



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

W. Brotherton Seed Company, 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 (P.L. 57-1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PEA

'Orcas'

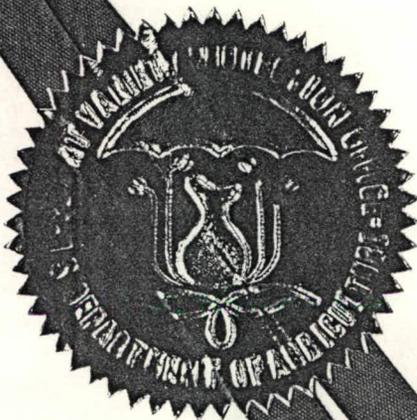
In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 30th day of December in the year of our Lord one thousand nine hundred and eighty-two

Attest:

Kenneth A. Evans
Acting

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

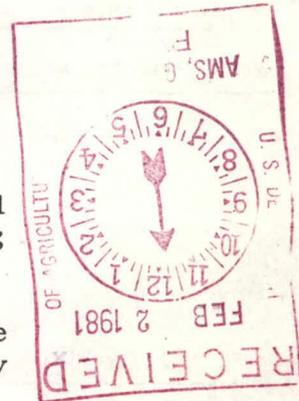


INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, 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.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

- 5 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.
- 13a 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.
- 13b 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.
- 13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 13d 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.
- 14a 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.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

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

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY " ORCAS "		1b. VARIETY NAME " ORCAS "		FOR OFFICIAL USE ONLY	
				PV NUMBER 8100047	
2. KIND NAME Garden Pea		3. GENUS AND SPECIES NAME <u>Pisum sativum</u>		FILING DATE 2/2/81	TIME 12:00 A.M. P.M.
4. FAMILY NAME (BOTANICAL) Leguminosae		5. DATE OF DETERMINATION 1976		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 2/2/81 12/14/82
6. NAME OF APPLICANT(S) W. BROTHERTON SEED CO., INC.		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) P. O. Box 1136 Moses Lake, WA. 98837		8. TELEPHONE AREA CODE AND NUMBER 509/765-1816	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation			10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION WASHINGTON		11. DATE OF INCORPORATION Feb. 1955
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Wilber Brotherton 3rd, Pres. or Harley B. Brotherton, Vice Pres. W. BROTHERTON SEED CO., INC. P. O. Box 1136 Moses Lake, WA. 98837					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- 13B. Exhibit B, Novelty Statement.
- 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- 13D. Exhibit D, Additional Description of the Variety.

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). (If "Yes," answer 14B and 14C below.) YES NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? YES NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? FOUNDATION REGISTERED CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

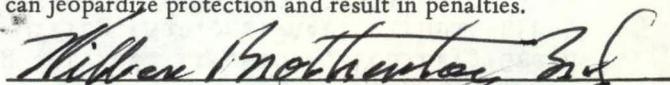
16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? YES NO

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

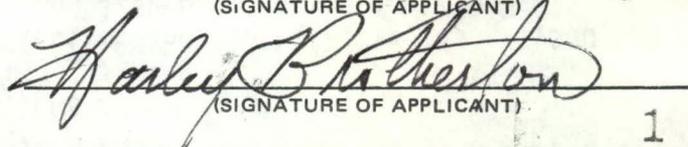
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

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

23, Jan. 1981
(DATE)


(SIGNATURE OF APPLICANT)

23, Jan. 1981
(DATE)


(SIGNATURE OF APPLICANT)

MILLERS FALLS 8100047

EXHIBIT A. ORIGIN & BREEDING HISTORY OF THE VARIETY

1. "Orcas" was obtained as a single plant selection out of the original strain of the variety Puget in Moses Lake, WA. in the summer of 1972. A description of Puget can be seen in the enclosed W. BROTHERTON SEED CO. catalog. After subsequent increasing in the years 1973-1976 enough seed was obtained to allow for commercial testing in 1977 and the following years under the code name of S-13.

2. In the years following 1972, the progenies from this original selection were screened for desirable seed characteristics and vine type. Only those plants with a multipodded habit and determinate vine were saved. Also, final selection was based on those plants that bloomed 1-2 days earlier than Puget, hence the 14th node, and showed promise for an increased yield.

3. "Orcas" has been quite uniform during increase. Variability seemed confined chiefly to a variability in the node on which first flowering appears. The vast majority of the plants bloomed on the 14th node and the few that bloomed later, i.e. 15th and 16th were discarded. Rogueing in this variety for mixtures and off-types, so far has not been necessary.



LEZARASE

WITNESS FACTS

SECTION 1. WITNESS FACTS CONCERNING HISTORY OF THE VARIETY

1. "Protos" was obtained as a single plant selected on one of the original strains of the variety known as "Cotton 100". A description of "Protos" was given in the report of the author, "COTTON 100" series, "WATER-BURST" and other interesting in the same 1973-1974 through used and obtained to allow for commercial testing in 1977 and the following years under the code name of 2-13.

2. In the year following 1978, the progenies from this origin- to selection were established in separate and characterized each and every type. Only those plants with a high yield and moderate vigor were saved. Also, final selection was based on those plants that produced 2-2 days after first flower, hence the late date, and showed promise for an increased yield.

3. "Protos" has been quite uniform during progress. Variability by means confined chiefly to a variability in the color of the first flower appears. The vast majority of the plants produced on the same side and the same that diploid, i.e. 100% and 100% were observed. However, in this variety for mixtures and 100%, so far has not been observed.



COTTON 100

WITNESS FACTS

8100047

EXHIBIT B. NOVELTY STATEMENT

The novelty of the variety "Orcas" is based on the following characteristics:

1. MATURITY: 66-68 days, about 1480 heat units or 2 days earlier than the variety "PUGET"
2. MULTIPODDING HABIT: 2-4 pods per peduncle with 3 pods being the rule under normal conditions.
In the Columbia Basin this growing year (1982) under adverse growing conditions "Orcas" consistently had 3 pods per peduncle whereas "Puget" only had 2.
3. DISEASE SUSCEPTIBILITY: Fusarium oxysporum Races 2, 5, & 6
4. POD WIDTH: "Orcas" is 15mm wide at the sutures whereas "Puget" is 18-20mm wide hence the the smaller sieve size of "Orcas."
5. PEAS PER POD: In the Columbia Basin this year according to the trials of the W. BROTHERTON SEED CO., INC. "Orcas" averaged .52 more peas per pod. This information accounts for a 20.3% increase in yield experienced this year of "Orcas" over "Puget." Consistently better yields were noted this year in Pendleton, OR., Albany, OR. and Bellingham, WA.

Neither the parent or as far as we know, no other variety exhibits all of these characteristics.

'ORCAS' IS MOST SIMILAR TO 'PUGET' (SEE EXHIBITS C & D)
& EXAMINER'S NOTE ON PHONE CALL OF FEB. 25. 1981. rjs

SECRET

EXHIBIT B. NOVELTY STATEMENT

The novelty of the variety "Orca" is based on the following characteristics:

1. MATURITY: 66-68 days, about 1430 heat units or 2 days earlier than the variety "BUCKET"
 2. MUTILATING HABIT: 2-4 pods per peduncle with 3 pods being the rule under normal conditions. In the Columbia Basin this growing year (1982) under adverse growing conditions "Orca" consistently had 3 pods per peduncle whereas "BUCKET" only had 2.
 3. DISEASE SUSCEPTIBILITY: *Aspergillus oxysporum* Races 2, 3, & 6
 4. POD WIDTH: "Orca" is 18mm wide at the sutures whereas "BUCKET" is 18-20mm wide hence the smaller size of "Orca."
 5. PEAS PER POD: In the Columbia Basin this year according to the trials of the W. BROTHERTON SEED CO., INC. "Orca" averaged 22 more peas per pod. This information accounts for a 20% increase in yield experienced this year of "Orca" over "BUCKET". Consistently better yields were noted this year in Pennington, OR, Albany, OR, and Bellingham, WA.
- Neither the parent or as far as we know, no other variety exhibits all of these characteristics.

STATEMENT OF NOVELTY FOR THE VARIETY "ORCA" (P. SATIVUM L.)



EXHIBIT D. ADDITIONAL DESCRIPTION OF THE VARIETY

"Orcas" is a mid-season to late, determinate vined freezing pea, very similar to the variety Puget.

"Orcas" is a medium vine length (68 cm) with relatively short and heavy internodes which is only slightly shorter than Puget. "Orcas" has the multipodded habit of bearing 2 to 4 pods per peduncle. The pods are slightly longer than those of Puget and the green peas at freezing stage are quite indistinguishable from those of Puget.

"Orcas" differs from Puget primarily in that it reaches maturity generally 1 to 2 days earlier. After considerable testing, primarily in England, "Orcas" has consistently outyielded the standard varieties Dark Skin Perfection and Puget. "Orcas" also seems to be slightly smaller in sieve size than Puget at 95-100 tenderometer.

EXHIBIT 1

EXHIBIT 1

EXHIBIT 1

"Orca" is a mid-season to late, determinate vint variety
and very similar to the variety "Papa".
"Orca" is a medium-sized variety (80 cm) with relatively
short and heavy internodes which is only slightly shorter
than "Papa". "Orca" has the well-knotted habit of bearing
1 to 4 pods per peduncle. The pods are slightly longer
than those of "Papa" and the green pods are bearing seeds
are quite indistinguishable from those of "Papa".
"Orca" differs from "Papa" primarily in that it reaches
maturity generally 1 to 2 days earlier. After considera-
ble testing, primarily in England, "Orca" has consistently
in comparison the standard varieties with skin thickness
and pod. "Orca" also seems to be slightly smaller in
size than "Papa" at 92-100 mm diameter.



COLLON COME

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782
OBJECTIVE DESCRIPTION OF VARIETY
PEA (*PISUM SATIVUM*)

NAME OF APPLICANT(S) W. BROTHERTON SEED CO., INC.	VARIETY NAME OR TEMPORARY DESIGNATION Orcas
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) P. O. Box 1136 Moses Lake, WA. 98837	FOR OFFICIAL USE ONLY
	PVPO NUMBER 8100047

Place the appropriate number that describes the varietal character in the boxes below.
Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

1. TYPE:

1 = GARDEN 2 = FIELD 3 = EDIBLE-PODDED

2. MATURITY:

Node number of first bloom: No. of days to processing Heat Units

No. of days Earlier than 1 = ALASKA WR 2 = THOMAS LAXTON WR 3 = LITTLE MARVEL

No. of days Later than 4 = WANDO 5 = ALDERMAN WR 6 = AUSTRIAN WINTER

3. PLANT HEIGHT:

CM. HIGH

Cm. Shorter than 1 = ALASKA WR 2 = THOMAS LAXTON WR 3 = LITTLE MARVEL

Cm. Taller than 4 = WANDO 5 = ALDERMAN WR 6 = AUSTRIAN WINTER

4. VINE:

Habit: 1 = DETERMINATE 2 = INDETERMINATE Stockiness: 1 = SLIM (Alaska) 3 = HEAVY (Alderman)
2 = MEDIUM (Thomas Laxton WR)

Branching: 1 = NONE (Alaska) 2 = 1-2 BRANCHES (Little Marvel) 3 = MORE THAN 2 BRANCHES (Dwarf Gray Sugar)

Internodes: 1 = STRAIGHT 2 = ZIG ZAG NUMBER OF NODES

5. LEAFLETS:

Color: 1 = LIGHT GREEN (Alaska WR) 2 = MED. GREEN (Thomas Laxton WR) 3 = DARK GREEN (Alderman)
4 = OTHER (Specify)

Wax: 1 = NONE 2 = LIGHT 3 = MEDIUM 4 = HEAVY 1 = NOT MARBLED 2 = MARBLED (Alaska)

Number of leaflet pairs: 1 = NOT PAIRED 2 = ONE 3 = TWO 4 = THREE OR MORE

6. STIPULES:

1 = LACKING 2 = PRESENT 1 = NOT CLASPING 2 = CLASPING

1 = NOT MARBLED 2 = MARBLED Size (Compared with leaflets): 1 = SMALLER 2 = SAME
3 = LARGER

Color (Compared with leaflets): 1 = LIGHTER 2 = SAME 3 = DARKER

7. FLOWER COLOR:

VENATION STANDARD WING KEEL } 1 = WHITE 2 = GREENISH 3 = LAVENDER
4 = PURPLE 5 = RED
6 = OTHER (Specify)