No. 7300069

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Asgrow Seed Company

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 (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

LETTUCE

'Tempe'

*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* 20th *day of* December *in the year of our Lord one thousand nine hundred and* seventy-three

*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<br>Tempe | 2. KIND NAME<br>Lettuce | FOR OFFICIAL USE ONLY<br>PVPO NUMBER 73069 |
| 3. GENUS AND SPECIES NAME<br>Lactuca sativa | 4. FAMILY NAME *(Botanical)*<br>Compositae | FILING DATE 3-9-73 / TIME 3:30 A.M. |
| | 5. DATE OF DETERMINATION<br>1968 | FEE RECEIVED $ 250 / CHARGES |
| 6. NAME OF APPLICANT(S)<br>Asgrow Seed Company | 7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*<br>Kalamazoo, Michigan 49001 | 8. TELEPHONE AREA CODE AND NUMBER<br>(616) 382-4000 |

| | | |
|---|---|---|
| 9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*<br>Corporation | 10. STATE OF INCORPORATION<br>Delaware | 11. DATE OF INCORPORATION<br>March 22, 1968 |

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

~~Mr. John A. Batcha~~ Mr. Allen R. Trotter
Asgrow Seed Company 9625-190-1
9620-190-1
Kalamazoo, Michigan 49001

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.)* [ ] YES [X] NO

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

14C. If "Yes," to 14B, how many generations of production beyond breeder seed?

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).*

Feb 28, 1973
(DATE)

John A. Batcha
(SIGNATURE OF APPLICANT)
John A. Batcha
Assistant to the President

(DATE)

(SIGNATURE OF APPLICANT)

# CRISPHEAD LETTUCE

## 'Tempe'

13A. Exhibit A:

A cross between 'Great Lakes 659' X 'Golden State D' in 1961. Fifteen plants selected and bulked in $F_1$. Single plant selections of intermediate type made in $F_2$. Selections in subsequent generations made toward 'Golden State D' for good size, earliness, lack of tipburn and rib blight. Cover, frame size and firmness were added as desirable characteristics in later selections. Similar sister lines were selected and bulked in $F_7$ in 1968. Greenhouse mosaic basic stock was grown from mosaic indexed seed, evaluated and increased in 1969-70.

Approximately 1 percent large, non- or poor heading types occurring during seed multiplication. Stability is indicated by no change in 3 separate growings.

13B. Exhibit B:

Heading Great Lakes type closely resembling 'Golden State D'. 'Tempe' is distinguished from others of this group by deeply cut frill as the leaf blade narrows to the midrib in the seedling stage. Flowering and fruiting characteristics are closely similar to other crisphead varieties. The seed stalk is taller but less full than 'Vanguard'. Frame leaves often larger, head cover or leaf protection greater with less head sunburn and core size often larger than 'Golden State D'. Maturity 3-6 days earlier than 'Golden State D' and cut out is usually greater.

Seeds white.

13C. Exhibit C:

| | | |
|---|---|---|
| Plant type | : | Crisphead (Great Lakes group) |
| Seed color | : | White |
| Anthocyanin | : | Absent |
| Leaf surface | : | Blistered, glossy |
| Leaf margin | : | Wavy, dentate |
| Leaf shape | : | Rounded, broader than long |
| Leaf color | : | Dark green |
| Head | : | Spherical |
| Plant size | : | Large |
| Culture | : | Spring |
| Seedling length | : | 57 mm. |

13C. Exhibit C (continued):

| | | |
|---|---|---|
| Cotyledon length | : | 04 mm. wide, 12 mm. long |
| Disease reaction | : | Not tested |

'Tempe' resembles 'Calmar' in leaf color and pigmentation; 'Golden State D' in leaf shape and head size; 'Forty Niner' in plant size. Head maturity in Imperial Valley is 125 days in winter for 'Tempe' and 132 days for 'Golden State D'; in Salinas Valley in summer it is 66 days for 'Tempe' and 68 days for 'Calmar'. Seed stalk emergence in summer in Stratford is 67 days for 'Tempe' and 68 days for 'Calmar'.

13D. Exhibit D:

'Tempe' most closely resembles 'Golden State D'. It differs in the following characteristics:

a) darker green
b) more resistant to spiraling
c) better leaf protection of the head
d) 3-6 days earlier
e) more deeply incised leaf margin in the seedling stage.

13E. Exhibit E:

Developed by Asgrow Seed Company utilizing material and facilities owned or controlled by the company.

Plant Variety Protection Application
Asgrow Seed Company
Lettuce - Tempe
February 28, 1973

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF THE VARIETY

| Year | |
|---|---|
| 1961 | Cross between Great Lakes 659 and Golden State D. |
| 1962 | 15 plants selected as being $F_1$ were bulked. |
| 1963 | F2 grown as stake 2053. Eleven single plant selections toward an intermediate type were selected. |
| 1964 | F3 grown. Selections were made under stake 1276. This line produced good size with type more toward Golden State D than Great Lakes 659. |
| 1965 | F4 grown. Selections were made under stake 1730 for size, earliness, lack of tipburn and rib blight. |
| 1966 | F5 grown. Type toward Golden State D with good cover. Selections were made under stake 2755 for firmness and earliness and lack of tipburn and rib blight. |
| 1967 | F6 grown. Selections were made under stake 3206 for frame size, cover, earliness, tipburn and rib blight. |
| 1968 | F7 grown. Sister lines appeared quite similar. Stake 3177 was selected and bulked. |
| 1969 | Grown in greenhouse for mosaic free seed for trial evaluation under stake 21. |
| 1970 | Basic seed stock grown in greenhouse under stake 40. |

History: PC61352 X PC61355
PC621357
PC632053-3
PC641276-1
PC651730-1
PC662755-1
PC673206-5
PC683177
PC6921
PC7040

Off types showing during multiplication of seed where large, non- or poor heading types at a rate of approximately 1%. Future stock seed improvement should lower this rate considerably.

Stability of the variety is evidenced by the fact that three separate growings of this variety (PC683177, PC6921 and PC7040) have shown no change.

EXHIBIT B

BOTANICAL DESCRIPTION OF THE VARIETY.

Seed White seed can not be distinguished from most other white seeded varieties.

Seedling Stage The leaf base of Tempe is characterized by a deeply cut frill as the leaf blade narrows down to the mid rib. This is not characteristic of Vanguard, Golden State D or Forty Niner with which this variety is to be compared.

Flowering and Fruiting State There has been little noticeable difference between Tempe and most other crisphead varieties. Compared to Vanguard it has a taller but less full seed stalk.

Mature Plant Description The variety Tempe was developed for the area and seasons in which the varieties Golden State D and Vanguard which is quite dissimilar to any other variety. Frame leaves will often be larger, head cover or leaf protection is greater with less head sunburn and core size is often larger than Golden State D. Butt color is darker green than Golden State D. Maturity is three to six days earlier than D and cut out is usually greater.

Plant Variety Protection Application
Asgrow Seed Company
Lettuce - Tempe

February 28, 1973

EXHIBIT C
(Lettuce)

FORM GR-470-1
(4-3-72)

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

# OBJECTIVE DESCRIPTION OF VARIETY
## (LETTUCE)

INSTRUCTIONS: See reverse.

NAME OF APPLICANT(S)
Asgrow Seed Company

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)
Kalamazoo, Michigan 49001

FOR OFFICIAL USE ONLY
PVPO NUMBER
297 - 1 - 7300069

VARIETY NAME OR TEMPORARY DESIGNATION
TEMPE

Place the appropriate number that describes the varietal character of this variety in the boxes below.

**1. PLANT TYPE:** [4][2]
10 = CUTTING (Leaf) 20 = STALK
50 = BUTTERHEAD 60 = LATIN
70 = OTHER (Specify) _____

30 = COS
31 = SELF-CLOSING GROUP
32 = LOOSE-CLOSING GROUP

40 = CRISPHEAD
41 = IMPERIAL GROUP
42 = GREAT LAKES GROUP
43 = VANGUARD
44 = NEW YORK GROUP

**2. SEED COLOR:** [1] 1 = WHITE 2 = BLACK 3 = YELLOW

**3. ANTHOCYANIN:** [1] 1 = ABSENT 2 = PRESENT

**4. LEAF CONTAINING ANTHOCYANIN:** [4] 1 = COVERED 2 = SPOTTED 3 = ALONG MARGIN 4 = ABSENT 5 = OTHER (Specify) _____

**5. LEAF SURFACE TEXTURE:** [2] 1 = SMOOTH 2 = BLISTERED

**6. LEAF SURFACE REFLECTANCE:** [2] 1 = DULL 2 = GLOSSY 3 = OTHER (Specify) _____

**7. LEAF MARGIN:** [2] 1 = STRAIGHT 2 = WAVY 3 = CURLED
[2] 1 = ENTIRE 2 = DENTATE 3 = INCISED 4 = DEEPLY INCISED 5 = OTHER (Specify) _____

**8. LEAF SHAPE:** [1] 1 = ROUNDED 2 = POINTED
[1] 1 = BROADER THAN LONG 2 = LONGER THAN BROAD 3 = OTHER (Specify) _____

**9. LEAF COLOR:** (See reverse.) [7] 1 = RED 2 = REDDISH-BROWN 3 = YELLOW 4 = YELLOWISH-GREEN 5 = GREYISH-GREEN 6 = BLUE-GREEN 7 = DARK-GREEN 8 = VERY DARK GREEN

**10. HEADS:** [1] 1 = SPHERICAL 2 = FLATTENED 3 = ELONGATE 4 = POINTED 5 = NON-HEADING

**11. PLANT SIZE:** (See reverse.) [3] 1 = SMALL 2 = MEDIUM 3 = LARGE

**12. CULTURE:** [5] 1 = SUMMER CROP 2 = WINTER CROP 3 = NOT SPECIFIC 4 = UNDER GLASS 5 = OTHER (Specify) Spring

**13. SIZE OF 10-DAY OLD SEEDLING GROWN UNDER CONSTANT LIGHT** (Growth Chamber) **AT 25° C.:** (Place a zero in first box (i.e. [0][2]) when size is 9 mm. or less.)
[5][7] mm. LENGTH OF SEEDLING [1][2] mm. LENGTH OF COTYLEDON [0][4] mm. WIDTH OF COTYLEDON

**14. DISEASE RESISTANCE TO:** (~~Enter zeroes in box(es) where there is no special disease resistance.~~) *
[0] 1 = TIPBURN [0] 2 = MOSAIC [0] 3 = DAMPING OFF [0] 4 = DOWNY MILDEW
[0] 5 = SCLEROTINIA ROT [0] 6 = BROWN BLIGHT [0] 7 = BIG VEIN [0] 8 = OTHER (Specify) _____

**15. OUTLINE THE FOURTH LEAF:** (For standardization purposes, the fourth leaf should be taken from a 20-day old plant grown under constant light.)

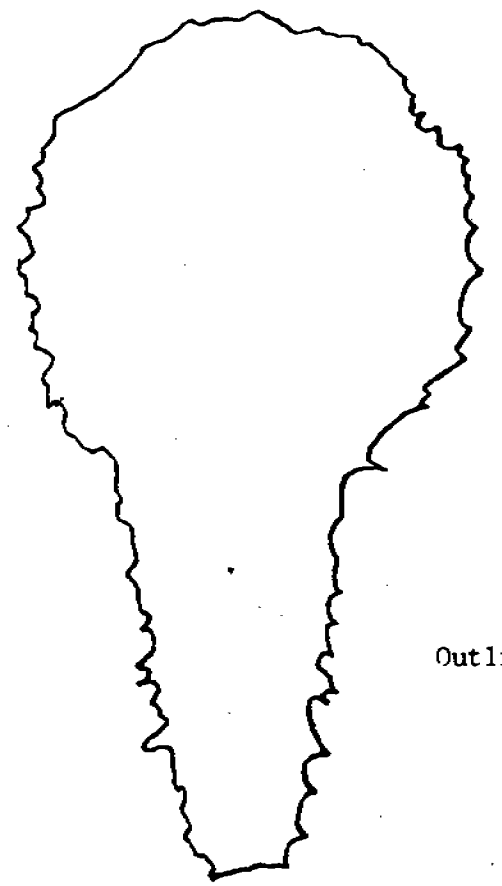
(See attached sheet)



* (Enter 0 - Not Tested; 1 - Susceptible; 2 - Resistant)

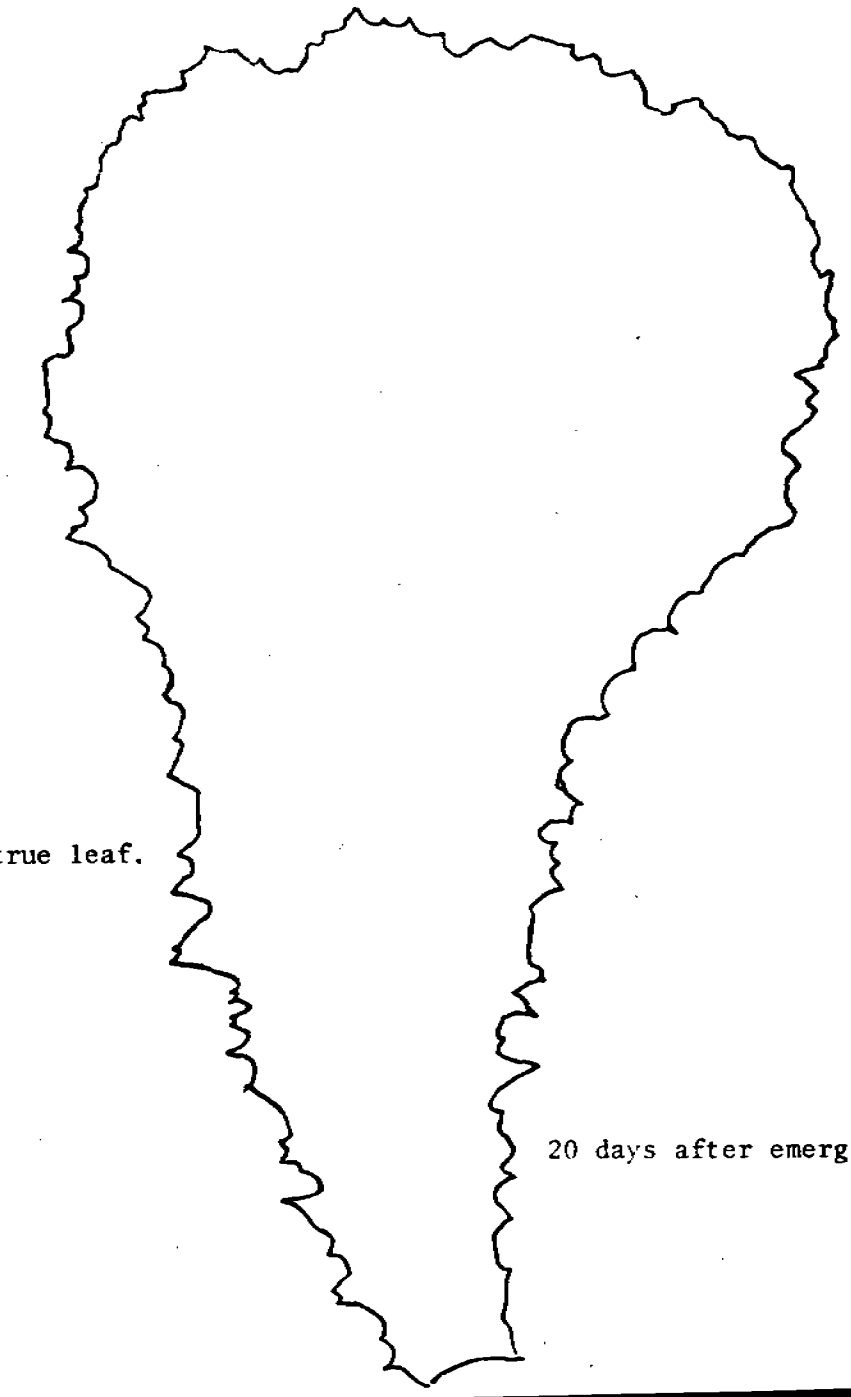
Plant Variety Protection Application
Asgrow Seed Company
Lettuce - Tempe
February 28, 1973

TEMPE



20 days after seeding

Outline of fourth true leaf.



20 days after emergence

73069

Plant Variety Protection Application
Asgrow Seed Company
Lettuce - Tempe
Revised June 14, 1973

EXHIBIT D

DATA INDICATIVE OF NOVELTY

The variety Tempe most closely resembles the variety Golden State D. Color of Tempe is slightly darker green than Golden State D, it is more resistant to spiraling and has better leaf protection of the head than the latter variety. Maturity is 3-6 days earlier than Golden State D.

Seedling measurements were as follows:

| | Tempe | Golden State D |
|---|---|---|
| Seedling length | 57. | 69. |
| Hypocotyl length | 9.0 | 8.5 |
| Cotyledon length | 12.4 | 12.8 |
| Cotyledon width | 3.8 | 4.1 |

These show Tempe as having a significantly shorter seedling length and narrower cotyledon than Golden State D.

Seedling observations show Tempe having a much more incised leaf margin than Golden State D, especially toward the leaf bases, as shown on the accompanying photographs.

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANTS OWNERSHIP.

The new plant variety, Tempe, was developed under the investigation, support, and corporate objectives of Asgrow Seed Company (a subsidiary of The Upjohn Company) utilizing contributive parent stocks and facilities owned or controlled by the company.

FORM GR-470-1 (REVERSE)

**16. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:**

| CHARACTER | NAME OF VARIETY |
|---|---|
| Leaf color | Calmar |
| Leaf pigmentation | Calmar |
| Leaf shape | Golden State D |
| Plant size | Forty Niner |
| Head size | Golden State D |

| VARIETY | NO. OF DAYS TO HEAD MATURITY UNDER WINTER CROPPING | LOCATION | NO. OF DAYS TO HEAD MATURITY UNDER SUMMER CROPPING | LOCATION | NO. OF DAYS TO SEED STALK EMERGENCE UNDER SUMMER CROPPING | LOCATION |
|---|---|---|---|---|---|---|
| Submitted | 125 | Imperial Valley | 66 | Salinas Valley | 67 | Stratford, Cal. |
| Similar | 132 | Imperial Valley | 68 | Salinas Valley | 68 | Stratford, Cal. |
| Name of similar variety → | Golden State D | | Calmar | | Calmar | |

## INSTRUCTIONS

**GENERAL:** The following publications may be used as a reference aid for completing this form:

1. C. M. Rodenburg, 1960, Varieties of Lettuce, An International Monograph, Institunt Voor de Veredeling van Tuinbouwgewassen, Wageningen, Holland.

2. L. L. Morse, 1930, Field Notes on Lettuce, published by Ferry-Morse Seed Co.

**LEAF COLOR:** Nickerson's or any recognized color fan may be used to determine the leaf color of the described variety. The following lettuce varieties may be used as a guide to identify the eight colors listed on the form.

| Color | Variety |
|---|---|
| Red | "Salad Trim" |
| Reddish-brown | "Ruby" |
| Yellow | "Salad Bowl" |
| Yellowish-green | "Oakleaf" |
| Greyish-green | "White Boston" |
| Bluish-green | "Bibb" |
| Dark-green | "Imperial" group |
| Very dark green | "Deer Tongue" |

**PLANT SIZE:** The following varieties may be used as a guide to identify the plant type size:

| TYPE | COMPARABLE VARIETIES | | |
|---|---|---|---|
| | SMALL | MEDIUM | LARGE |
| Cutting (leaf) | Boston-Curled | Prize Head | Grand Rapids |
| Stalk (stem) | Celtuce | -- | -- |
| Cos | Express | Parris Island | Giant White |
| Crisphead | Mignonette | Hanson (Merit) | Climax |
| Butterhead | Tom Thumb | Big Boston | Mammoth Butter |
| Latin | Sucrine | Creole | Deer Tongue |