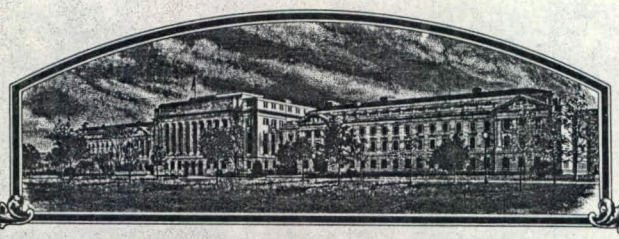


No. 8300084

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Cebeco-Handelsraad

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED 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 eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED 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 USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Apex'

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 this 26th day of July in the year of our Lord one thousand nine hundred and eighty-five.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO.0581-0055

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S): Cebeco-Handelsraad
2. TEMPORARY DESIGNATION: Cebeco 7933
3. VARIETY NAME: APEX
4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*: Blaak 31, P.O. Box 182, 3000 AD Rotterdam, The Netherlands
5. PHONE *(Include area code)*: 10-544911

FOR OFFICIAL USE ONLY
PVPO NUMBER: 8300084

6. GENUS AND SPECIES NAME: Hordeum vulgare L.
7. FAMILY NAME *(Botanical)*: gramineae

FILING — DATE: 3/28/83 — TIME: 9:30 [X] A.M. [ ] P.M.

8. KIND NAME: spring barley
9. DATE OF DETERMINATION: 1977

FEES RECEIVED — AMOUNT FOR FILING: $ 1,000 — DATE: 3/28/83 — AMOUNT FOR CERTIFICATE: $ 500.00 — DATE: 7/1/85

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*: agricultural cooperative
11. IF INCORPORATED, GIVE STATE OF INCORPORATION: Rotterdam, The Netherlands
12. DATE OF INCORPORATION: July 1st, 1899

13. NAME AND ADDRESS OF APPLICANT REPRESENATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Ext letter + authorization dated 10/3/84

INTERNATIONAL SEEDS INC.
P.O. BOX 168, 820 FIRST STREET
HALSEY, OREGON 97348

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. [X] Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. [X] Exhibit B, Novelty Statement
c. [X] Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
d. [X] Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* [X] Yes *(If "Yes," answer items 16 and 17 below)* [X] No

Ext 7/1/85

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [X] Yes [ ] No
17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? [X] Foundation [X] Registered [X] Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? [X] Yes *(If "Yes," give names of countries and dates)* [ ] No

The Netherlands	04.01.1980	Denmark	05.01.1982
France	02.06.1982	United Kingdom	22.12.1980
West Germany	05.12.1979		

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? [X] Yes *(If "Yes," give names of countries and dates)* [ ] No

The Netherlands	02.06.1982
United Kingdom	17.12.1982

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT: Nationale coöperatieve aan- en verkoop- vereniging voor land- en tuinbouw b.a. CEBECO-HANDELSRAAD — DATE: Rotterdam, 23 FEB. 1983

SIGNATURE OF APPLICANT — DATE

FORM LMGS-470 (9-81) (Edition of 1-78 is obsolete)

NOTE: THERE HAS BEEN A CHANGE IN THE FEES.

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $1,000 fee ($500 filing fee and $500 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain, and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. [See section 180.175 of the Regulations and Rules of Practice (as amended November 8, 1982).] Retrain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item	
9	Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
14a	Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
14b	Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
14c	Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
14d	Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
15	If "Yes" is specified *(seed of this variety be sold by variety name only as a class of certified seed)* the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. *(See section 180.16 of the Regulations and Rules of Practice.)*
16	See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

EXHIBIT A

Origin and breeding history of the variety

Apex was selected from the cross

Aramir x F_1 {Cebeco 6721 x (Julia^3 x <Volla x L100>)}

This cross was made in 1971. After multiplying the population out of this cross during 2 years single plants were selected in the field. This single plant selection was followed by earrow and earrow progeny selection combined with replicated yield trials.
Out of 14 selected earrow progenies the best progeny was selected and used as a basis of the new variety APEX.

Maintenance: The variety is maintained by means of line selection.

Multiplication scheme:

1. breeders seed - grown at the plant breeding station
2. prebasic seed - grown and field inspected at the plant breeding station and/or at multiplication farms (seed growers)
3. basic seed - grown and field inspected at multiplication farms (seed growers)
4. certified seed (C_1) - grown and field inspected at multiplication farms (seed growers).

Results of official D.U.S. tests in The Netherlands (RIVRO), France (INRA/GEVES), England (NIAB) and West Germany (Bundessortenamt) showed that APEX is a uniform and stable variety.

No variants have been observed during the seed increase of APEX to date.

Exhibit B

PLANT VARIETY PROTECTION CERTIFICATE NO. 8300084, "APEX" BARLEY

Novelty Statement - Revised 20 April 1985

Novelty of Apex is based on the unique combination of characteristics as summarized in Exhibit D (additional description of the variety) and the official description drawn up by the Dutch Board for Plant Breeder's Rights.

Apex is a two rowed spring barley of mid-season maturity and short stature.

Apex most closely resembles the varieties Triumph and Piroline.

Apex differs from Triumph:

- by showing a semi-erect growth habit at tillering while Triumph shows a semi-prostrate growth habit at that stage (see Appendix C).

- by heading 4 to 5 days earlier than Triumph (under Dutch conditions).

- by having no hairs at the base of the concave surface of the rachis segments while Triumph has.

Apex differs from Piroline:

- by having a long haired rachilla while Piroline has a short haired rachilla.

- by having no spicules on the inner lateral nerves of lemma while Piroline shows a weak spiculation.

- by having hairs on the lemma base of the sterile spikelet, while Piroline has none.

As evidence of the novelty of the variety Apex we enclose a translation of the official report of the D.U.S. tests of this variety, carried out by the Dutch authorities (RIVRO), as well as a translation of the official Certificate of Registration of Apex.

RECEIVED
APR 25 1985
U.S. DEPARTMENT
OF AGRICULTURE
AMS
EVPO

EXHIBIT B. PVP APPLICATION NO. 8300084, "APEX" BARLEY

APPENDIX C

	VARIETY		
	Apex	Triumph	Piroline
1. Growth habit at tillering	semi-erect	semi-prostrate	
2. Days to heading after base date of zero	0	5	
3. Basal hairs at rachis base	absent	present	
4. Size of rachilla	long		short
5. Rachilla hairs	present		present
6. Spicules on inner lateral lemma nerves	absent		weakly, present
7. Hairs on lemma base of sterile spikelet	present		absent

U.S. DEPARTMENT
AMS
EVPO
RECEIVED
APR 25 1985
AGRICULTURE

8300084

ONTVANGEN
5 JULI 1982
Beantw.

RAAD VOOR HET KWEKERSRECHT

BEWIJS VAN INSCHRIJVING

voor een ras van het gewas Zomergerst

De Raad voor het Kwekersrecht verklaart,

dat op aanvrage nummer GRS 277

ingediend op 4 januari 1980 te 24.00 uur,

het hierna beschreven ras op 2 juni 1982

onder volgnummer 5807

en onder de benaming Apex

in het Nederlands Rassenregister is ingeschreven met aantekening van verlening van kwekersrecht

ten name van Cebeco-Handelsraad
Postbus 182
3000 AD Rotterdam

Wageningen, 1 juli 1982

De Raad voor het Kwekersrecht,

sekretaris.

476. Zomergerst - 23.3

RIJKSINSTITUUR VOOR HET RASSENONDERZOEK VAN CULTUURGEWASSEN

Rapport betreffende het ras

Apex, GRS 277

april 1982

Aanvraag volgens art. 35 Z.P.W.

Aanvrager : Cebeco-Handelsraad, Rotterdam.

Datum van aanvraag : 4 januari 1980.

Ontstaan : volgens het beschrijvingsblad is het ras ontstaan uit de kruising : Aramir x F1 [Ceb.6721 x {Julia^3 x (Volla x L 100)}]

Plaatsen en jaren van onderzoek : Wageningen 1980 en 1981
Dronten 1980 en 1981.

In de combinatie van kenmerken in de rasbeschrijving toont het ras geen overeenkomst met andere ons bekende rassen.

Er zijn tijdens het onderzoek geen tekortkomingen ten aanzien van de homogeniteit en de bestendigheid geconstateerd.

Het is niet gebleken dat het ras voor de datum van aanvraag in het verkeer is gebracht.

Conclusies:

1. Apex onderscheidt zich duidelijk van alle andere ons bekende rassen.
2. Het ras is voldoende homogeen.
3. Het ras is bestendig.
4. Op het tijdstip van aanvraag kon het ras als nieuw worden aangemerkt.

De deskundige :

R Duijvenbak

BESCHRIJVING

Verzoekende instantie	: Raad voor het Kwekersrecht, Wageningen	Aanvraag no. : GRS 277
Rapporterende instantie	: RIVRO, Wageningen	

Gewas : zomergerst
Voorl. aanduiding : Cebeco 7933
Benaming : Apex

Type : tweerijige zomergerst.

Halm : kort.

Blad : aan de zich strekkende halm smal, tamelijk zwak hangend, tamelijk lichtgroen met roodkleuring in bladschede en oortjes.

Aar : middelmatig lang, tamelijk smal met aan de top tamelijk zwak gekleurde kafnaalden; aanvankelijk rechtopstaand, tijdens de rijping neigend en bij rijpheid sterk geneigd. Aarspil met tamelijk korte leden.

Korrel : met lang behaarde rhachilla, onbehaarde randen langs de groeve, ongetande binnenste zijnerven en met gekleurde nerven tijdens de rijping.

Het ras komt tamelijk vroeg in aar.

Verschil met andere rassen :

De beschrijving kenmerkt het ras.

TRANSLATION

The Board for the Plant Breeder's Rights

CERTIFICATE OF REGISTRATION

for a variety of the crop spring barley

The Board for the Plant Breeder's Rights declares,

that with registration number GRS 277

submitted on 4th of January 1980 at 24.00 hrs,

the variety described hereafter on 2nd of June 1982

under serial number 5807

and with the denomination Apex

has been entered into the Netherlands Register of Plant Varieties

with annotation of grant of Plant Breeder's Rights

in the name of Cebeco-Handelsraad
P.O. Box 182
3000 AD Rotterdam

Wageningen, 1st of July 1982

The Board for the Plant Breeder's Rights

Secretary

GOVERNMENT INSTITUTE FOR RESEARCH ON VARIETIES OF CULTIVATED PLANTS

Report regarding the variety
Apex, GRS 277

April 1982

Application in accordance with art. 35 Z.P.W.

Applicant: Cebeco-Handelsraad, Rotterdam.

Application date: 4th January 1980.

Origin: according to the technical questionnaire the variety was selected form the cross: Aramir x F1 {Ceb. 6721 x (Julia^{3}x<Volla x L100>)}

Places and years of testing: Wageningen 1980 and 1981
Dronten 1980 and 1981.

In the combination of characters in the official description the variety doesn't show any similarity to other varieties known to us.

During the testing years no shortcomings with respect to the uniformity and the stability were observed.

It didn't appear that the variety has been commercialized before the date of application.

Conclusions:

1. APEX is clearly distinct from all other varieties known to us.
2. The variety is sufficiently uniform.
3. The variety is stable.
4. At the moment of application the variety could be considered as being new.

The Expert:

DESCRIPTION

Requesting Authority: The Board for the Plant Breeder's Rights, Wageningen

Application Nr.: GRS 277

Reporting Authority: RIVRO, Wageningen

Crop: spring barley
Breeders' reference: Cebeco 7933
Denomination: Apex

Species: two-rowed spring barley.

Stem: short.

Leaf: during stem elongation narrow, rather weakly hanging, rather pale green with anthocyanin coloration in leaf sheath and auricles.

Ear: moderately long, rather narrow with on top rather weak anthocyanin coloration of the awns; initially erect and during ripening semi-erect.
Rachis with rather short segments.

Grain: rachilla hair type: long
hairiness of ventral furrow: absent
spiculation of inner lateral nerves of lemma: absent
anthocyanin coloration of nerves during ripening: present.

Heading date: rather early.

Difference from other varieties:
This description characterizes the variety.

FORM APPROVED: OMB NO. 40-R3822

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Barley)

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY *(HORDEUM VULGARE)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Cebeco-Handelsraad

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Blaak 31, P.O. Box 182
3000 AD Rotterdam, The Netherlands

FOR OFFICIAL USE ONLY
PVPO NUMBER 8300084
VARIETY NAME OR TEMPORARY DESIGNATION APEX

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. [0 8 9] or [0 9]) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

[1] 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER [4] Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT 4= semi-erect(see appendix I)

2. MATURITY (~~50% Flowering~~): XXXXXXXXXX Heading

[2] 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

[2] No. of days *Earlier* than ..... [5]
[1] No. of days *Later* than ..... [1]
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

3. PLANT HEIGHT (From soil level to top of head):

[2] 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

[0 9] Cm. *Shorter* than ..... [1]
[ ] Cm. *Taller* than ..... [ ]
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

4. STEM:

[1] Exertion *(Flag to spike at maturity)*: 1 = 0 - 3 cm. 2 = 3 - 10 cm. 3 = 10 - 15 cm. [2] Anthocyanin: 1 = ABSENT 2 = PRESENT

± [0 4] NO. OF NODES (Originating from node above ground) (4-5; depending on growing circumstances)

[1] Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 4 = MODIFIED CLOSED OR OPEN [1] Shape of Neck: 1 = STRAIGHT 2 = SNAKY 3 = OTHER (Specify) .

5. LEAF:

[1] Basal leaf sheath *(seedling)*: 1 = GLABROUS 2 = PUBESCENT [2-3] Position of flag leaf *(at boot stage)*: 1 = DROOPING 2 = UPRIGHT 3= horizontal

[3] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY [1 5] MM. WIDTH (First leaf below flag leaf) (see appendix I)

[2 6] CM. LENGTH (First leaf below flag leaf) [2] Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

[1] Type: 1 = TWO-ROWED 2 = SIX-ROWED [1] Density: 1 = LAX 2 = ERECT (Not dense) 3 = ERECT (Dense)

[2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) [3] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY

[ ] Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD [3] Rachis *(Hair on edge)*: 1 = LACKING 2 = FEW 3 = COVERED

7. GLUME:

[2] Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA [3] Hairs: 1 = NONE 2 = SHORT 3 = LONG

[4] Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED

[2] Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES 3 = MORE THAN EQUAL TO LENGTH OF GLUMES

[3] Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

FORM LPGS-470-5 (8-80) (Replaces edition dated 4-78 which may be used)

8300084

8. LEMMA:

[5] Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike) 5 = LONG (longer than spike) 6 = HOODED

[3] Awn Surface: 0 = AWNLESS 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

[2] Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS

[1] Hair: 1 = ABSENT 2 = PRESENT

[1] Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE

[2] Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

[2] Hairs: 1 = FEW 2 = MANY

10. SEED:

[2] Type: 1 = NAKED 2 = COVERED

[1] Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

[4] Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.) 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

[4] Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

[1] Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

± [0 2] PERCENT ABORTIVE

± [4 8] GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SEPTORIA	[2] NET BLOTCH	[2] SPOT BLOTCH	[2] POWDERY MILDEW
[1] LOOSE SMUT	[0] BACTERIAL BLIGHT	[1] COVERED SMUT	[0] FALSE LOOSE SMUT
[0] STEM RUST	[2] LEAF RUST	[1] SCAB	[1] SCALD
[0] AY	[0] BSMV	[1] BYDV	[ ] OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

[0] GREEN BUG	[0] ENGLISH GRAIN APHID	[0] CHINCH BUG	[0] ARMYWORM
[0] GRASS HOPPERS	[0] CERIAL LEAF BETTLE	[ ] OTHER (Specify) _____	

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[ ] DDT [ ] OTHER (Specify) _____

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Betzes	Seed size	Trumpf
Leaf size	Georgie	Coleoptile elongation	Piroline
Leaf color	Georgie	Seedling pigmentation	Piroline
Leaf carriage	Piroline		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

FORM LPGS-470-5 (8-80) (REVERSE)

All data were observed in replicated trials in Holland!

APPENDIX 1

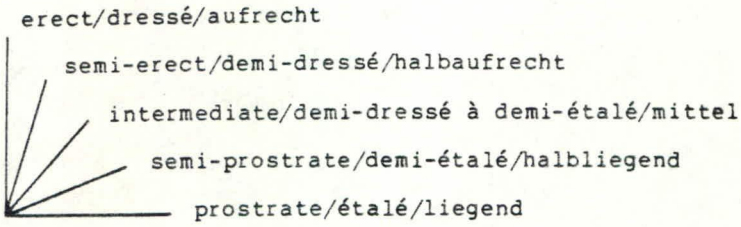
EXPLANATIONS AND METHODS/EXPLICATIONS ET METHODES/ ERLÄUTERUNGEN UND METHODEN

Ad/Add./Zu 1

Plant: growth habit

Plante: port au tallage

Pflanze: Wuchsform



The growth habit should be assessed visually from the attitude of the leaves and tillers. The angle formed by the outer leaves and the tillers with an imaginary middle axis should be used.

Le port doit être déterminé visuellement d'après le port des feuilles et des talles. On utilisera l'angle formé par les feuilles externes et les talles avec un axe central imaginaire.

Die Wuchsform sollte auf Grund der Haltung der Blätter und Triebe visuell erfasst werden. Der von den äusseren Blättern und Trieben mit einer imaginären Mittelachse gebildete Winkel sollte verwendet werden.

Ad/Add./Zu 3

Flag leaf: attitude

Dernière feuille: port

Oberstes Blatt: Haltung

1. all leaves are rectilinear/toutes les feuilles sont dressées/alle Blätter sind gerade

3. about 1/4 of the plants with recurved leaves/environ 1/4 des plantes ont des feuilles retombantes/etwa 1/4 der Pflanzen mit gebogenen Blättern

5. about 1/2 of the plants with recurved leaves/environ 1/2 des plantes ont des feuilles retombantes/etwa die Hälfte der Pflanzen mit gebogenen Blättern

7. about 3/4 of the plants with recurved leaves/environ 3/4 des plantes ont des feuilles retombantes/etwa drei Viertel der Pflanzen mit gebogenen Blättern

9. all leaves are recurved/toutes les feuilles sont retombantes/alle Blätter sind gebogen.

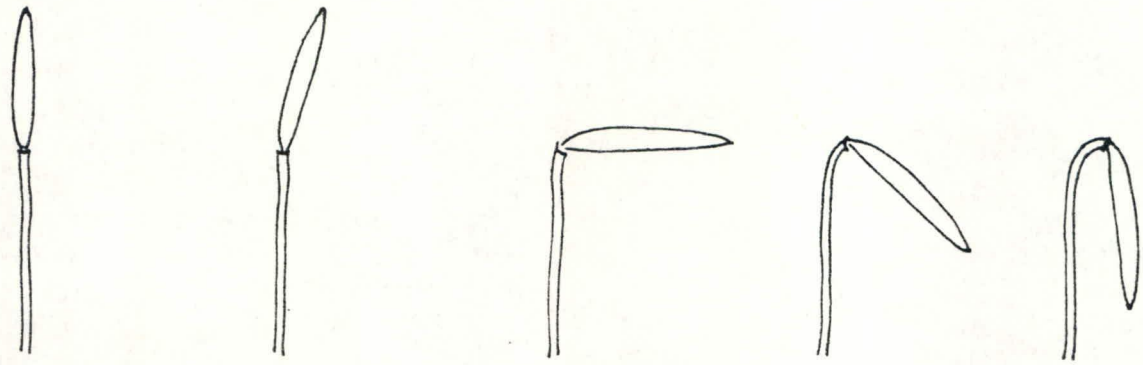
APPENDIX 2

Ad/Add./Zu 11

Ear: attitude

Epi: port

Ähre: Haltung



erect
droit

aufrecht

semi-erect
légèrement incurvé
geneigt

horizontal
demi-incurvé

waagerecht

3

semi-drooping
incurvé

überhängend

4

drooping
très incurvé

stark überhängend

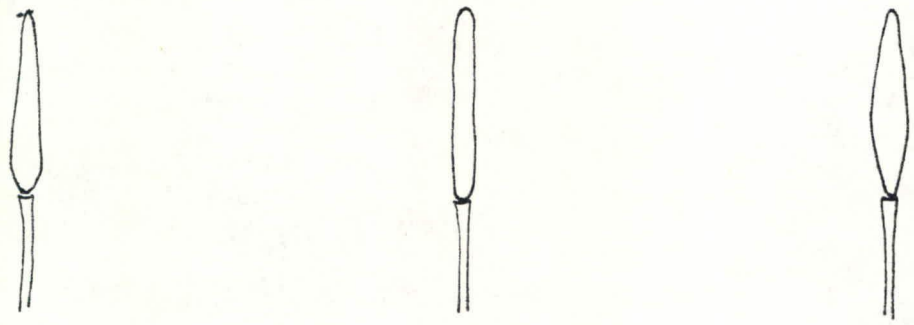
5

Ad/Add./Zu 14

Ear: shape

Epi: forme

Ähre: Form



tapering
pyramidal
pyramidenförmig

parallel
à bords parallèles
parallel

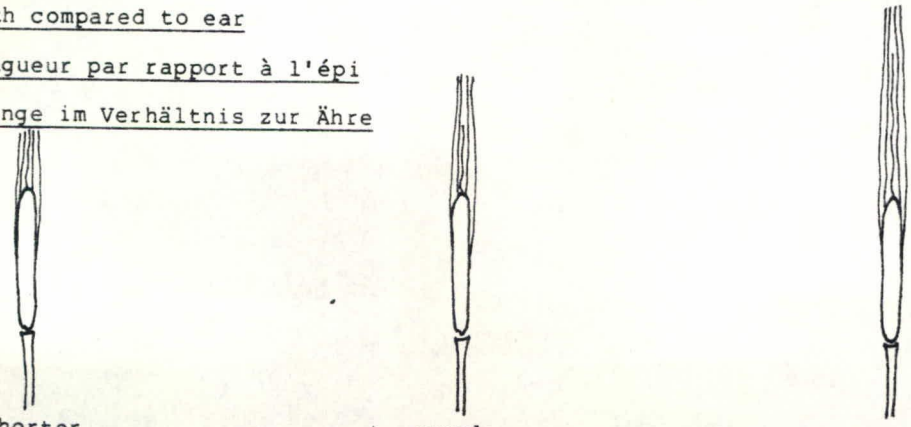
fusiform
fusiforme
spindelförmig

Ad/Add./Zu 16

Awn: length compared to ear

Barbe: longueur par rapport à l'épi

Granne: Länge im Verhältnis zur Ähre



shorter
plus courte
kürzer

equal
de même longueur
gleich lang

longer
plus longue
länger

Exhibit D, Additional Description of the Variety

APEX

Origin: Aramir x F1 {Cebeco 6721 x (Julia^3 x <Volla x L.100>)}

PLANT

1. Growth habit at tillering:	semi-erect
2. Basal leaf sheaths	glabrous and weakly pigmented
3. Leaf size:	rather long and rather narrow
4. Leaf attitude (carriage):	intermediate
5. Flagleaf attitude:	semi-erect
6. Anthocyanin coloration of auricles:	medium to strong
7. Colour of the leaves:	light to medium green
8. Glaucosity (waxiness) of leaf-sheaths at heading:	medium to strong
9. Exertion (flag to spike):	weak to medium (± 2.5 cm)
10. Plant height:	medium

EAR

11. Ear glaucosity:	medium
12. Number of rows:	two
13. Ear shape:	parallel shaped (strap)
14. Ear length:	long (± 9.5 cm)
15. Presence of awns:	present
16. Awn length:	longer than length of the ear (± 3.5 cm)
17. Anthocyanin coloration of the awn tips:	medium to strong
18. Ear density:	lax. (D = 34.5)
19. Awn-spiculation on the central nerve:	present
20. Awn-spiculation of the margins:	total, medium size
21. Ear attitude at ripening:	semi-erect

RACHIS

22. Size of first segment:	short and broad
23. Curvature of first segment:	medium curved
24. Humping of segments (mid-third of ear):	weak
25. Shape of segments (mid-third of ear):	straight and flared
26. Hairiness of segment margins:	strong
27. Shoulder hairs:	strong
28. Hairs on concave surface:	absent or very weak
29. Interglume hairs:	absent

STERILE SPIKELET

30. Angle of sterile spikelet:	rather strongly divergent
31. Length oflemma:	long
32. Shape of tip:	more or less pointed
33. Hairiness of lemma (base):	weak to medium
34. Spiculation of lemma:	weak
35. Colour of the rachilla:	yellowish brown
36. Hairiness of rachilla:	weak

GRAIN

37. Grain type:	A
38. Rachilla hair type:	long hairs (V at apex)
39. Presence of husk:	present
40. Anthocyanin coloration of the nerves:	strong
41. Spiculation of inner lateral nerve:	absent
42. Spiculation of outer lateral nerve:	weak to medium
43. Hairiness of ventral furrow:	absent
44. Lodicules:	long collar type, shape type IV (clasping)
45. Thousand kernel weight:	48 grams
46. Shape of tip of palea:	long and jutting out

$$D = \frac{\text{total number of spikelets}}{\text{rachis length in mm}} \times 100$$

EXHIBIT E

8300084

CEBECO-HANDELSRAAD

APEX (spring barley)

Authorization:

The undersigned: CEBECO-HANDELSRAAD
P.O. Box 182, Blaak 31
3000 AD ROTTERDAM
The Netherlands

declare that they are the owners of the new spring barley variety APEX.

They also declare that they authorize:

International Seeds Inc.
P.O. Box 168, 820 First Street
HALSEY, Oregon 97348
U.S.A.

to submit for and on behalf of them an application for Plant Variety Protection Certificate in the U.S.A. for the spring barley variety APEX,

to prepare, sign and submit the documents necessary for that purpose and

to make all attendances upon the Plant Variety Protection Board relating to the application for Plant Variety Protection Certificate for their variety APEX.

Rotterdam, 11th May 1984

Nationale coöperatieve aan- en verkoop-
vereniging voor land- en tuinbouw b.a.
CEBECO-HANDELSRAAD
(Ir. C.J. van den Bergh)

mod. 915 3 4-1

National agricultural co-operative wholesale society

CEBECO
HANDELSRAAD

P.O. Box 182, 3000 AD Rotterdam, The Netherlands Telephone +31 10-4544911 Telex 21398 cbco nl Fax +31 10-4113889
Bank: Rabobank Nederland, Account number 30.00.00.065 Giro bank account Rabobank 5658 stating 30.00.00.065
Address: Blaak 31, 3011 GA Rotterdam

Registered No. 54.571 Rotterdam

BY AIRMAIL
U.S. Department of Agriculture
Plant Variety Rights Office
PGGI Building 001, room 335, Barc-West
BELTSVILLE
Maryland 20705
U.S.A.

Dept: WVDK/tg

Direct dial number: 4544 504

ROTTERDAM, September 22, 1989

Dear Sir/Madam:

You may already know that the Plant Breeding and Seeds Departments of Cebeco-Handelsraad have integrated into the new company CEBECO ZADEN B.V.

Therefore we kindly request you to transfer all varieties, for which an application has been made or which have been entered in the name of Cebeco-Handelsraad, to the name of CEBECO ZADEN B.V.
For the sake of clarity we give you once more the full address:

CEBECO ZADEN B.V.
P.O. Box 182
3000 AD Rotterdam
the Netherlands.

Under this cover you will find a list in which we mention all varieties involved according to the latest data that we have. We shall be pleased to receive your confirmation of transfer at your earliest convenience. Any possible invoice for charges due can be sent to Cebeco Zaden BV.

Yours faithfully,

CEBECO-HANDELSRAAD
Transferrer

Rotterdam,

Nationale coöperatieve aan- en verkoop-
vereniging voor land- en tuinbouw b.a.
CEBECO-HANDELSRAAD

CEBECO ZADEN B.V.
Transferee

Rotterdam,

CEBECO ZADEN B.V.
Postbus 182 - 3000 AD Rotterdam

Enclosure

CEBECO
ZADEN B.V.

Varieties of Cebeco Zaden B.V. in the USA

with PVP

species	variety	name	date of grant	no. grant
Red fescue	Center	Center	88-01-15	8700077
Spring barley	Bellona	Bellona	85-07-26	8300085
	Apex	Apex	85-07-26	8300084
	Efron	Efron	85-10-31	8500012
Perennial ryegrass	Elka	Elka	82-02-18	8100018
White pea	Miranda	Miranda	82-10-28	8100054
	Belinda	Belinda	86-03-31	8500013
Blue pea	Ricardo	Ricardo	85-08-30	8500014
	Maxi	Maxi	83-03-24	8000016
	Othello	Othello	86-03-31	8500015
		application made		
Perennial ryegrass	EG 138	Surprise	88-12-19	8900062
Red fescue	Frc 137	Capitol		
	CRU 499	Cindy	88-12-19	8900061
	Frr 130	Claudia		
Kentucky bluegrass	Pp 112	Ampellia		
White pea	1415	Impala	89-1-26	8900081
	1416	Renata	89-04-04	8900145
Blue pea	Solara	Solara	88-01-29	8800056