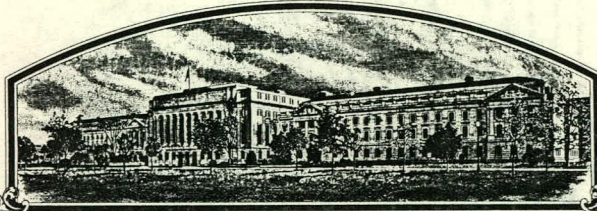


No.

8600016



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

## Daehnfelot, Inc.

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

RAPE

'Viking'

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 30th day of January in the year of our Lord one thousand nine hundred and eighty-seven.

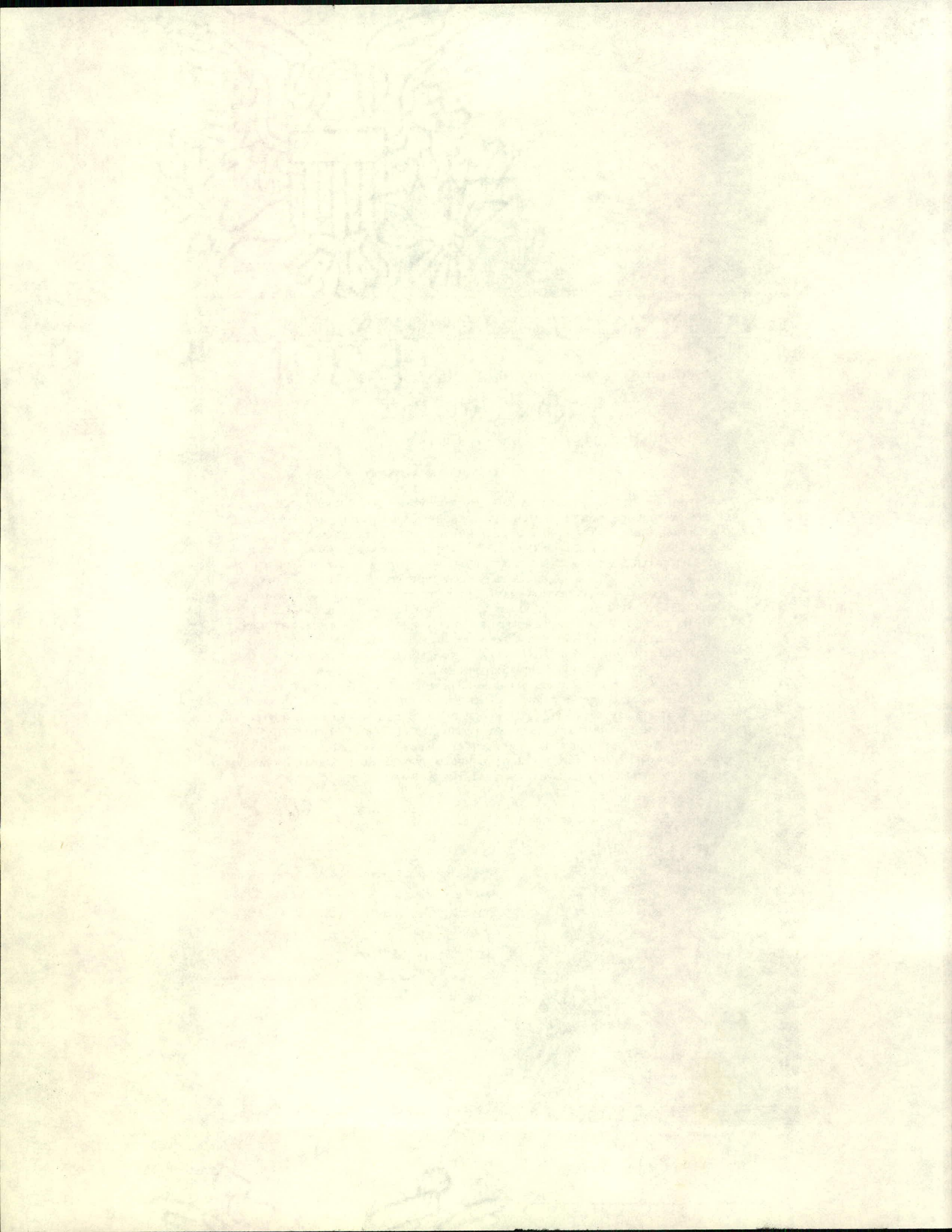
Attest.

*Kenneth H. Kern*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Richard E. Lyng*  
Secretary of Agriculture







U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 WAREHOUSE & SEED DIVISION

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**

*(Instructions on reverse)*

1. NAME OF APPLICANT(S) DAEHNFELDT, INC.		2. TEMPORARY DESIGNATION LD 9427		3. VARIETY NAME VIKING	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P. O. Box 947 Albany, OR 97321		5. PHONE (Include area code) (503)928-5868		<b>FOR OFFICIAL USE ONLY</b>	
6. GENUS AND SPECIES NAME Brassica napus		7. FAMILY NAME (Botanical) cruciferae		PVPO NUMBER 8600016	
8. KIND NAME Winter oilseed rape		9. DATE OF DETERMINATION 1984		FILING DATE 11/8/85 TIME 11:00 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		11. IF INCORPORATED, GIVE STATE OF INCORPORATION Oregon		FEES RECEIVED AMOUNT FOR FILING \$ 1,800 DATE 10/21/85 AMOUNT FOR CERTIFICATE \$ 200.00 DATE December 30, 1986	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Daehnfeldt, Inc. P. O. Box 947 Albany, OR 97321		12. DATE OF INCORPORATION Feb. 2, 1981		PHONE (Include area code): (503)928-5868	

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. <input type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)	c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
b. <input type="checkbox"/> Exhibit B, Novelty Statement	d. <input type="checkbox"/> 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.)  Yes (If "Yes," answer items 16 and 17 below)  No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  Yes  No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?  Foundation  Registered  Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?  Yes (If "Yes," give date)  No

19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES?  Yes (If "Yes," give names of countries and dates)  No

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 <i>David J Hayes</i> (DAVID J HAYES VICE PRESIDENT)	DATE 10/8/85
SIGNATURE OF APPLICANT	DATE



## INSTRUCTIONS

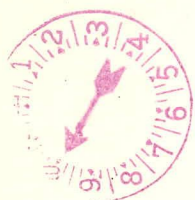
**General:** Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$1,800 fee (\$200 filing fee and \$1,600 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Warehouse and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain 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 are clear differences; 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.

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EXHIBIT A

8600016

VIKING WINTER RAPE (Brassica napus)

ORIGIN AND BREEDING HISTORY

Viking (tested as LD 9427) was developed from a single plant selection within a population of low erucic winter rape derived from a cross between a low erucic acid winter rape line and the low glucosinolate spring rape variety Bronowski.

Subsequent selfings were used to select for low erucic acid and low glucosinolate content together with the winter type to develop high seed oil content and resistance to lodging.

Viking is totally stable homozygous diploid line with no variants.

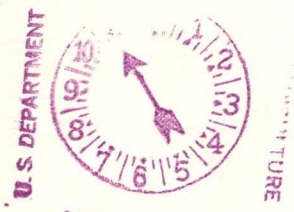
Stability and uniformity trials were conducted by Daehnfeltdt, Inc., Oregon 1983, 1984, and 1985.

Breeders seed is maintained by the breeder Daehnfeltdt A/S Denmark. Foundation seedstocks will be maintained by Daehnfeltdt, Inc., Oregon.



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EVPO



EXHIBIT B (REVISED)VIKING WINTER RAPE (Brassica napus)PLANT CHARACTERISTICS

Viking plant habit is typically that of a winter oilseed rape and most closely resembles the variety Jet Neuf with the following differences:

1. Begins flowering 4-5 days later than Jet Neuf, and the end of flowering is about 3 days later than Jet Neuf.
2. Plant height varies with Jet Neuf: Viking: 135 cm  
Jet Neuf: 130 cm
3. Viking is slightly less resistant to lodging than Jet Neuf.
4. Viking differs significantly (p=0,001) from Jet Neuf in the following characters:

Mean of 100 measurements

	<u>Viking</u>	<u>Jet Neuf</u>
Silique length	65,14 mm	92,60 mm
Silique beak length	10,98 mm	18,23 mm
Silique width	3,86 mm	5,02 mm
Pedicel length	19,11 mm	25,98 mm
Seeds per silique	17,44	27,41

5. Over more locations and years Viking has yielded 1-3% higher oil content of the seed than Jet Neuf.
6. Viking is less winterhardy than Jet Neuf.
7. Glucosinolate content of the seed is much lower than Jet Neuf:

<u>Variety</u>	<u>Content</u>
Viking	0,40 milligramme/gram
Jet Neuf	2,80 milligramme/gram

8. Test years and locations 1983, 1984, 1985, 1986.  
Daehnfelt, Inc., Albany, Oregon (Halsey Research Farm)  
Daehnfeldt, Odense, Denmark
9. Data based on numerous replications and test plants.







U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

EXHIBIT C  
 (Rapeseed)

OBJECTIVE DESCRIPTION OF VARIETY

RAPESEED  
 (Brassica napus and B. campestris)

Name of Applicants(s) Daehnfeldt, Inc.	Temporary Design. LD 9427	Variety Name VIKING
Address (Street and No., or R.F.D. No., City, State, & Zip) 1100 Jackson Street, Albany, Oregon 97321, USA	Official Use	
	PVPO Number <b>8600016</b>	

1. SPECIES (See directions last page):

\* 1 = Brassica napus (Argentine) 2 = B. campestris (Turnip R.)

2. TYPE:

\* 2 1 = Spring (Candle) 2 = Winter (Dwarf Essex)

3. PLANT HEIGHT (at pod maturity):

135 cm Tall (compare to standard variety below - autumn sown):

<u>5</u> cm shorter than <u>Jet Neuf</u>	}	Candle	Westar
height same as _____		Jet Neuf	Hanna
_____ cm taller than _____		Dwarf Essex	Mikado

\* 3 Height Class (Autumn sown):

1 = Short (Candle)  
 2 = Medium short ( )  
 3 = Medium (Jet Neuf)  
 4 = Medium tall ( )  
 5 = Tall (Dwarf Essex)

Height Class (Spring sown):

1 = Short (Erglu)  
 2 = Medium short ( )  
 3 = Medium (Cresus)  
 4 = Medium tall ( )  
 5 = Tall (Petranova)

4. STEM ANTHOCYANIN:

1 1 = Absent 3 = Medium  
 2 = Weak 4 = Strong

5. SEED COTYLEDONS (Max. width fully developed; mean of 50 graded seeds):

<u>1</u> = Narrow (Erglu)	3 = Broad (Expander)	
2 = Medium (Primor)	Mean of 100 graded seeds	Viking 26,92 mm Jet Neuf 26,05 mm

6. SEEDLING GROWTH HABIT (leafrosette):

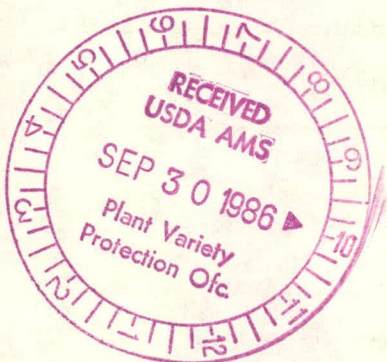
1 1 = Upright 2 = Prostrate (short photoperiod)

7. LEAVES:

\* 3 Margins (serration):

1 = Absent or very weak (Akela)  
 2 = Weak (Arvor, Jet Neuf)  
 3 = Medium (Primor)  
 4 = Strong (Candle, Kentan)

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## 7. LEAVES: (Continued)

\* 3 Lobing (fully developed leaf on plant or rosette):

- 1 = Absent or very weak (Akela)
- 2 = Weak (Arvor)
- 3 = Medium (Primor)
- 4 = Medium strong (Argus)
- 5 = Strong (Kentan)

\* 2 Leaf Attachment to stem:

- 1 = Fully clasping (Candle)
- 2 = Partial clasping (Jet Neuf)
- 3 = No clasping ( )

3 Color:

- 1 = Light green (Arvor)
- 2 = Medium green (Primor)
- 3 = Medium dark green (Oro)
- 4 = Dark green (Brunowski, Rapora)

4 Glaucosity:

- 1 = Absent
- 2 = Weak (Span)
- 3 = Weak to medium (Gulliver)
- 4 = Medium (Magnus)
- 5 = Medium to strong (Oro)
- 6 = Strong

## 8. FLOWERS:

\* 1 Flower Buds Location:

- 1 = Buds at tip of apical meristem (Jet Neuf)
- 2 = Buds immediately below apical meristem (Candle)

\* 2 Petal color:

- 1 = Pale yellow ( )
- 2 = Yellow (Jet Neuf, Primor)
- 3 = Orange ( )
- 4 = White ( )

1 Anther dotting (at opening of flower; give percentage: 0 %)

- 1 = Absent ( )
- 2 = Few ( )
- 3 = Medium (Primor)
- 4 = Many ( )

\* 4 Flowering class (Autumn sown): \_\_\_\_\_ Flowering class (Spring sown):

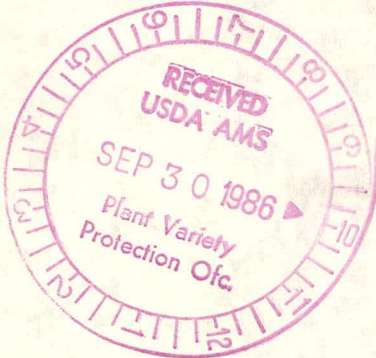
- |                        |                        |
|------------------------|------------------------|
| 1 = Very early (Arvor) | 1 = Very early (Tower) |
| 2 = Early (Primor)     | 2 = Early (Kosa)       |
| 3 = Medium early ( )   | 3 = Medium early ( )   |
| 4 = Medium late ( )    | 4 = Medium late ( )    |
| 5 = Late (Marcus)      | 5 = Late (Petranova)   |
| 6 = Very late ( )      | 6 = Very late ( )      |

## 9. PODS (Sliques):

1 Pod type:

- 1 = Bilateral single pod (Jet Neuf)
- 2 = Other ( )

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## 9. PODS: (Continued)

- 1 Silique beak length: Viking: 1,10 cm (mean of 100 siliques)  
 1 = Short (Forto) Jet Neuf: 1,82 cm (mean of 100 siliques)  
 2 = Medium (Liragold)  
 3 = Long (Rapol)

- \* 1 Pod length; (give length: 6,51cm) The measurement includes the beak  
 1 = Short ( ) Viking: 6,51 cm (mean of 100 siliques)  
 2 = Medium ( ) Jet Neuf: 9,26 cm (mean of 100 siliques)  
 3 = Long ( )

- \* 1 Pod width; (give width: 0,39cm) Viking: 0,39 cm (mean of 100 siliques)  
 1 = Narrow ( ) Jet Neuf: 0,50 cm (mean of 100 siliques)  
 2 = Medium ( )  
 3 = Wide ( )

- 4 Pod habit:  
 1 = Erect (Gulliver)  
 2 = Semi-erect to erect (Oro)  
 3 = Semi-erect  
 4 = Horizontal to semi-erect (Brink)  
 5 = Horizontal

- 2 Pedicel length: 1,91 cm Viking: 1,91 cm  
 1 = Very short ( ) Jet Neuf: 2,60 cm  
 2 = Short ( )  
 3 = Long ( )

- \* 4 Ripening Class (Autumn sown):  
 1 = Very early ( )  
 2 = Early ( )  
 3 = Medium ( )  
 4 = Late ( )  
 5 = Very late ( )

\* \_\_\_\_\_ days to maturity (compare to standard variety below):

- |  |   |             |        |
|--|---|-------------|--------|
| * _____ days earlier than _____              | } | Candle      | Westar |
| * _____ maturity same as _____               |   | Jet Neuf    | Hanna  |
| * <u>4-5</u> days later than <u>Jet Neuf</u> |   | Dwarf Essex | Mikado |

## 10. SEEDS:

\* 4,0 g/1000 unsized seed (compare to standard variety below):

- |  |   |             |        |
|--|---|-------------|--------|
| * <u>1,5</u> g less than <u>Jet Neuf</u> | } | Candle      | Westar |
| * _____ wt same as _____                 |   | Jet Neuf    | Hanna  |
| * _____ g more than _____                |   | Dwarf Essex | Mikado |

- \* 2 Weight Class (grams)  
 1 = less than 3 (Candle, )  
 2 = 3.0 - 3.9 ( )  
 3 = 4.0 - 5.0 (Jet Neuf, )  
 4 = more than 5.0 ( )

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## 10. SEEDS (Continued):

1 Seeds Per Pod; (give number: 1/4 per pod)

- 1 = Low ( )  
 2 = Medium ( )  
 3 = High ( )

Viking: 17,4  
 Jet Neuf: 27,4

\* 1 Testa Color:

- 1 = Black (Jet Neuf, )  
 2 = Red ( )  
 3 = Yellow (Yellow Sarson)  
 4 = Dark brown to black )  
 5 = Reddish-brown to black ( )  
 6 = Other \_\_\_\_\_

## 11. CHEMICAL COMPOSITION OF SEED:

\* 1 Erucic Acid:

- 1 = Low (less than 2%)  
 2 = Intermediate  
 3 = High (more than 50%)

\* 1 Glucosinate Content; (give: \_\_\_\_\_ millimoles/g, 0,40 mg/g)

- 1 = Low - Less than 30 millim/g (Candle)  
 2 = High - More than 30 millim/g (Mikado)

\* 47,6 % Oil                      21,2 % Protein (oil free meal)

## Fatty Acid Composition (%):

Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3	Eicosenoic 20:1	Erucic 22:1
* <u>4.9</u>	<u>1.5</u>	<u>56.2</u>	<u>22.0</u>	<u>10.4</u>	<u>2.0</u>	<u>0.2</u>

## 12. FROST TOLERANCE (Late spring frosts):

- \* 2 1 = Not hardy - susceptible (Indore)  
 2 = Moderately susceptible ( )  
 3 = Moderately resistant ( )  
 4 = Hardy (Bridger)

## 13. LODGING RESISTANCE:

- 4 1 = Weak (Span)                      3 = Moderately strong ( )  
 2 = Moderately weak (Olga)              4 = Strong (Torpe)

## 14. HERBICIDE RESISTANCE:

- \* 1 Atrazine: \_\_\_\_\_ :  
 1 = Susceptible (Jet Neuf)              1 = Susceptible  
 2 = Resistant ( )                      2 = Resistant

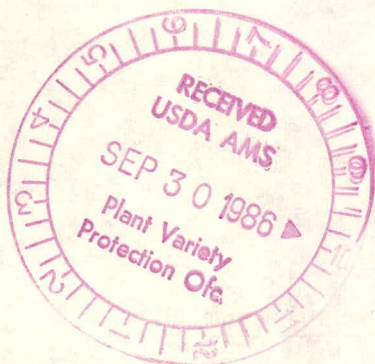
## 15. DISEASE RESISTANCE:

- 0 = Not tested                      2 = Low resistance              4 = High resistance  
 1 = Susceptible                      3 = Moderate resistance

\* 0 Sclerotinia Stem Rot (Sclerotinia sclerotiorum)

\* 0 Black Leg, Stem Canker (Leptosphaeria maculans, Plenodomus lingam)

(Phoma lingam)





## 15. DISEASES (Continued):

Page 5

- \*  White Rust (Albugo candida, A. cruciferrarum)  
 Light Leaf Spot (Pyrenopeziza brassicae)  
 Downy Mildew (Peronospora parasitica)  
 Rhizoctonia Root Rot (Rhizoctonia solani)  
 Alternaria Black Spot (Alternaria brassicicola)
- 
- 

## 16. COMMENTS:

% oil varies from trial to trial and an exact figure is difficult to state, however, % oil of Viking is 1-3% higher than Jet Neuf and 1-2% lower than Mikado when estimated over more location and years.

Oil percentage data:

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Average</u>
VIKING				
Denmark (Odense)	49,4	44,6	47,6	47,2
Oregon (Halsey)	51,4	47,6	44,9	48,0
JET NEUF				
Denmark (Odense)	45,4		46,2	
Oregon (Halsey)			42,9	
MIKADO				
Denmark (Odense)			48,7	
Oregon (Halsey)		49,5	47,0	

The differences between Viking and Jet Neuf are highly significant ( $p=0,001$ ) for the following characters: Silique beak length, Pedicel length, pod length, pod width, seeds per silique.

Significant differences exists also in winterhardiness, width of seed cotyledone and glucocinolate content.

17. DIRECTIONS: Select the number which characterizes the variety in the features above. Those characteristics marked with an asterisk \* should be recorded. Any others should be recorded if possible to help establish novelty or uniqueness. Characteristics described, including numerical measurements, should represent those that are typical for the variety.

Give test area Odense, Denmark, conditions unusual severe winter, but good summer conditions.

However, the variety has been extensively tested also in Oregon and elsewhere in USA.

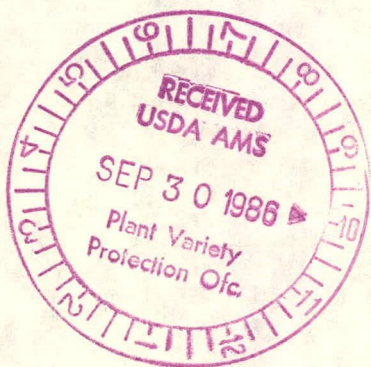




EXHIBIT DVIKING WINTER RAPE (Brassica napus)NOVELTY STATEMENT

Viking is a true double low Winter Rape bred to meet both Canadian and FDA standards for oil and meal quality. This comparing with a wide range of winter varieties classified as single low.

As evidenced by tests carried out in Denmark, Viking is uniform and stable and distinct from varieties currently available on the commercial market.

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EXHIBIT EVIKING (Brassica napus L. ssp. oleifera (Metzg) Sinsk)Basis of applicants ownership

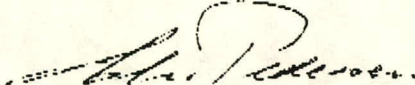
This is to certify that variety of Brassica napus known as Viking is owned by:

L. Dæhnfeldt A/S  
Postbox 185  
DK-5100 Odense C  
Denmark

In the USA the owner is represented by:

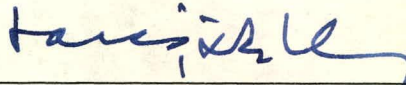
Dæhnfeldt Inc.  
1100 Jackson Street  
Albany  
Oregon 97321  
USA

Signed for and on behalf of Dæhnfeldt A/S

  
Christian Pedersen

10th September 1986

DAEHNFELT, INC.

  
\_\_\_\_\_  
Lars Jaderholm  
President

**L. DÆHNFELDT A/S**  
MARKFRØ  
POSTBOKS 185  
6100 ODENSE C

