No. 8200014

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Leslie L. Dean

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, [illegible]MPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT [illegible]TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. [illegible] UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS [illegible] OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS [illegible]Y THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN

'Fiesta Pinto'

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* 24th *day of* March *in the year of our Lord one thousand nine hundred and* eighty-three.

John R Block

*Secretary of Agriculture*

*Attest:*

Kenneth A. Eva

*Acting Commissioner*
*Plant Variety Protection Office*
*Grain Division*
*Agricultural Marketing Service*

# INSTRUCTIONS

8200014

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.

SEP 15 1981

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.

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

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

**INSTRUCTIONS:** *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

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

| | | |
|---|---|---|
| 1a. TEMPORARY DESIGNATION OF VARIETY: Pinto ISB 4-111 | 1b. VARIETY NAME: FIESTA PINTO | FOR OFFICIAL USE ONLY — PV NUMBER: 8200014 |
| 2. KIND NAME: Common Bean (dry-edible) | 3. GENUS AND SPECIES NAME: Phaseolus vulgaris L. | FILING DATE: 10/30/81 — TIME: 12:30 A.M. (P.M.) |
| 4. FAMILY NAME (BOTANICAL): Leguminosae | 5. DATE OF DETERMINATION: November 1978 (9/10/81) | FEE RECEIVED: $ 500.00 — DATE: 10/30/81; $ 250.00 — 2/16/83 |
| 6. NAME OF APPLICANT(S): Leslie L. Dean | 7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*: P. O. Box 1072, Twin Falls, Idaho 83301 | 8. TELEPHONE AREA CODE AND NUMBER: (208) 734-5221 |
| 9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* None | 10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION: None | 11. DATE OF INCORPORATION: None |

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

Leslie L. Dean, P. O. Box 1072, Twin Falls, Idaho 83301

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 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.)* [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? [X] FOUNDATION [ ] REGISTERED [X] CERTIFIED

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

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] 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? [X] 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.

9/10/81 (DATE) — Leslie L. Dean (SIGNATURE OF APPLICANT)

(DATE) — (SIGNATURE OF APPLICANT)



FORM GR-470 (1-78)

13A. Exhibit A. Origin and Breeding History of the Cultivar Fiesta Pinto

'Fiesta' PINTO' RJS 12/15/82 is an early maturing dry-edible bean (Phaseolus vulgaris L.) of the pinto class.

'Fiesta' PINTO' was selected from among the progeny of a cross between Pinto UI-111 and an $F_1$ plant derived from a cross of Pinto UI-111 with a great northern cultivar. Following $BC_1$ the pureline breeding system was followed through the $S_5$ generation after which the breeding line was produced in bulk ($S_6$ and subsequent generations) since no further segregation could be detected.

Selection for the desired pinto seed color and type, as well as for plant structure, yield, and maturity was practiced in the $S_2$ through the $S_5$ generations. It was determined that continued selection was ineffective because selections from the $S_4$ generation were stable and uniform within individual lines. Nonetheless, single plant selections taken from the $S_5$ were chosen for further increase and continued evaluation in replicated trials. From among these individual breeding lines, 'Fiesta' PINTO' was chosen for detailed replicated comparison with standard pinto-type cultivars and other pinto breeding lines derived from different crosses and/or breeding techniques.

In addition to the general objective of producing an early upright plant bearing typical pinto-shaped and -colored seed, there was the specific objective of introducing recessive resistance gene(s) to the NY-15 strain (NL-2 strain of Drijfout, 1978) of Bean Common Mosaic Virus into a vine pinto similar to Pinto UI-111. Virus-strain-resistant lines were identified by inoculation of the $S_3$ through $S_5$ generations by the leaf-abrasion crude-plant extract method. Subinoculations to known NY-15 strain susceptible cultivars were made to verify absence of systemic infection; i.e., resistance.

'Fiesta' PINTO' has appeared stable and uniform throughout the increase and trial generations. Variant types have not been observed.

13B. Exhibit B. Novelty Statement

'Fiesta Pinto' most nearly resembles Pinto UI-111.

'Fiesta PINTO' is resistant to the NY-15 (NL-2) strain of Bean Common Mosaic Virus. Pinto UI-111 is susceptible to the NY-15 (NL-2) strain of Bean Common Mosaic Virus.

'Fiesta PINTO' matures dry seed 3 to 4 days earlier in South-Central Idaho than does Pinto UI-111; i.e., 1477 $GDD_{50}$ vs 1533 $GDD_{50}$ respectively during 1979.

'Fiesta PINTO' seed is wider (8.70 mm vs 8.45 mm), thicker (5.26 mm vs 5.09 mm), and longer (12.99 mm vs 12.49 mm) than seed of Pinto UI-111.

'Fiesta PINTO' seed weighs 46.17 gm/100 vs. 39.92 gm/100 for Pinto UI-111.

13D. Exhibit D. Additional Description of Fiesta Pinto

'Fiesta' PINTO' RJS 12/15/82 quite closely resembles both Pinto UI-111 and Pinto UI-114 in certain characteristics but is distinctly different from either.

During 1979 at Twin Falls, Idaho, 'Fiesta' PINTO' reached 50% bloom in 42.5 days (677 $GDD_{50}$) vs 45.5 days (734 $GDD_{50}$) for Pinto UI-111 and 46.5 days (753 $GDD_{50}$) for Pinto UI-114. The same relationship carried through for seed maturity. 'Fiesta' PINTO' matured in 88.3 days (1477 $GDD_{50}$), Pinto UI-111 in 91.7 days (1533 $GDD_{50}$), and Pinto UI-114 in 94.7 days (1582 $GDD_{50}$).

'Fiesta', PINTO' Pinto UI-111, and Pinto UI-114 are each indeterminate in plant habit. Fiesta height, as measured by length of the runner plus the main bush of the plant, is intermediate (110 cm) between Pinto UI-111 (98 cm) and Pinto UI-114 (113 cm). However, the height of the plant growth, as measured from the soil surface to the upper level of the leaf canopy at full pod set, indicates that the main axis or central stem of 'Fiesta' PINTO' (35 cm) is more stiffly erect than Pinto UI-111 (32 cm) or Pinto UI-114 (34 cm). Substantially fewer 'Fiesta' PINTO' pods, therefore, are in contact with the soil surface, resulting in fewer discolored seed from 'Fiesta' PINTO' than Pinto UI-111. Leaf density by number and size, although not directly measured, appears very similar for 'Fiesta' PINTO' and Pinto UI-111, both cultivars having less foliage density than Pinto UI-114.

'Fiesta', PINTO' Pinto UI-111, and Pinto UI-114 in general are little different in leaf size, color, or shape. Pinto UI-114 has somewhat larger leaves and a greater number of leaves than either 'Fiesta' PINTO' or Pinto UI-111, but these differences are not adequate to distinguish one cultivar from the other.

Likewise pod size, shape, and coloration are very similar for 'Fiesta', PINTO' Pinto UI-111, and Pinto UI-114 and are not distinguishable. All three cultivars develop conspicuous anthocyanin splashing on the pods. Although 'Fiesta' PINTO' blossoms are essentially white, becoming cream with age, the veins at the base of the standard are very faintly pink. Leaf petioles and the base of the main stem may exhibit very faint anthocyanin development also.

Testa color of 'Fiesta' PINTO' seed approximates Orange-White 159C splashed with Greyed-Orange 165A of the Royal Horticultural Society Colour Chart. Neither of these colors is an exact match, but more satisfactory matches cannot be identified. The narrow hilar ring may be as dark (prominent) as Orange-Yellow 23B or as light (faint) as Orange-Yellow 22B on the Royal Horticultural Society Colour Chart.

13D. Exhibit D (Cont.)

Seed of 'Fiesta' Pinto (46.2 gm/100) is larger than seed of Pinto UI-111 (39.9 gm/100) or of Pinto UI-114 (40.6 gm/100). 'Fiesta' Pinto seed is proportionally similar in shape, however, to both Pinto UI-111 and Pinto UI-114 although 'Fiesta' Pinto is longer, wider, and thicker than either. The seed width/thickness ratio of 1.65 for 'Fiesta' Pinto, 1.66 for Pinto UI-111, and 1.63 for Pinto UI-114 and the length/width ratio of 1.49, 1.49, and 1.53 respectively indicate similarity of seed proportions. In the pinto tradition, all three varieties being compared have one round end and one truncate end.

'Fiesta' Pinto, Pinto UI-111, and Pinto UI-114 are resistant to the type (NL-1) strain of Bean Common Mosaic Virus and to the Curly Top Virus. 'Fiesta' Pinto is resistant to the 1A or NY-15 (NL-2) strain of Bean Common Mosaic Virus; Pinto UI-111 is susceptible; and Pinto UI-114 is tolerant.

'Fiesta' Pinto (as ISB 4-111) was entered in the Cooperative Dry Bean Nursery (M. J. LeBaron, Coordinator, University of Idaho Research and Extension Center, Kimberly, Idaho 83341) for 1980, and overall yield averages among pinto bean cultivars were not significantly different at the 5% level. Yield of 'Fiesta' Pinto in replicated trials at Twin Falls over the past three seasons has not been significantly different from Pinto UI-111 except in those seasons or locations where the NY-15 (NL-2) strain of Bean Common Mosaic Virus became severe, and in those instances Fiesta yielded substantially more than Pinto UI-111.

Sample Numbers (n), Means ($\bar{x}$), and Standard Errors ($s_{\bar{x}}$) for Certain Plant and Pod Characteristics of Two Pinto Breeding Lines in Comparison with Pinto UI-111 and Pinto UI-114 Grown in Six Replications, Twin Falls, Idaho, 1978.

| | | ISB 4-111='Fiesta' PINTO | | | ISB 4-112='Gala' | | | UI-111 | | | UI-114 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | n | $\bar{x}$ | $s_{\bar{x}}$ | n | $\bar{x}$ | $s_{\bar{x}}$ | n | $\bar{x}$ | $s_{\bar{x}}$ | n | $\bar{x}$ | $s_{\bar{x}}$ |
| Plant | | | | | | | | | | | | | |
| Height | (cm) | 12 | 109.8 | 9.83 | 12 | 108.6 | 21.86 | 12 | 98.0 | 24.41 | 12 | 112.8 | 14.05 |
| Canopy | (cm) | 6 | 35.2 | 3.60 | 6 | 31.5 | 1.64 | 6 | 32.0 | 2.41 | 6 | 34.0 | 1.84 |
| Spread | (cm) | 8 | 57.4 | 6.84 | 7 | 55.4 | 6.24 | 7 | 51.6 | 6.92 | 7 | 57.4 | 3.78 |
| Branches | (no.) | 12 | 9.1 | 2.07 | 12 | 10.0 | 1.71 | 12 | 12.6 | 2.81 | 12 | 8.3 | 2.67 |
| Stalk | (mm) | 12 | 7.63 | 1.13 | 12 | 8.13 | .83 | 12 | 8.25 | 1.34 | 12 | 8.0 | .85 |
| Internode | (no.) | 12 | 16.0 | 2.66 | 12 | 15.7 | 2.46 | 12 | 16.7 | 2.10 | 12 | 17.8 | 1.48 |
| 1st Internode | (mm) | 12 | 11.54 | 1.83 | 12 | 9.96 | 1.96 | 12 | 11.63 | 2.96 | 12 | 11.0 | 4.13 |
| Pod | | | | | | | | | | | | | |
| Thickness | (mm) | 12 | 9.45 | 1.05 | 12 | 10.29 | .78 | 12 | 9.25 | .50 | 12 | 8.83 | .49 |
| Width | (mm) | 12 | 15.70 | .78 | 12 | 14.83 | .62 | 12 | 14.71 | .66 | 12 | 14.96 | .50 |
| Length | (cm) | 12 | 13.6 | .77 | 12 | 12.56 | .59 | 12 | 12.98 | .82 | 12 | 13.54 | .84 |
| Spur length | (mm) | 12 | 13.2 | 2.01 | 12 | 10.0 | .74 | 12 | 12.71 | 1.51 | 12 | 12.08 | 2.97 |
| Seed/Pod | (no.) | 12 | 6.5 | .52 | 12 | 6.8 | .62 | 12 | 7.0 | .60 | 12 | 7.0 | .43 |
| Pod/Plant | (no.) | 4 | 36.8 | 19.4 | 4 | 38.8 | 8.7 | 6 | 40.0 | 17.9 | 6 | 36.0 | 11.1 |

Sample Numbers (n), Means ($\bar{x}$), and Standard Errors ($s_{\bar{x}}$) for Seed Size and Shape of Two Pinto Breeding Lines in Comparison with Certain Pinto Bean Cultivars Grown in Six Replications, Twin Falls, Idaho, 1979 and 1980.

| Cultivar | Weight | | | Width* | | | Thickness* | | | Length* | | | Ratio | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | $\bar{x}$ (gm/100) | $s_{\bar{x}}$ | n | $\bar{x}$ (mm) | $s_{\bar{x}}$ | n | $\bar{x}$ (mm) | $s_{\bar{x}}$ | n | $\bar{x}$ (mm) | $s_{\bar{x}}$ | W/T** | L/W*** |
| 1979 | | | | | | | | | | | | | | |
| 'Fiesta' PINTO = ISB 4-111 | 10 | 46.2 | .61 | 10 | 8.70 | .19 | 10 | 5.26 | .13 | 10 | 12.99 | .25 | 1.65 | 1.49 |
| 'Gala' = ISB 4-112 | 10 | 42.7 | .93 | 10 | 8.53 | .23 | 10 | 5.41 | .21 | 10 | 13.09 | .22 | 1.58 | 1.53 |
| UI-111 | 10 | 39.9 | 1.20 | 10 | 8.45 | .13 | 10 | 5.09 | .10 | 10 | 12.49 | .25 | 1.66 | 1.49 |
| UI-114 | 10 | 40.6 | 1.44 | 10 | 8.37 | .11 | 10 | 5.12 | .08 | 10 | 12.77 | .21 | 1.63 | 1.53 |
| Olathe | 10 | 38.7 | .88 | 10 | 7.67 | .16 | 10 | 5.66 | .07 | 10 | 12.48 | .30 | 1.36 | 1.63 |
| 1980 | | | | | | | | | | | | | | |
| 'Fiesta' PINTO = ISB 4-111 | 6 | 40.5 | 3.43 | 10 | 8.91 | .22 | 10 | 5.08 | .31 | 10 | 13.42 | .48 | 1.75 | 1.51 |
| 'Gala' = ISB 4-112 | 6 | 41.3 | 1.99 | 10 | 8.52 | .26 | 10 | 5.68 | .32 | 10 | 13.59 | .31 | 1.50 | 1.60 |
| UI-111 | 6 | 37.6 | 1.49 | 10 | 8.34 | .17 | 10 | 5.27 | .19 | 10 | 12.43 | .14 | 1.58 | 1.49 |
| UI-114 | 6 | 39.8 | 1.13 | 10 | 8.49 | .16 | 10 | 5.14 | .24 | 10 | 13.14 | .44 | 1.65 | 1.55 |
| Olathe | 6 | 34.5 | 2.13 | 10 | 7.76 | .12 | 10 | 5.78 | .22 | 10 | 12.42 | .29 | 1.34 | 1.60 |
| NW-410 | 6 | 35.6 | 1.05 | 10 | 7.98 | .25 | 10 | 5.16 | .19 | 10 | 12.11 | .46 | 1.55 | 1.52 |
| NW-590 | 6 | 35.3 | 1.66 | 10 | 7.78 | .18 | 10 | 5.25 | .31 | 10 | 12.07 | .31 | 1.48 | 1.55 |

*Each sample (n) is the mean ($\bar{x}$) for 10 seed; i.e., 100 seeds were measured in 10 samples of 10 seeds each.

**Width divided by thickness.

***Length divided by width.

MATURITY

Sample Numbers (n), Means ($\bar{x}$), and Standard Errors ($s_{\bar{x}}$) for Certain Measurements of 'Fiesta' Pinto Bean and Some Comparisons with Other Pinto Varieties.

| Cultivar | Sample | 50% Bloom | | | | Sample | Dry Seed (planting to cutting) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Days | | $GDD_{50}$ | | | Days | | $GDD_{50}$ | |
| | n | $\bar{x}$ | $s_{\bar{x}}$ | $\bar{x}$ | $s_{\bar{x}}$ | n | $\bar{x}$ | $s_{\bar{x}}$ | $\bar{x}$ | $s_{\bar{x}}$ |
| 1978 | | | | | | | | | | |
| Fiesta PINTO | | | | | | 6 | 91.5 | 1.22 | 1376 | 6.6 |
| 'Gala'=ISB 4-112 | 1 | 47.0 | | | | 6 | 93.8 | 2.32 | 1394 | 25.9 |
| UI-111 | 1 | 45.0 | | | | 5 | 95.8 | 1.30 | 1415 | 18.9 |
| UI-114 | 1 | 46.0 | | | | 6 | 98.0 | 2.24 | 1449 | 32.0 |
| Ouray | 1 | 47.0 | | | | 6 | 100.0 | 2.05 | 1471 | 27.4 |
| 1979 | | | | | | | | | | |
| Fiesta PINTO | 6 | 42.5 | 1.22 | 677 | 22.9 | 6 | 88.3 | .52 | 1477 | 8.8 |
| 'Gala'=ISB 4-112 | 6 | 43.7 | 1.03 | 699 | 19.3 | 6 | 91.5 | 1.05 | 1531 | 17.1 |
| UI-111 | 6 | 45.5 | 1.22 | 734 | 23.2 | 6 | 91.7 | 2.06 | 1533 | 35.1 |
| UI-114 | 6 | 46.5 | .55 | 753 | 10.6 | 6 | 94.7 | 1.03 | 1582 | 13.4 |
| Olathe | 6 | 46.0 | 1.55 | 744 | 29.6 | 6 | 95.3 | .52 | 1590 | 6.7 |
| 1980* | | | | | | | | | | |
| Fiesta PINTO | 6 | 48.2 | .41 | 786 | 9.4 | 6 | 97.3 | 1.37 | 1532 | 14.4 |
| 'Gala'= ISB 4-112 | 6 | 48.0 | .00 | 782 | 0.0 | 6 | 98.2 | .41 | 1540 | 6.1 |
| UI-111 | 6 | 49.0 | .63 | 805 | 13.5 | 6 | 97.8 | 1.17 | 1537 | 14.0 |
| UI-114 | 6 | 48.8 | .76 | 801 | 16.3 | 6 | 100.0 | 1.10 | 1564 | 12.0 |
| Olathe | 6 | 49.8 | .75 | 822 | 14.8 | 6 | 99.8 | .98 | 1562 | 11.0 |
| NW-410 | 6 | 48.5 | .67 | 794 | 12.6 | 6 | 99.2 | .84 | 1554 | 15.1 |
| NW-590 | 6 | 48.0 | .00 | 782 | 0.0 | 6 | 100.2 | 1.47 | 1565 | 16.6 |

*Dry seed maturity of longer season cultivars was foreshortened by fall frost and "days" to dry seed substantially extended by a season deficient in heat units.

**3. PLANT: (Cont'd)**

[3] Pod position: 1 = low 2 = high 3 = scattered

[5] Bush form (illustrated below):

1 = spherical bush form 2 = stem bush form 3 = wide bush form 4 = high bush form

5 = other (specify) wide bush with moderate runner

**4. LEAVES:**

[2] 1 = smooth 2 = wrinkled

[2] 1 = dull 2 = glossy

[2] Size: 1 = small (Earliwax) 2 = medium 3 = large (Tendercrop)

[2] Color: 1 = light green (as light or lighter than Bountiful) 2 = medium green
3 = dark green (as dark or darker than Bush Blue Lake 290)

**5. FLOWERS:**

[6] Color: 1 = white 2 = cream 3 = pink 4 = lilac 5 = purple 6 = Other (specify) White; very faint lilac veins at base of standard petal.

[4][3] Days to 50% bloom

**6. FRESH PODS: (Edible maturity, average for 20 pods)**

[6] Exterior color: 1 = light green (as light or lighter than Bountiful)
2 = medium green
3 = dark green (as dark or darker than Bush Blue Lake 290)
4 = light yellow (Brittlewax)
5 = golden yellow (Cherokee Wax)
6 = green-red variagated (Horticultural)
7 = other (specify)

% Sieve size distribution at optimum maturity for non-flat pods

**Note:**
1 = 4.76 mm to 5.76 mm
2 = 5.76 mm to 7.34 mm
3 = 7.34 mm to 8.34 mm
4 = 8.34 mm to 9.53 mm
5 = 9.53 mm to 10.72 mm
6 = 10.72 mm or larger

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| | | | | | |

| | | | |
|---|---|---|---|
| 3 sieve | cm length | mm width | mm thickness |
| 4 sieve | cm length | mm width | mm thickness |
| 5 sieve | cm length | mm width | mm thickness |
| 6 sieve | cm length | mm width | mm thickness |

5

FORM APPROVED: OMB NO. 40-R3822

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

**EXHIBIT C**
*(Bean)*

# OBJECTIVE DESCRIPTION OF VARIETY

*BEAN (Phaseolus vulgaris L.)*

NAME OF APPLICANT(S)
Leslie L. Dean

ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
P. O. Box 1072
Twin Falls, Idaho 83301

FOR OFFICIAL USE ONLY
PVPO NUMBER 8200014
VARIETY NAME ~~OR TEMPORARY~~ DESIGNATION
FIESTA PINTO

Place numbers in the boxes (e.g. [0][8][9]) for the characters that best describe this variety. Measured data should be for SPACED PLANTS. Ranges may also be given. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: Royal Horticultural Society Colour Chart. The location of test area is Twin Falls, Idaho. Please answer questions appropriate for your variety if the information is available.

**1. TYPE:**

[1] 1 = Field *(dry-edible)* 2 = Garden

**2. MARKET MATURITY:**

[0][0] Days to edible pods

[0][0] Days to green shells

[0][8][8] Days to dry seeds

[0][0][0][0] Heat units to edible pods

[0][0][0][0] Heat units to green shells

[1][4][7][7] Heat units to dry seeds

[0][3] No. days earlier than ..... [8]

..... Same as .. [0]

[0][0] No. days later than ..... [0]

1 = Tendercrop
3 = Kinghorn Wax
5 = Michelite 62
7 = Bush Blue Lake 290
2 = Kentucky Wonder
4 = White Kidney
6 = Dwarf Horticultural
8 = Other (specify below)
Pinto UI-111

**3. PLANT:**

[2] 1 = Determinate 2 = Indeterminate

[1][1][0] cm height

[0][0] cm shorter than ..... [0]

Same as .. [0]

comparison variety from above

[1][2] cm taller than ..... [8]

[5][7] cm spread

[0][0][9] Number primary branches near base

[0][0] cm narrower than ..... [0]

width same as ... [0]

comparison variety from above

[0][5] cm wider than ..... [8]

[2] Branching habit: 1 = compact 2 = open

[2] Main stalk: 1 = brittle 2 = wirey

[1] 1 = stout 2 = thin

4



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**8. SEED SHAPE AND SIZE: (Cont'd)**

*[0] 1 = truncate ends 2 = rounded ends *[3] 3 = one each (round and truncate)

[4 6] gm/100 seed

[0 0] gm/100 seed lighter than . . . . . [0]

gm/100 seed same as . . . . [0] comparison variety from page one

[0 6] gm/100 seed heavier than . . . . . [8]

**9. ANTHOCYANIN: (1 = absent 2 = present)**

[2] Flowers [2] Stems [2] Pods [2] Seeds [1] Leaves

**10. DISEASE RESISTANCE (0 = not tested 1 = susceptible 2 = resistant):**

[0] Anthracnose (specify race below) _____

[0] Rust (specify race below) _____

[0] Powdery mildew

[1] Fusarium root rot

[0] Pythium root rot

[0] Rhizoctonia root rot

[0] Pythium wilt

[0] Angular leaf spot

[0] Bacterial wilt

[0] Halo blight (specify race below) _____

[0] Fuscous blight

[0] Red node virus

[2] Pod mottle virus

[2] Bean common mosaic virus (specify strain below) Type and NY-15 (others not tested)

[2] Mosaic mottle

[2] Black root

[0] Bean yellow mosaic virus

[2] Curly top

[ ] Other (specify below) _____

**11. INSECT RESISTANCE: (0 = not tested 1 = susceptible 2 = resistant)**

[0] Aphids

[0] Leaf hopper

[0] Lygus

[0] Pod borer

[0] Root knot nematode

[0] Seed corn maggot

[0] Thrips

[0] Weavils

[ ] Other (specify below) _____

**12. PHYSIOLOGICAL RESISTANCE: (0 = not tested 1 = susceptible 2 = resistant)**

[0] Heat [0] Cold [0] Drought [0] Air pollution

**13. COMMENTS:**

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**6. FRESH PODS: (Cont'd)**

[1] Cross section pod shape: 1 = flat 2 = oval 3 = round 4 = heart

[2] Creaseback: 1 = present 2 = absent

[2] Pubescence: 1 = none 2 = sparse 3 = considerable

[2] Spur: 1 = straight 2 = slightly curved 3 = curved

[3] Constrictions: 1 = none 2 = slight 3 = deep

[0] Pod flesh: 1 = light 2 = medium 3 = dark

[1 3] mm spur length

[3] Fiber: 1 = none 2 = sparse 3 = considerable

[6] Number of seeds per pod

[1] Surface: 1 = smooth 2 = rough

[1] Suture string: 1 = present 2 = absent

[0] Seed development (Snap Bean): 1 = slow 2 = medium 3 = fast

[1] Machine harvest: 1 = adapted 2 = not adapted

[0] Pod flavor:
(1) Standard (Tendercrop)
(2) Mild Blue Lake (BBL 274)
(3) Strong Blue Lake (Pole FM1)
(4) Mild Romano (Roma)
(5) Strong Romano (Pole Romano)
(6) Other (specify) _____

**7. SEED COAT COLOR:**

[2] 1 = Monochrome 2 = Polychrome

[2] 1 = shiny 2 - dull

[3] Primary color:

[5] Secondary color:

1 = white 2 = yellow 3 = buff 4 = tan
5 = brown 6 = pink 7 = red 8 = purple
9 = blue 10 = black 11 = other (specify) _____

[3] Color Pattern: 1 = none 2 = splashed 3 = mottled 4 = striped 5 = flecked 6 = dotted

[5] Secondary color location: 1 = hilar ring 2 = ventral surface 3 = sides 4 = dorsal surface 5 = not restricted to any area 6 = combination of location (specify below) _____

[2] Hilar ring on colored seeds: 1 = absent 2 = narrow 3 = butterfly shaped

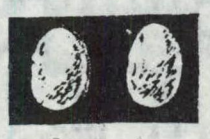
**8. SEED SHAPE AND SIZE:**

[1] Hilum view: 1 = elliptical 2 = oval 3 = round

[1] Cross section: 1 = elliptical 2 = oval 3 = cordate 4 = round

[1] Side view:


1 = oval to oblong


2 = round


3 = reniform

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