A . Growth Habit

1 . *Growth Habit*

Spring

2 . *Early Growth*

Prostrate to Semi-Prostrate

B . Maturity at 50% Flowering

1 . *Maturity Class*

Early

C . Plant Height from Soil Level to Top of Head

1 . *Plant Height Class*

Tall

2 . *Plant Height (cm)*

Plant Height (cm)

Plant Height High (cm)

Plant Height Low (cm)

D . Stem

1 . *Exertion (Flag to Spike at Maturity)*

2 . *Stem Anthocyanin*

Absent

3 . *Number of Nodes Originating from Node Above Ground*

03

4 . *Collar Shape*

Closed

5 . *Shape of Neck*

Straight

E . Leaf

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1 . *Basal Leaf Sheath Pubescence of Seedling*

Glabrous

2 . *Position of Flag Leaf at Boot Stage*

Drooping

3 . *Leaf Waxiness*

Waxy

4 . *Width of First Leaf Below Flag Leaf (mm)*

mm Width

High

Low

5 . *Length of First Leaf Below Flag Leaf*

Length of First Leaf Below Flag Leaf (cm)

Length of First Leaf Below Flag Leaf High (cm)

Length of First Leaf Below Flag Leaf Low (cm)

6 . *Anthocyanin in Leaf Sheath*

Absent

F . Head

1 . *Head Type*

Two-Rowed

2 . *Head Density*

Other

medium to dense

3 . *Head Shape*

3.a. *Head Shape*

Other

3.b. *Head Attitude*

Other

4 . *Head Waxiness*

Slightly Waxy

5 . *Lateral Kernel Overlap*

6 . *Rachis Hair on Edge*

6.a. *Rachis Hair on Edge*

Covered

6.b. *Rachis Hair Length*

Long

G . Glume

1 . *Glume Length*

1/2 of Lemma

2 . *Glume Hairs*

Long

3 . *Glume Hair Covering*

Completely Covered

4 . *Glume Awn Length*

More than Equal to Length of Glume

5 . *Glume Awn Surface*

H . Lemma

1 . *Lemma Awn*

Long (Longer than Spike)

2 . *Lemma Awn Surface*

Rough

3 . *Lemma Teeth*

Numerous

4 . *Lemma Hair*

Absent

5 . *Lemma Shape of Base*

Depression

6 . *Rachilla Hairs*

6.a. *Rachilla Hairs*

Long

6.b. *Rachilla Length*

Long

I . Stigma

1 . *Stigma Hairs*

Many

J . Use

1 . *Primary Use*

Human consumption

K . Seed

1 . *Seed Type*

Naked

2 . *Hairs on Ventral Furrow*

Absent

3 . *Seed Length*

4 . *Wrinkling of Hull*

Naked

5 . *Aleurone Color*

Colorless (white or yellow)

6 . *Percent Abortive*

7 . *Grams per 1000 Seeds*

Grams per 1000 Seeds (gm)

Grams per 1000 Seed High (gm)

Grams per 1000 Seeds Low (gm)

L . Disease Resistance

1 . *Septoria*

Intermediate

2 . *Powdery Mildew*

Intermediate

3 . *Loose Smut*

Resistant

4 . *Stem Rust*

5 . *Aster Yellow Virus*

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Not Tested

6 . *Net Blotch*

Intermediate

7 . *Bacterial Blight*

Not Tested

8 . *Leaf Rust*

Intermediate

9 . *BSMV*

Not Tested

10 . *Spot Blotch*

Resistant

11 . *Covered Smut*

Resistant

12 . *Scab*

Not Tested

13 . *BYDV*

Tolerant

14 . *False Loose Smut*

Not Tested

15 . *Scald*

Intermediate

16 . *Black Chaff*

Not Tested

17 . *Snow Molds*

Not Tested

18 . *Stripe Rust*

Not Tested

19 . *Common Root Rot*

Not Tested

20 . *Ergot*

Not Tested

21 . *Glume Blotch*

Not Tested

M . Insect Resistance

1 . *Green Bug*

Not Tested

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2 . *Grasshoppers*

Not Tested

3 . *English Grain Aphid*

Not Tested

4 . *Cereal Leaf Beetle*

Not Tested

5 . *Chinch Bug*

Not Tested

6 . *Armyworm*

Not Tested

7 . *Corn Leaf Aphid*

Not Tested

8 . *Barley Joint Worm*

Not Tested

9 . *Russian Wheat Aphid*

Not Tested

10 . *Other*

10.a. *Other (Please Specify)*

I. *Hessian Fly Biotype Resistance*

1 . *GP Biotype*

Not Tested

2 . *A biotype*

Not Tested

3 . *B Biotype*

Not Tested

4 . *C Biotype*

Not Tested

5 . *D Biotype*

Not Tested

6 . *E Biotype*

Not Tested

7 . *F Biotype*

Not Tested

8 . *G biotype*

Not Tested

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9 . *Other Biotype*

9.a. *Other Biotype Insect Resistance (Specify)*

II. Nematode Resistance

1 . *Nematode*

Not Tested

N . Chemical

1 . *DDT*

Not Tested

2 . *Other*

2.a. *Other Chemical Resistance (Specify)*

O . Similar Variety by Trait

I. Similar Variety by Trait

1 . *Plant Tillering*

2 . *Leaf Size*

3 . *Leaf Color*

4 . *Leaf Carriage*

5 . *Seed Size*

6 . *Coleoptile Elongation*

7 . *Seedling Pigmentation*

P . Comments

I. Comments

1 . *Notes and Comments*

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Exhibit D - Additional Descriptive Information

Additional descriptive question / text:

CPVO application

Additional descriptive answer / information in detail:

additional description of 'Kornelija'

Additional descriptive question / text:

Bleidere et al 2013

Additional descriptive answer / information in detail:

additional description of 'Kornelija'

Additional descriptive question / text:

CPVO technical protocol CPVO-TP / 019/3

Additional descriptive answer / information in detail:

CPVO/UPOV report on technical examination for variety 'Kornelija'

Exhibit D Attached Files List

File Name	Last Modified On
TP_HORDEUM_VULGARE_019-3.pdf	3/2/2021 1:22:05 PM
Barley Kornelija Photos.pdf	3/2/2021 1:21:53 PM
Bleidere et al 2013.pdf	3/1/2021 9:26:16 PM
CVPO Kornelija barley description.pdf	3/1/2021 9:25:01 PM



RAPORT Z URZĘDOWEGO BADANIA
ODRĘBNOŚCI, WYRÓWNIANIA I TRWAŁOŚCI ODMIANY
REPORT ON TECHNICAL EXAMINATION

1. Numer zgłoszenia w instytucji sporządzającej raport
Reference number of reporting authority JEZ 8097
 2. Instytucja zlecająca
Requesting authority Ministry of Agriculture of the Republic of Latvia
State Plant Protection Service
Seed Control Department
Lielvarde 36/38, Riga
LV-1006
 3. Numer zgłoszenia w instytucji zlecającej
Reference number of requesting authority -
 4. Nazwa hodowlana odmiany
Breeder's reference PR-3528
 5. Data zgłoszenia / *Date of application*
(a) w instytucji zlecającej badanie
in requesting authority -
(b) w instytucji sporządzającej raport
in reporting authority 13.03.2009
 6. Zgłaszający (nazwa i adres)
Applicant (name and address) State Priekuli Plant Breeding Institute
Zinatnes str. 1a
Priekuli
LV-4126
 7. Pełnomocnik (nazwa i adres)
Representative (name and address)
-
8. Nazwa botaniczna (łacińska) taksonu
Botanical name of taxon *Hordeum vulgare L.*
 9. Nazwa zwyczajowa taksonu
Common name of taxon Jęczmień
Barley
 10. Nazwa odmiany
Variety denomination -
 11. Hodowca (nazwa i adres)
Breeder (name and address) State Priekuli Plant Breeding Institute
Zinatnes str. 1a
Priekuli
LV-4126
 12. Instytucja prowadząca badanie
Testing authority COBORU Słupia Wielka PL
 13. Jednostka(i) badawcza(e) i miejsce(a)
Testing station(s) and place(s) SDOO Słupia Wielka
 14. Okres badania
Period of testing 2009-2010
 15. Data i miejsce wystawienia dokumentu
Date and place of issue of document 02.12.2010, Słupia Wielka PL

16. WYNIKI BADANIA ODREBNOŚCI, WYRÓWNIANIA I TRWAŁOŚCI
RESULTS OF THE TECHNICAL EXAMINATION AND CONCLUSION

(a) Sprawozdanie z badania odrębności

(a) Report on Distinctness

Odmiana: **PR-3528**

The variety

- jest wyraźnie odrębna od każdej znanej nam odmiany. [X]
is clearly distinguishable from any other variety whose existence is known to us.
- nie jest wyraźnie odrębna od wszystkich znanych nam odmian. []
is not clearly distinguishable from all varieties whose existence is known to us

(b) Sprawozdanie z badania wyrównania

(b) Report on Uniformity

Odmiana: **PR-3528**

The variety

- jest wystarczająco wyrównana [X]
is sufficiently uniform
 - nie jest wystarczająco wyrównana []
is not sufficiently uniform
- uwzględniając szczególne właściwości wynikające z jej generatywnego lub wegetatywnego sposobu rozmnażania.
having regard to the particular features of its sexual reproduction or vegetative propagation.

(c) Sprawozdanie z badania trwałości

(c) Report on Stability

Odmiana: **PR-3528**

The variety

- jest trwała [X]
is stable
 - nie jest trwała []
is not stable
- w swoich charakterystycznych właściwościach.
in its essential characteristics.

W przypadku pozytywnego wyniku opis odmiany jest dołączony jako aneks do raportu.
In the case of a positive conclusion a description of the variety is given as annex to this report.

17. Uwagi

Remarks

18. Podpis

Signature

DYREKTOR


prof. dr hab. Edward Gacek





OPIS ODMIAN
DESCRIPTION

URZĘDOWY OPIS ODMIANY
VARIETY DESCRIPTION

1. Numer zgłoszenia w instytucji sporządzającej raport
Reference number of reporting authority JEZ 8097
 2. Numer zgłoszenia w instytucji zlecającej
Reference number of requesting authority -
 3. Nazwa hodowlana odmiany
Breeder's reference PR-3528
 4. Zgłaszający (nazwa i adres)
Applicant (name and address) State Priekuli Plant Breeding Institute
Zinatnes str. 1a
Priekuli
LV-4126
-
5. Nazwa botaniczna (łacińska) taksonu
Botanical name of taxon *Hordeum vulgare L.*
 6. Nazwa zwyczajowa taksonu
Common name of taxon Jęczmień
Barley
 7. Nazwa odmiany
Variety denomination -
 8. Data i numer metodyki CPVO
Date and document number of CPVO Protocol 06.11.2003 CPVO-TP/19/2
 9. Data i/lub numer krajowej metodyki
Date and/or document number of national Test Guidelines M(JEZ)05.04
 10. Instytucja prowadząca badanie
Testing authority COBORU Słupia Wielka PL
 11. Jednostka(i) badawcza(e) i miejsce(a)
Testing station(s) and place(s) SDOO Słupia Wielka
 12. Okres badania
Period of testing 2009-2010
 13. Data i miejsce wystawienia dokumentu
Date and place of issue of document 02.12.2010, Słupia Wielka PL
 14. Grupa (cechy używane do grupowania zaznaczono przy numeracji literą G)
Group (if characteristics are used for grouping, they are marked with a G in that number) —
 15. Cechy opisowe zawarte w metodyce CPVO lub metodyce krajowej
(* - cecha zawsze uwzględniana w opisie)
Characteristics included in the CPVO Protocol or National Test Guidelines
(* - characteristics always included in the description)

Gatunek: **Jęczmień**
Species: *Barley*

Odmiana: **PR-3528**
Variety

Nr CPVO CPVO No.	Nr kraj. National No.	Cecha Characteristics	Określenie State of expression	Ocena Note	Uwagi Remarks
1 *	1	Roślina: pokrój <i>Plant: growth habit</i>	pośredni <i>intermediate</i>	5	
G 2 *	2	Liście dolne: owłosienie pochew liściowych <i>Lowest leaves: hairiness of leaf sheaths</i>	brak <i>absent</i>	1	
3 *	3	Liść flagowy: natężenie zabarwienia uszek antocyjanem <i>Flag leaf: intensity of anthocyanin coloration of auricles</i>	silne <i>strong</i>	7	i średnie 5 <i>and medium</i>
4	4	Roślina: częstotliwość roślin ze zgiętymi liśćmi flagowymi <i>Plant: frequency of plants with recurved flag leaves</i>	duża <i>high</i>	7	
5	5	Liść flagowy: nalot woskowy na pochwie <i>Flag leaf: glaucosity of sheath</i>	silny <i>strong</i>	7	
6 *	6	Termin kłoszenia (pierwszy kłosek widoczny u 50% kłosów) <i>Time of ear emergence (first spikelet visible on 50% of ears)</i>	wczesny do średniego <i>early to medium</i>	4	
7 *	7	Ości: natężenie zabarwienia końców antocyjanem <i>Awns: intensity of anthocyanin coloration of tips</i>	średnie do silnego <i>medium to strong</i>	6	
8 *	8	Kłos: nalot woskowy <i>Ear: glaucosity</i>	średni <i>medium</i>	5	
9	9	Kłos: ustawienie <i>Ear: attitude</i>	poziomy <i>horizontal</i>	5	i półstojący 3 <i>and semi-erect</i>
10 *	10	Roślina: wysokość (wódzko, kłos i ości) <i>Plant: length (stem, ear and awns)</i>	średnia do wysokiej <i>medium to long</i>	6	
G 11 *	11	Kłos: liczba rzędów <i>Ear: number of rows</i>	dwa <i>two</i>	1	
12	12	Kłos: kształt <i>Ear: shape</i>	cyldryczny <i>parallel</i>	5	
13 *	13	Kłos: zbitość <i>Ear: density</i>	średni do zbitego <i>medium to dense</i>	6	
14	14	Kłos: długość (bez ości) <i>Ear: length (excluding awns)</i>	średni <i>medium</i>	5	

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Variety

Nr CPVO CPVO No.	Nr kraj. National No.	Cecha Characteristics	Określenie State of expression	Ocena Note	Uwagi Remarks
15 *	15	Ości: długość w stosunku do kłosa <i>Awns: length (compared to ear)</i>	dłuższe <i>long</i>	7	i równe 5 <i>and medium</i>
16	16	Osadka kłosowa: długość dolnego członu <i>Rachis: length of first segment</i>	średni <i>medium</i>	5	i krótki 3 <i>and short</i>
17	17	Osadka kłosowa: skrzywienie dolnego członu <i>Rachis: curvature of first segment</i>	słabe <i>weak</i>	3	sporad. brak 1 lub średnie 5 <i>sporadically absent or medium</i>
18	18	Kłós: rozwój kłosa płonego (tylko odmiany dwurzędowe) <i>Ear: development of sterile spikelets (two-rowed varieties only)</i>	całkowicie rozwinięty <i>full</i>	2	
19 *	19	Kłosek płony boczny: ustawienie w stosunku do osi kłosa (tylko odmiany dwurzędowe) <i>Sterile spikelet: attitude (two-rowed varieties only)</i>	rozwarłe <i>divergent</i>	3	i słabo rozwarłe 2 <i>and parallel to weakly divergent</i>
20	20	Kłosek środkowy: długość dolnej plewy wraz z ością w stosunku do długości ziarna <i>Median spikelet: length of glume and its awn relative to grain</i>	dłuższa <i>longer</i>	3	
G 21 *	21	Ziarno: typ owłosienia szczoteczki <i>Grain: rachilla hair type</i>	długa <i>long</i>	2	
22 *	22	Ziarno: oplewienie <i>Grain: husk</i>	brak <i>absent</i>	1	
23	23	Ziarno: zabarwienie antocyjanem nerwów plewki dolnej <i>Grain: anthocyanin coloration of nerves of lemma</i>	silne <i>strong</i>	7	i średnie 5 <i>and medium</i>
24	24	Ziarno: ząbkowanie nerwów grzbietowych plewki dolnej <i>Grain: spiculation of inner lateral nerves of dorsal side of lemma</i>	brak lub bardzo słabe <i>absent or very weak</i>	1	
G 25 *	25	Ziarno: owłosienie bruzdki <i>Grain: hairiness of ventral furrow</i>	brak <i>absent</i>	1	
26	26	Ziarno: położenie łuszczyk <i>Grain: disposition of lodicules</i>	czołowe <i>frontal</i>	1	
27	27	Ziarno nieoplewione: barwa warstwy aleuronowej <i>Kernel: color of aleurone layer</i>	słabo zabarwiona <i>weakly colored</i>	2	

Odmiana: **PR-3528**

Variety

Nr CPVO CPVO No.	Nr kraj. National No.	Cecha Characteristics	Ocena Note	Uwagi Remarks	Określenie State of expression	Ocena Note	Uwagi Remarks
G 28 *	28	Typ rozwojowy roślin Seasonal type			jary spring type	3	

16. Odmiany podobne i różnice między nimi
Similar variety and differences between these varieties

Nazwa odmiany podobnej <i>Denomination of similar variety</i>	Cecha, którą podobna odmiana różni się <i>Characteristic in which the similar variety is different</i>	Określenie cechy u odmiany podobnej <i>State of expression of similar variety</i>	Określenie cechy u odmiany zgłoszonej <i>State of expression of candidate variety</i>
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Nie ma
None

17. Dodatkowe informacje
Additional information

- a) Dodatkowe dane
Additional data
- b) Uwagi
Remarks

18. Podpis
Signature

DYREKTOR

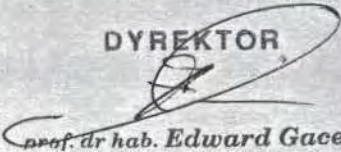

prof. dr hab. Edward Gacek





Figure 1. Variety 'Kornelija' at boot stage to beginning of heading stage



Figure 2. Variety 'Kornelija' in the beginning of grain filling



Figure 3. Hulless barley varieties: 'Irbe' (on the left) and 'Kornelija' (on the right).



Figure 4. Variety 'Kornelija' sowing just before harvesting.



Figure 5. Variety 'Kornelija' ears in full ripening, before harvesting



Figure 6. Variety 'Kornelija'. Anthocyanin coloration of nerves of lemma: medium to strong



Figure 6. Variety 'Kornelija' grain

DESCRIPTION OF VARIETY 'Kornelija' (some selected features)

6. HEAD

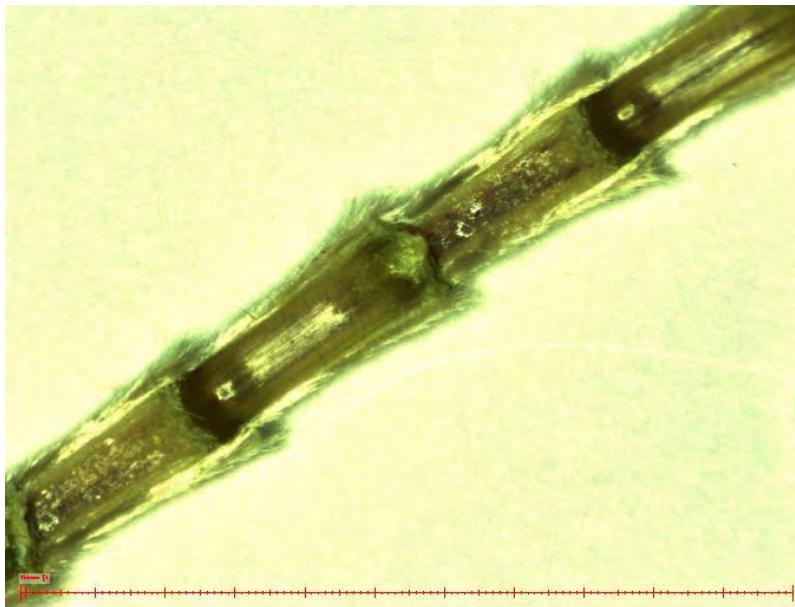


Figure 7. RACHIS (Hair on edge): 3=covered

7. GLUME



Figure 8. Glume length: 1= 1/2 Lemma



Figure 9. Glume hairs: 3=long



Figure 10. Glume Hair covering: 4=Completely Covered



Figure 11. Glume awns. 3=More than Equal to Length of Glume

8. LEMMA



Figure 10. Lemma Teeth: 3=numerous



Figure 11. Shape of Base: 1=Depression

9. STIGMA



Figure 13. Hairs: 2= Many

Exhibit E - Statement of the Basis of Ownership

1. Does the applicant own all rights to the variety?

Yes

2. Is the applicant a U.S. national or a U.S. based entity?

No

Applicant Country:

Latvia

3. Is the applicant the original owner?

Yes

4. Additional explanation on ownership (Trace ownership from original breeder to current owner):

According to Latvian law, the employer is the owner / breeder if the variety has been developed by an employee.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.