Zwaan & De Wiljes, Ltd.

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 seventeen 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. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS ED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PERENNIAL RYEGRASS

'Sprinter'

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* 15th *day of* February *in the year of our Lord one thousand nine hundred and* seventy-seven

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(2-12-71)

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION SPRINTER	2. KIND NAME Perennial Ryegrass	FOR OFFICIAL USE ONLY PVPO NUMBER 72065
3. GENUS AND SPECIES NAME Lolium perenne L	4. FAMILY NAME *(Botanical)* Gramineae	FILING DATE 12-10-71 / TIME 1:30 A.M. P.M.
	5. DATE OF DETERMINATION 28-8-'70	FEE RECEIVED $ 750.00 / CHARGES —
6. NAME OF APPLICANT(s) ZWAAN & DE WILJES LTD.	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* Stationsstraat 124 P.O. Box 2 SCHEEMDA/The Netherlands	8. TELEPHONE AREA CODE AND NUMBER 05979-233
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. STATE OF INCORPORATION Limited Liability Company	11. DATE OF INCORPORATION 1914

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

no representative. All documents relevant to this application should be sent to Zwaan & de Wiljes, Scheemda.

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [x] 12A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52, P.L. 91-577)*
- [x] 12B. Exhibit B, Botanical Description of the Variety
- [x] 12C. Exhibit C, Objective Description of the Variety
- [x] 12D. Exhibit D, Data Indicative of Novelty
- [x] 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. *(See Section 52, P.L. 91-577).*

14A. 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), P.L. 91-577) (If "Yes," answer 14B and 14C below.)* [x] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [x] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? 2 generations viz. basic-seed and certified seed, first generation.

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes 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 (P.L. 91-577).

29th November 1971
(DATE)

ZWAAN & DE WILJES LIMITED
(SIGNATURE OF APPLICANT)

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(DATE)

(SIGNATURE OF APPLICANT)

FORM GR-470 (REVERSE)

RECEIVED DEC 10 1971 U.S. DEPARTMENT OF AGRICULTURE C&MS GRAIN DIVISION

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unles noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety.

12a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

12b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.

12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

Novelty Statement "Sprinter"

"Sprinter" is more similar to "Lamora", "Barenza", "Vigor", "Compas", "Springfield" and "Maestro", than any other variety.

"Sprinter" differs from "Lamora", "Barenza" and "Compas" by having a darker foliage color, dark green versus medium green, and by a maturity date (50% headed) being 5 or more days later. "Sprinter" has a darker foliage color, a more postrate growth habit and a faster spring growth than "Vigor", "Springfield" and"Maestro".

In a rating scale for color darkness "Sprinter" was scored 8,8, whereas the other varieties were scored 7,1 or lower. A difference of 1,4 was required for a statistically significant difference at the 0,05 level of significance.

Attachment to application for Plant Variety Protection Certificate of Lolium perenne L "SPRINTER"

12e Exhibit E - Statement of the Basis of Applicant's Ownership

Applicant, Zwaan & de Wiljes Limited, Scheemda (The Netherlands) is the actual breeder.

II Application No. 72065
'Sprinter'

9/3/75

U.S. DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Grain Division
Objective Description of Cultivars
RYEGRASS
(*Lolium spp.*)

1. SPECIES:

[2] 1=L. multiflorum (annual or Italian: includes Westerwoldicum)
2=L. perenne (perennial) 3=L. rigidum (includes Wimmera)
4=Hybrid (of species) _____ 5=Other (specify) _____

2. PLOIDY:

[1] 1=Diploid 2=Tetraploid 3= Other (specify) _____

3. DURATION:

[3] 1=Annual or biennial 2=Short lived perennial (3-4 years)
3=Perennial (more than 4 years)

STANDARD CULTIVARS

1=Gulf 2=Wimmera 62 3=Linn 4=Pelo
5=Norlea 6=Aberystwyth S-23 7=Manhattan 8=Pennfine

4. MATURITY (50% Headed): (Use standard cultivars from above.)

[9] 1=Very early 3=Early 5=Medium 7=Late 9=Very late
[—] Days earlier than [—] standard cultivar
[9] Days later than [4] standard cultivar

5. MATURE PLANT HEIGHT: (Use standard cultivars from above.)

[70] cm. High [1] cm. Shorter than [4] standard cultivar
[3] cm. Taller than [7] standard cultivar

6. PERCENT WINTER DAMAGE (estimated as percent of the area appearing dead):
(Use standard cultivars from above.)

[0] Percent damage of application cultivar
[0] Percent damage of [7] standard cultivar

7. TURF DENSITY: (Use standard cultivars from above.)

[160] Tillers per 100 sq. cm.
[19] Less tillers per 100 sq. cm. than [7] standard cultivar
[10] More tillers per 100 sq. cm. than [4] standard cultivar

8. FLAG LEAF (at full growth): (Use standard cultivars from above.)

[14.1] cm. Length (from ligule to tip)
[—] cm. Shorter than [—] standard cultivar
[2.3] cm. Longer than [7] standard cultivar
[46.0] mm. Width (at widest point)
[—] mm. Narrower than [—] standard cultivar
[2.0] mm. Wider than [4] standard cultivar
[7] Flag leaf at boot stage: 1=Deflexed 3=Recurved 5=Horizontal
7=Semi-erect 9=Erect

9. LEAVES:

[3] Vernation: 1=Leaves rolled in young shoots
2=Leaves semi-rolled (folded with rolled edges)
3=Leaves folded in young shoots
[100] % Plants with anthocyanin in lower leaf sheath
[3] Foliage color: 1=yellow green 2=medium green 3=blue green

10. SPIKE:

[196] mm. Spike length (tip to internode below lowest floret)
[—] mm. Shorter than [—]
[28] mm. Longer than [4]
(Use standard cultivars from above.)

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10. SPIKE (continued):

mg. per ten spikes (trimmed to internode below lowest floret)
mg. lighter per ten spikes than
mg. heavier per ten spikes than } Use standard cultivars from above.
Florets per spikelet

Percentage of plants with:

Rachis: 100 % smooth; 0 % rough
Spike color: 100 % green; 0 % purple
Lemma: 0 % awned; 0 mm. awn length

8 mm. glume length
2 1=Spikelet length nearly equal to outer glumes
2=Spikelet length much longer than outer glumes

11. COLEOPTILE:

% Plants with anthocyanin in coleoptile

12. ANTHER COLOR:

0 % Plants with white anthers
0 % Plants with purple anthers
100 % Plants with yellow anthers

13. ROOT AND PLANT CHARACTERS:

100 % Plants with prostrate growth habit
0 % Plants with upright growth habit
% Plants with fluorescent roots

14. SEED:

808 mg. per 1,000 seed
51 mm. total length of 10 seeds
12 mm. total width of 10 seeds

15. DISEASE (0=Not tested, 2=Highly susceptible, 4=Moderately susceptible, 6=Moderately resistant, 8=Highly resistant):

6 Crown rust (Puccinia coronata)
8 Leaf spot (Helminthosporium)
0 Snow mold (Typhula)
0 Dollar spot (Sclerotinia)
8 Mildew
6 Red thread (Corticium)
0 Brown patch (Rhizoctonia)
6 Other (specify) Fusarium.

16. INSECT (0=Not tested, 2=Highly susceptible, 4=Moderately susceptible, 6=Moderately resistant, 8=Highly resistant):

Specify

17. GIVE RESEMBLANCE VALUE IN LEFT COLUMN AND VARIETY IN RIGHT COLUMN FOR VARIETY WITH WHICH COMPARISON IS MADE: (1=Less than, 2=Same as, 3=More erect, more resistant, denser, more persistent, darker or greater height.)

Resemblance	Character	Similar variety
2	Plant habit (erectness)	manhattan
3	Tillering	pelo
2	Winter hardiness	manhattan
	High temp.stress resistance	—
3	Turf persistence	manhattan
2	Plant color	manhattan
2	Vertical seedling growth rate	manhattan
	Crown density	—
2	Mower shredding resistance	manhattan

18. GIVE AREA OF ADAPTATION AND INTENDED USE: temperate zones

19. GIVE AREA TEST RESULTS PRESENTED FROM: BSA (Germany); IVRO (Holland); Rutgers University of New Jersey. The Sports turf research institute, Bingley (G.B

COMMENTS:

Scheemda, October 15th 1975

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ZWAAN & DE WILJES B.V.

Attachment to application for Plant Variety Protection Certificate of Lolium perenne L "SPRINTER"

Sprinter was developed for sportsfield purposes

Origin and Breeding History of the Variety.

12a Exhibit A.

1. The variety "Sprinter" has been derived from plants collected in the central eastern part of The Netherlands in 1968. The breeding system was through clonal selection and individual testing of clonal topcrosses between the best clones.

2. Seed was harvested from clonal plots in 1969. This seed was sown late 1969 in the greenhouse in order to determine on individual plants the homogeneity of the clones, date of shooting and vegetative development as compared with other varieties during 1970.
   In 1970 the variety "Sprinter" was established on 5 clones.

3. The homogeneity, based on observations on single plant observations on the clonal seed, was very good. It was observed that this homogeneity was better than in existing commercial varieties as Pelo, Semperweide or S 23.

4. See 12d.

Attachment to application for Plant Variety Protection Certificate of Lolium perenne L "SPRINTER"

Botanical Description of the Variety.

12b Exhibit B

The variety "Sprinter" has a dark foliage and is darker than many commercial varieties tested so far in various trials (S 23, Semperweide, Pelo, Manhattan). The leafwidth is slightly less than Perma.

Shooting date 5 days after Semperweide of Zwaan & de Wiljes, Scheemda, The Netherlands.

When the plants are mown during shooting all plants will flower again the same year under Dutch conditions. Culm length is equal to Semperweide.

The variety "Sprinter" shows similarities to "Perma" but the growth habitus is flatter and the leaf a little narrower. A very important characteristic is sprinter's very good turf formation. This was also observed in lawn trials in England by: The Sports Turf Research Institute. (See The Journal of the S.T.R.I. number 46 : 142) The S.T.R.I. found that out of 16 Perennial Ryegrasses tested for sportsfield purposes Sprinter (= ZW 68 - 49 in the article) rates highest.

Individual plants freely developing form a very compact clump. Sprinter is good resistant to rust.