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Inventor(s)	Vanoli; Mike et al.

Lettuce variety ‘PS 1525’

Abstract

New lettuce variety designated ‘PS 1525’ is described. ‘PS 1525’ exhibits stability and uniformity.

Inventors: **Vanoli; Mike (Carmel, CA), Koda; Michael (Yuma, AZ)**

Applicant: **Pinnacle Seed, Inc.** (Carmel, CA)

Family ID: **1000008767867**

Assignee: **PINNACLE SEED, INC. (Carmel, CA)**

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Primary Examiner: Zhou; Shubo

Assistant Examiner: Byrnes; David R

Attorney, Agent or Firm: Morrison & Foerster LLP

Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION (1) This application claims the benefit of U.S. Provisional Application No. 63/178,895, filed Apr. 23, 2021, which is hereby incorporated by reference in its entirety.

FIELD
(1) This invention relates to the field of plant breeding. In particular, this invention relates to new lettuce, *Lactuca sativa*, varieties 'Latitude', 'Pacific Heart', and 'PS 1525'.
BACKGROUND
(2) Lettuce is an increasingly popular crop. Worldwide lettuce consumption continues to increase. As a result of this demand, there is a continued need for new lettuce varieties. In particular, there is a need for improved lettuce varieties that are stable, high yielding, and agronomically sound.
SUMMARY
(3) In order to meet these needs, the present invention is directed to improved lettuce varieties.
(4) In one embodiment, the present invention is directed to lettuce, *Lactuca sativa*, seed designated as 'Latitude'. In one embodiment, the present invention is directed to a *Lactuca sativa* lettuce plant and parts isolated therefrom produced by growing 'Latitude' lettuce seed. In another embodiment, the present invention is directed to a *Lactuca sativa* plant and parts isolated therefrom having all the physiological and morphological characteristics of a *Lactuca sativa* plant produced by growing 'Latitude' lettuce seed. In still another embodiment, the present invention is directed to an F.sub.1 hybrid *Lactuca sativa* lettuce seed, plants grown from the seed, and a head isolated therefrom having 'Latitude' as a parent, where 'Latitude' is grown from 'Latitude' lettuce seed.
(5) Lettuce plant parts include lettuce heads, lettuce leaves, parts of lettuce leaves, pollen, ovules, flowers, and the like. In another embodiment, the present invention is further directed to lettuce heads, lettuce leaves, parts of lettuce leaves, flowers, pollen, and ovules isolated from 'Latitude' lettuce plants. In another embodiment, the present invention is further directed to tissue culture of 'Latitude' lettuce plants, and to lettuce plants regenerated from the tissue culture, where the plant has all of the morphological and physiological characteristics of 'Latitude' lettuce plants.
(6) The present invention is further directed to a method of selecting lettuce plants by: a) growing more than one 'Latitude' lettuce plant, where the plants are grown from lettuce seed; and b) selecting a plant from step a). The present invention is further directed to lettuce plants and seeds produced therefrom, where the lettuce plants and seeds are isolated by the selection method of the invention.
(7) In another embodiment, the present invention is further directed to a method of breeding lettuce plants by crossing a lettuce plant with a plant grown from 'Latitude' lettuce seed. In still another embodiment, the present invention is further directed to lettuce plants, lettuce parts from the lettuce plants (e.g., lettuce heads), and seeds produced therefrom where the lettuce plant is isolated by the breeding method of the invention.
(8) In one embodiment, the present invention is directed to lettuce, *Lactuca sativa*, seed designated as 'Pacific Heart'. In one embodiment, the present invention is directed to a *Lactuca sativa* lettuce plant and parts isolated therefrom produced by growing 'Pacific Heart' lettuce seed. In another embodiment, the present invention is directed to a *Lactuca sativa* plant and parts isolated therefrom having all the physiological and morphological characteristics of a *Lactuca sativa* plant produced by growing 'Pacific Heart' lettuce seed. In still another embodiment, the present invention is directed to an F.sub.1 hybrid *Lactuca sativa* lettuce seed, plants grown from the seed, and a heart isolated therefrom having 'Pacific Heart' as a parent, where 'Pacific Heart' is grown from 'Pacific Heart' lettuce seed.
(9) Lettuce plant parts include lettuce hearts, lettuce leaves, parts of lettuce leaves, pollen, ovules,

flowers, and the like. In another embodiment, the present invention is further directed to lettuce hearts, lettuce leaves, parts of lettuce leaves, flowers, pollen, and ovules isolated from ‘Pacific Heart’ lettuce plants. In another embodiment, the present invention is further directed to tissue culture of ‘Pacific Heart’ lettuce plants, and to lettuce plants regenerated from the tissue culture, where the plant has all of the morphological and physiological characteristics of ‘Pacific Heart’ lettuce plants.

(10) The present invention is further directed to a method of selecting lettuce plants by: a) growing more than one ‘Pacific Heart’ lettuce plant, where the plants are grown from lettuce seed; and b) selecting a plant from step a). The present invention is further directed to lettuce plants and seeds produced therefrom, where the lettuce plants and seeds are isolated by the selection method of the invention.

(11) In another embodiment, the present invention is further directed to a method of breeding lettuce plants by crossing a lettuce plant with a plant grown from ‘Pacific Heart’ lettuce seed. In still another embodiment, the present invention is further directed to lettuce plants, lettuce parts from the lettuce plants (e.g., lettuce hearts), and seeds produced therefrom where the lettuce plant is isolated by the breeding method of the invention.

(12) In one embodiment, the present invention is directed to lettuce, *Lactuca sativa*, seed designated as ‘PS 1525’ having ATCC Accession Number PTA-127758. In one embodiment, the present invention is directed to a *Lactuca sativa* lettuce plant and parts isolated therefrom produced by growing ‘PS 1525’ lettuce seed. In another embodiment, the present invention is directed to a *Lactuca sativa* plant and parts isolated therefrom having all the physiological and morphological characteristics of a *Lactuca sativa* plant produced by growing ‘PS 1525’ lettuce seed having ATCC Accession Number PTA-127758. In still another embodiment, the present invention is directed to an F.sub.1 hybrid *Lactuca sativa* lettuce seed, plants grown from the seed, and a head isolated therefrom having ‘PS 1525’ as a parent, where ‘PS 1525’ is grown from ‘PS 1525’ lettuce seed having ATCC Accession Number PTA-127758.

(13) Lettuce plant parts include lettuce heads, lettuce leaves, parts of lettuce leaves, pollen, ovules, flowers, and the like. In another embodiment, the present invention is further directed to lettuce heads, lettuce leaves, parts of lettuce leaves, flowers, pollen, and ovules isolated from ‘PS 1525’ lettuce plants. In another embodiment, the present invention is further directed to tissue culture of ‘PS 1525’ lettuce plants, and to lettuce plants regenerated from the tissue culture, where the plant has all of the morphological and physiological characteristics of ‘PS 1525’ lettuce plants.

(14) The present invention is further directed to a method of selecting lettuce plants by: a) growing more than one ‘PS 1525’ lettuce plant, where the plants are grown from lettuce seed having ATCC Accession Number PTA-127758; and b) selecting a plant from step a). The present invention is further directed to lettuce plants and seeds produced therefrom, where the lettuce plants and seeds are isolated by the selection method of the invention.

(15) In another embodiment, the present invention is further directed to a method of breeding lettuce plants by crossing a lettuce plant with a plant grown from ‘PS 1525’ lettuce seed having ATCC Accession Number PTA-127758. In still another embodiment, the present invention is further directed to lettuce plants, lettuce parts from the lettuce plants (e.g., lettuce heads), and seeds produced therefrom where the lettuce plant is isolated by the breeding method of the invention.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawings will be provided by the office upon request and payment of the necessary fee.

(2) FIGS. **1**A-**1**F show lettuce variety ‘Latitude’. FIG. **1**A shows a top view of plants of lettuce variety ‘Latitude’. FIG. **1**B shows a bottom view of a head of lettuce variety ‘Latitude’. FIG. **1**C shows a cross-sectional view of a head of lettuce variety ‘Latitude’. FIG. **1**D shows a bottom view of heads of lettuce variety ‘Latitude’. FIG. **1**E shows bolting plants of lettuce variety ‘Latitude’. FIG. **1**F shows seedlings of lettuce variety ‘Latitude’.

(3) FIGS. **2**A-**2**Q show comparisons of lettuce variety ‘Latitude’ with lettuce varieties ‘PS 1501’ (unpatented; released as PI 673092) and ‘Tiber’ (unpatented; released as PI 635075). FIG. **2**A shows a top view of a plant of lettuce variety ‘Latitude’ (top) and a plant of lettuce variety ‘PS 1501’ (bottom). FIG. **2**B shows a top view of a plant of lettuce variety ‘Latitude’ (top) and a plant of lettuce variety ‘Tiber’ (bottom). FIG. **2**C shows a bottom view of a head of lettuce variety ‘Latitude’ (top) and lettuce variety ‘PS 1501’ (bottom). FIG. **2**D shows a bottom view of a head of lettuce variety ‘Latitude’ (top) and lettuce variety ‘Tiber’ (bottom). FIG. **2**E shows a side view of a head of lettuce variety ‘Latitude’ (top) and a head of lettuce variety ‘PS 1501’ (bottom). FIG. **2**F shows a side view of a head of lettuce variety ‘Latitude’ (top) and a head of lettuce variety ‘Tiber’ (bottom). FIG. **2**G shows a cross-sectional view of a head of lettuce variety ‘Latitude’ (top) and a head of lettuce variety ‘PS 1501’ (bottom). FIG. **2**H shows a cross-sectional view of a head of lettuce variety ‘Latitude’ (top) and a head of lettuce variety ‘Tiber’ (bottom). FIG. **2**I shows a mature leaf of lettuce variety ‘Latitude’ (top) and a mature leaf of lettuce variety ‘PS 1501’ (bottom). FIG. **2**J shows a mature leaf of lettuce variety ‘Latitude’ (top) and a mature leaf of lettuce variety ‘Tiber’ (bottom). FIG. **2**K shows a bottom view of heads of lettuce variety ‘Latitude’. FIG. **2**L shows a bottom view of heads of lettuce variety ‘PS 1501’. FIG. **2**M shows a bottom view of heads of lettuce variety ‘Tiber’. FIG. **2**N shows bolting plants of lettuce variety ‘PS 1501’. FIG. **2**O shows bolting plants of lettuce variety ‘Tiber’. FIG. **2**P shows seedlings of lettuce variety ‘PS 1501’. FIG. **2**Q shows seedlings of lettuce variety ‘Tiber.

(4) FIGS. **3**A-**3**F show lettuce variety ‘Pacific Heart’. FIG. **3**A shows a top view of plants of lettuce variety ‘Pacific Heart’. FIG. **3**B shows a bottom view of a plant of lettuce variety ‘Pacific Heart’. FIG. **3**C shows a cross-sectional view of a heart of lettuce variety ‘Pacific Heart’. FIG. **3**D shows a bottom view of hearts of lettuce variety ‘Pacific Heart’. FIG. **3**E shows bolting plants of lettuce variety ‘Pacific Heart’. FIG. **3**F shows seedlings of lettuce variety ‘Pacific Heart’.

(5) FIGS. **4**A-**4**V show comparisons between lettuce varieties ‘Pacific Heart’, ‘Vicious’, and ‘Salvius’ (U.S. Pat. No. 8,389,810, variety designation “41-49 RZ”). FIG. **4**A shows a top view of plants of lettuce variety ‘Vicious’. FIG. **4**B shows a bottom view of a head of lettuce variety ‘Vicious’. FIG. **4**C shows a cross-sectional view of a head of lettuce variety ‘Vicious’. FIG. **4**D shows a bottom view of heads of lettuce variety ‘Vicious’. FIG. **4**E shows a top view of plants of lettuce variety ‘Salvius’. FIG. **4**F shows a bottom view of a head of lettuce variety ‘Salvius’. FIG. **4**G shows a cross-sectional view of a head of lettuce variety ‘Salvius’. FIG. **4**H shows a bottom view of heads of lettuce variety ‘Salvius’. FIG. **4**I shows plants of lettuce varieties ‘Vicious’ (top) and ‘Pacific Heart’ (bottom). FIG. **4**J shows plants of lettuce varieties ‘Pacific Heart’ (top) and ‘Salvius’ (bottom). FIG. **4**K shows a top view of heads of lettuce varieties ‘Pacific Heart’ (left) and ‘Vicious’ (right). FIG. **4**L shows a top view of heads of lettuce varieties ‘Pacific Heart’ (left) and ‘Salvius’ (right). FIG. **4**M shows a bottom view of heads of lettuce varieties ‘Pacific Heart’ (left) and ‘Vicious’ (right). FIG. **4**N shows a bottom view of heads of lettuce varieties ‘Pacific Heart’ (left) and ‘Salvius’ (right). FIG. **4**O shows hearts of lettuce varieties ‘Pacific Heart’ (left) and ‘Vicious’ (right). FIG. **4**P shows hearts of lettuce varieties ‘Pacific Heart’ (left) and ‘Salvius’ (right). FIG. **4**Q shows a cross-sectional view of hearts of lettuce varieties ‘Pacific Heart’ (left) and ‘Vicious’ (right). FIG. **4**R shows a cross-sectional view of hearts of lettuce varieties ‘Pacific Heart’ (left) and ‘Salvius’ (right). FIG. **4**S shows bolting plants of lettuce variety ‘Vicious’. FIG. **4**T shows bolting plants of lettuce variety ‘Salvius’. FIG. **4**U shows seedlings of lettuce variety ‘Vicious’. FIG. **4**V shows seedlings of lettuce variety ‘Salvius’.

(6) FIGS. **5**A-**5**S show comparisons between lettuce varieties ‘PS 1525’, ‘Uppercut’ (U.S. Patent

Publication No. US 2021/0084853 A1), and 'Headmaster' (U.S. Plant Variety Protection Certificate No. 9800023). FIG. **5**A shows plants of lettuce varieties 'PS 1525' (top) and 'Uppercut' (bottom). FIG. **5**B shows plants of lettuce varieties 'PS 1525' (top) and 'Headmaster' (bottom). FIG. **5**C shows a bottom view of heads of lettuce varieties 'PS 1525' (top) and 'Uppercut' (bottom). FIG. **5**D shows a bottom view of heads of lettuce varieties 'PS 1525' (top) and 'Headmaster' (bottom). FIG. **5**E shows a side view of heads of lettuce varieties 'PS 1525' (top) and 'Uppercut' (bottom). FIG. **5**F shows a side view of heads of lettuce varieties 'PS 1525' (top) and 'Headmaster' (bottom). FIG. **5**G shows a top view of heads of lettuce varieties 'PS 1525' (top) and 'Uppercut' (bottom). FIG. **5**H shows a top view of heads of lettuce varieties 'PS 1525' (top) and 'Headmaster' (bottom). FIG. **5**I shows a cross-sectional view of heads of lettuce varieties 'PS 1525' (top) and 'Uppercut' (bottom). FIG. **5**J shows a cross-sectional view of heads of lettuce varieties 'PS 1525' (top) and 'Headmaster' (bottom). FIG. **5**K shows a bottom view of heads of lettuce variety 'PS 1525'. FIG. **5**L shows a bottom view of heads of lettuce variety 'Uppercut'. FIG. **5**M shows a bottom view of heads of lettuce variety 'Headmaster'. FIG. **5**N shows bolting plants of lettuce variety 'PS 1525'. FIG. **5**O shows bolting plants of lettuce variety 'Uppercut'. FIG. **5**P shows bolting plants of lettuce variety 'Headmaster'. FIG. **5**Q shows seedlings of lettuce variety 'PS 1525'. FIG. **5**R shows seedlings of lettuce variety 'Uppercut'. FIG. **5**S shows seedlings of lettuce variety 'Headmaster'.

DETAILED DESCRIPTION

Definitions

(7) In order to more clearly understand the invention, the following definitions are provided:

(8) Core Diameter: Core diameter is the diameter of the lettuce stem at the base of the cut head.

(9) Core Length: Core length is the length of the vertically sliced lettuce plant as measured from the base of the cut stem to the top of the apex (growing point).

(10) *Fusarium* Wilt: *Fusarium* wilt of lettuce is a disease caused by the fungus *Fusarium oxysporum* f. sp. *lactucae* that causes infected seedlings to wilt, and turn red or brown in color in inner tissues, and causes leaves of infected older plants to turn yellow and develop tip burn.

(11) Head Diameter: Head diameter is the diameter of the vertically sliced iceberg lettuce plant head at its widest horizontal point, perpendicular to the stem.

(12) Head Length: Head length is the diameter of the vertically sliced iceberg lettuce plant head as measured from the base of the cut stem to the cap leaf.

(13) Heart: Heart is the portion in the center of romaine type lettuces where the leaf tips curve inward to cover the growing point. Cut and trimmed hearts of romaine type lettuces can be obtained by removing the frame leaves and cutting the stem off just below the base of the outermost heart leaf.

(14) Heart Length: Heart length is the length of the vertically sliced romaine lettuce plant as measured from the base of the cut stem to the top leaf margin of the longest outermost leaf that encloses the green leaf heart.

(15) Lettuce Mosaic Virus: A disease that can cause a stunted, deformed, or mottled pattern in young lettuce and yellow, twisted, and deformed leaves in older lettuce.

(16) Maturity Date: Maturity refers to the stage when the plants are of full size or optimum weight, in marketable form or shape to be of commercial or economic value.

(17) Munsell: Munsell refers to the Munsell Color Chart, which uses the Munsell color system.

(18) *Nasonovia ribisnigri*: A lettuce aphid that colonizes the innermost leaves of the lettuce plant, contaminating areas that cannot be treated easily with insecticides.

(19) Plant Diameter: The plant diameter is a measurement across the top of the lettuce plant at its widest point. The measurement of frame diameter is taken from the outer most leaf tip horizontally to the outer most leaf tip.

(20) Tip burn: Means a browning of the edges or tips of lettuce leaves that is a physiological response to a lack of calcium.

(21) *Verticillium* Wilt: *Verticillium* Wilt of lettuce is a disease caused by the fungus *Verticillium*

dahlia that can cause the basal leaves that cover the outer part of the lettuce head to wilt and then collapse, leading to premature plant death and an unharvestable head.
(22) Taking into account these definitions, the present invention is directed to seeds of the lettuce varieties ‘Latitude’, ‘Pacific Heart’, and ‘PS 1525’ and plants produced by growing ‘Latitude’, ‘Pacific Heart’, and/or ‘PS 1525’ lettuce seeds; heads or hearts isolated or harvested from the plants; one or more plants selected from a collection of ‘Latitude’, ‘Pacific Heart’, and/or ‘PS 1525’ plants and seeds derived or produced therefrom; and plants produced by crossing a lettuce plant with a ‘Latitude’, ‘Pacific Heart’, and/or ‘PS 1525’ lettuce plant and seeds derived or produced therefrom.
(23) Objective Description of the Variety ‘Latitude’
(24) ‘Latitude’ is an iceberg lettuce variety. This variety is distinct and unique to all other iceberg lettuce varieties due to its resistance to *Verticillium* Wilt race 1, as well as characteristics including its green color, head weight, core diameter, head diameter, time to maturity, and core length. ‘Latitude’ has displayed outstanding yield and shipping qualities in the months when *Verticillium* Wilt can be at its highest levels. ‘Latitude’ has a growing season that includes summer in West Coast regions of the United States, such as Salinas, California, and is suitable for growing in the open. FIGS. **1**A-**1**F depict plants, heads, and seedlings of lettuce variety ‘Latitude’. Lettuce variety ‘Latitude’ is the result of numerous generations of plant selections chosen for its high degree of resistance to *Verticillium* Wilt race 1.
(25) The variety has shown uniformity and stability for the traits, within the limits of environmental influence for the traits. It has been self-pollinated a sufficient number of generations with careful attention to uniformity of plant type. The line has been increased with continued observation for uniformity. No variant traits have been observed or are expected in variety ‘Latitude’.
(26) Lettuce variety ‘Latitude’ has the following morphologic and other characteristics:
(27) Plant Type: Crisp (i.e., Iceberg)
(28) Seed:
(29) Color: Black (grey brown) Light dormancy: Light required Heat dormancy: Not susceptible Cotyledon to Fourth Leaf Stage: Shape of cotyledons: Broad Shape of fourth leaf: Round Fourth leaf length: 19.8 mm Fourth leaf width: 9.4 mm Fourth leaf index (length/width×10): 21.01 Apical margin: Finely dentate Basal margin: Finely dentate Green color: Medium green Anthocyanin distribution: Absent Cupping: Slight Reflexing: Apical margin
Mature Leaves: Margin: Incision depth (deepest penetration of the margin): Moderate Indentation (finest divisions of the margin): Crenate Undulation of apical margin: Moderate Green color: Munsell 5GY 5/6 (Medium green) Anthocyanin distribution: Absent Glossiness: Moderate Blistering: Absent/slight Thickness: Intermediate Trichomes: Absent (smooth)
Plant: Weight: 681.8 g Spread of frame leaves: 48.7 cm Head diameter (market trimmed with single cap leaf): 14.2 cm Head shape: Spherical Head size class: Medium Head firmness: Firm
Butt: Shape: Flat Midrib: Flattened
Core: Diameter at base of head: 32 mm Ratio of head diameter/core diameter: 4.4 Height from base of head to apex: 43.3 mm
Bolting: Number of days from first water to seed stalk emergence under summer conditions: 74 Bolting class: Medium Mature seed stalk height: 104.5 cm Mature seed stalk spread: 36.9 cm Bolter leaves: Straight Margin: Entire Bolter habit: Terminal inflorescence: Absent Lateral shoots: Present Basal side shoots: Absent
Disease Resistance: Lettuce Big-Vein Virus (LBVV): Susceptible Lettuce Mosaic Virus (LMV) strain Ls-1: Susceptible Powdery Mildew: Susceptible Corky Root Rot: Susceptible Downy Mildew (*Bremia lactucae*) (B1): Susceptible *Verticillium* Wilt (*Verticillium* dahlia) Race 1: Resistant
Pest Resistance: *Nasonovia ribisnigri* biotype 0 (Nr: 0): Susceptible
Stress Resistance: Tipburn: Moderately resistant Heat: Susceptible Cold: Susceptible Pink rib:

Susceptible Rusty brown discoloration: Susceptible Internal rib necrosis: Susceptible
Comparisons to Other Lettuce Variety
(30) Table 1 below compares characteristics of lettuce variety ‘Latitude’ with the lettuce variety ‘Tiber’ (unpatented; released as PI 635075). Column 1 lists the characteristics, column 2 shows the characteristics for lettuce variety ‘Latitude’, and column 3 shows the characteristics for lettuce variety ‘Tiber’.
(31) TABLE-US-00001 TABLE 1 Characteristic ‘Latitude’ ‘Tiber’ Green color of mature leaves Munsell 5GY 5/6 Munsell 5GY 5/8 Head diameter 14.2 cm 13.7 cm Head weight 681.8 g 611 g Spread of frame leaves 48.7 cm 49.8 cm Core diameter at base of head 32 mm 30.6 mm Core height from base of head to 43.3 mm 44.2 mm apex Mature seed stalk height 104.5 cm 105.9 cm Mature seed stalk spread 36.9 cm 36.1 cm
(32) Table 2 below compares characteristics of lettuce variety ‘Latitude’ with the lettuce variety ‘PS 1501’ (unpatented; released as PI 673092). Column 1 lists the characteristics, column 2 shows the characteristics for lettuce variety ‘Latitude’, and column 3 shows the characteristics for lettuce variety ‘PS 1501’.
(33) TABLE-US-00002 TABLE 2 Characteristic ‘Latitude’ ‘PS 1501’ Head diameter 14.2 cm 14.3 cm Head weight 681.8 g 653.4 g Spread of frame leaves 48.7 cm 49.5 cm Core diameter at base of head 32 mm 31.1 mm Core height from base of head to apex 43.3 mm 42 mm Mature seed stalk height 104.5 cm 98.75 cm Mature seed stalk spread 36.9 cm 34.8 cm
(34) Tables 3A-3C below show results of a first trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Latitude’ (Table 3A) with those of 20 plants of lettuce variety ‘PS 1501’ (Table 3B; unpatented; released as PI 673092) and 20 plants of lettuce variety ‘Tiber’ (Table 3C; unpatented; released as PI 635075). The head weights shown are total head weights.
(35) TABLE-US-00003 TABLE 3A ‘Latitude’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 850 g 164 mm 61 mm 35 mm 50.2 cm Min 535 g 122 mm 47 mm 28 mm 41.6 cm Average 686.75 g 137.2 mm 55.15 mm 31.75 mm 46.025 cm Std. Dev. 95.14 10.30 3.30 1.92 2.46
(36) TABLE-US-00004 TABLE 3B ‘PS 1501’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 985 g 172 mm 75 mm 34 mm 53.8 cm Min 445 g 118 mm 42 mm 28 mm 46.5 cm Average 740.25 g 141.95 mm 54.85 mm 31.25 mm 50.44 cm Std. Dev. 167.01 14.51 9.40 1.77 2.11
(37) TABLE-US-00005 TABLE 3C ‘Tiber’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 770 g 155 mm 81 mm 34 mm 56.1 cm Min 490 g 114 mm 44 mm 26 mm 47.3 cm Average 619.5 g 131.55 mm 60.5 mm 30.1 mm 50.015 cm Std. Dev. 83.73 9.64 9.97 2.25 2.57
(38) Tables 4A-4C below show results of a second trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Latitude’ (Table 4A) with those of 20 plants of lettuce variety ‘PS 1501’ (Table 4B; unpatented; released as PI 673092) and 20 plants of lettuce variety ‘Tiber’ (Table 4C; unpatented; released as PI 635075). The head weights shown are total head weights.
(39) TABLE-US-00006 TABLE 4A ‘Latitude’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 885 g 165 mm 60 mm 40 mm 58.2 cm Min 510 g 130 mm 21 mm 31 mm 48.5 cm Average 744.75 g 144.6 mm 38.4 mm 34.95 mm 52.31 cm Std. Dev. 109.60 10.86 10.45 2.54 2.74
(40) TABLE-US-00007 TABLE 4B ‘PS 1501’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 845 g 160 mm 62 mm 36 mm 54.3 cm Min 490 g 125 mm 18 mm 28 mm 48.3 cm Average 643.45 g 140.3 mm 40.65 mm 32.95 mm 51.775 cm Std. Dev. 114.38 10.50 11.78 2.44 1.80
(41) TABLE-US-00008 TABLE 4C ‘Tiber’ Head Head Core Core Frame Wt. Diameter Length

Diameter Diameter Max 960 g 156 mm 73 mm 37 mm 54.3 cm Min 379 g 115 mm 24 mm 26 mm 46.4 cm Average 668.65 g 138.85 mm 38.4 mm 31.7 mm 50.46 cm Std. Dev. 188.48 10.99 11.84 3.15 2.57

(42) Tables 5A-5C below show results of a third trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Latitude’ (Table 5A) with those of 20 plants of lettuce variety ‘PS 1501’ (Table 5B; unpatented; released as PI 673092) and 20 plants of lettuce variety ‘Tiber’ (Table 5C; unpatented; released as PI 635075). The head weights shown are total head weights.

(43) TABLE-US-00009 TABLE 5A ‘Latitude’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 660 g 141 mm 31 mm 33 mm 50.3 cm Min 385 g 121 mm 23 mm 27 mm 38.7 cm Aver- 507.5 g 129.6 mm 26.05 mm 30.7 mm 45.75 cm age Std. 80.94 5.55 2.31 1.53 2.72 Dev.

(44) TABLE-US-00010 TABLE 5B ‘PS 1501’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 650 g 151 mm 31 mm 33 mm 47.5 cm Min 415 g 124 mm 20 mm 27 mm 41.1 cm Average 536 g 135.75 mm 23.65 mm 29.75 mm 44.93 cm Std. 66.64 7.97 2.72 2.02 2.44 Dev.

(45) TABLE-US-00011 TABLE 5C ‘Tiber’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 620 g 159 mm 32 mm 34 mm 53.4 cm Min 335 g 112 mm 21 mm 27 mm 42.4 cm Average 509 g 130.15 mm 24.85 mm 30.8 mm 48.16 cm Std. 89.35 11.93 2.94 1.85 3.02 Dev.

(46) Tables 6A-6C below show results of a fourth trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Latitude’ (Table 6A) with those of 20 plants of lettuce variety ‘PS 1501’ (Table 6B; unpatented; released as PI 673092) and 20 plants of lettuce variety ‘Tiber’ (Table 6C; unpatented; released as PI 635075). The head weights shown are total head weights.

(47) TABLE-US-00012 TABLE 6A ‘Latitude’ Head Head Core Core Frame Wt. Diameter Length Diameter Diameter Max 955 g 167 mm 68 mm 36 mm 55.1 cm Min 610 g 135 mm 41 mm 27 mm 45.7 cm Aver- 788 g 155.55 mm 53.6 mm 30.65 mm 50.835 cm age Std. 90.20 8.30 7.56 2.66 2.46 Dev.

(48) TABLE-US-00013 TABLE 6B ‘PS Head Head Core Core Frame 1501’ Wt. Diameter Length Diameter Diameter Max 960 g 174 mm 65 mm 34 mm 55.6 cm Min 530 g 138 mm 35 mm 27 mm 48.3 cm Average 693.75 g 154.45 mm 48.7 mm 30.55 mm 51.05 cm Std. Dev. 123.46 9.03 7.70 2.04 2.04

(49) TABLE-US-00014 TABLE 6C Head Head Core Core Frame ‘Tiber’ Wt. Diameter Length Diameter Diameter Max 885 g 160 mm 66 mm 35 mm 53.2 cm Min 480 g 130 mm 39 mm 26 mm 47.8 cm Average 647 g 148.3 mm 53.05 mm 29.95 mm 50.52 cm Std. Dev. 118.94 8.58 6.95 2.70 1.63

(50) Further distinguishing features are apparent from the comparison of the variety ‘Latitude’ with the varieties ‘PS 1501’ and ‘Tiber’ depicted in FIGS. **2**A-**2**Q.

(51) Objective Description of the Variety ‘Pacific Heart’

(52) ‘Pacific Heart’ is a romaine lettuce variety. This variety is distinct and unique to all other romaine lettuce varieties due to its resistance to *Nasonovia ribisnigri* Nr: 0 and *Fusarium* Wilt race 1, as well as characteristics including its green color, time to maturity, leaf cupping, leaf smoothness, and rib smoothness. ‘Pacific Heart’ has a growing season that includes spring and summer in West Coast regions of the United States as well as winter in regions in the Southwest of the United States, such the Arizona desert, and is suitable for growing in the open. FIGS. **3**A-**3**F depict plants, hearts, and seedlings of lettuce variety ‘Pacific Heart’. Lettuce variety ‘Pacific Heart’ is the result of numerous generations of plant selections chosen for its high degree of resistance to *Nasonovia ribisnigri* Nr: 0 and *Fusarium* Wilt race 1.

(53) The variety has shown uniformity and stability for the traits, within the limits of environmental

influence for the traits. It has been self-pollinated a sufficient number of generations with careful attention to uniformity of plant type. The line has been increased with continued observation for uniformity. No variant traits have been observed or are expected in variety ‘Pacific Heart’.

(54) Lettuce variety ‘Pacific Heart’ has the following morphologic and other characteristics:

(55) Plant type: Cos (i.e., romaine)

(56) Seed:

(57) Color: Munsell 2.5Y 7/2 (White) Light dormancy: Light required Heat dormancy: Not susceptible

Cotyledon to Fourth Leaf Stage: Shape of cotyledons: Intermediate Shape of fourth leaf: Oval Fourth leaf length: 18.9 mm Fourth leaf width: 10.1 mm Fourth leaf index (length/width×10): 18.8 Apical margin: Entire Basal margin: Moderately dentate Green color: Light green Anthocyanin distribution: Absent Cupping: Uncupped Reflexing: Apical margins

Mature Leaves: Margin: Incision depth (deepest penetration of the margin): Absent/shallow Indentation (finest divisions of the margin): Entire Undulation of apical margin: Absent/slight Green color: Munsell 5GY 5/8 (Light green) Anthocyanin distribution: Absent Glossiness: Dull Blistering: Moderate Thickness: Intermediate Trichomes: Absent (smooth)

Plant: Weight: 672.7 g Spread of frame leaves: 39 cm Heart diameter (market trimmed): 32.6 cm Heart shape: Elongate Heart size class: Large Heart firmness: Moderate

Butt: Shape: Rounded Midrib: Prominently raised

Core: Diameter at base of head: 34.6 mm Ratio of heart diameter/core diameter: 9.4 Height from base of heart to apex: 78.5 mm

Bolting: Number of days from first water to seed stalk emergence under summer conditions: 69 Bolting class: Rapid Mature seed stalk height: 83.7 cm Mature seed stalk spread: 31.5 cm Bolter leaves: Curved Margin: Dentate Bolter habit: Terminal inflorescence: Absent Lateral shoots: Present Basal side shoots: Present

Disease Resistance: Lettuce Big-Vein Virus (LBVV): Susceptible Lettuce Mosaic Virus (LMV) strain Ls-1: Susceptible Powdery Mildew: Susceptible Corky Root Rot: Susceptible Downy Mildew (*Bremia lactucae*) (B1): Resistant to isolates B1: 16, B1: 20, B1: 21, B1: 26, B1: 27, B1: 29, B1: 30, and B1: 33 *Fusarium* Wilt (*Fusarium oxysporum* f. sp. *lactucae*) race 1: Resistant

Pest Resistance: *Nasonovia ribisnigri* biotype 0 (Nr: 0): Resistant

Stress Resistance: Tipburn: Moderately resistant Heat: Susceptible Cold: Susceptible Pink rib: Susceptible Rusty brown discoloration: Susceptible Internal rib necrosis: Susceptible

Comparisons to Other Lettuce Variety

(58) Table 7 below compares characteristics of lettuce variety ‘Pacific Heart’ with the lettuce variety ‘Salvius’ (U.S. Pat. No. 8,389,810, variety designation “41-49 RZ”). Column 1 lists the characteristics, column 2 shows the characteristics for lettuce variety ‘Pacific Heart’, and column 3 shows the characteristics for lettuce variety ‘Salvius’.

(59) TABLE-US-00015 TABLE 7 Characteristic ‘Pacific Heart’ ‘Salvius’ Plant weight 672.7 g 705.6 g Green color of mature Munsell Munsell leaves 5GY 5/8 5GY 4/6 Heart diameter 32.6 cm 33.7 cm Core diameter 34.6 mm 35 mm Core height at base of 78.5 mm 58.7 mm heart to apex Mature seed stalk height 83.7 cm 91.6 cm Mature seed stalk spread 31.5 cm 32.9 cm

(60) Table 8 below compares characteristics of lettuce variety ‘Pacific Heart’ with the lettuce variety ‘Vicious’ (U.S. Pat. No. 9,913,452, variety designation “NUN 06117 LTL”). Column 1 lists the characteristics, column 2 shows the characteristics for lettuce variety ‘Pacific Heart’, and column 3 shows the characteristics for lettuce variety ‘Vicious’.

(61) TABLE-US-00016 TABLE 8 Characteristic ‘Pacific Heart’ ‘Vicious’ Plant weight 672.7 g 650 g Green color of mature Munsell Munsell leaves 5GY 5/8 5GY 4/4 Spread of frame leaves 39 cm 39.1 cm Heart diameter 32.6 cm 33.1 cm Core diameter 34.6 mm 35.8 mm Core height at base of 78.5 mm 53.4 mm heart to apex Mature seed stalk height 83.7 cm 102.8 cm Mature seed stalk spread 31.5 cm 45.2 cm

(62) Tables 9A-9C below show results of a first trial that compares the head weight, heart length, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Pacific Heart’ (Table 9A) with those of 20 plants of lettuce variety ‘Salvius’ (Table 9B; U.S. Pat. No. 8,389,810, variety designation “41-49 RZ”) and 20 plants of lettuce variety ‘Vicious’ (Table 9C; U.S. Pat. No. 9,913,452, variety designation “NUN 06117 LTL”). The weights shown are of the whole plant (i.e., heart with the outer leaves attached), which is referred to as a head when sold (e.g., as a boxed product).

(63) TABLE-US-00017 TABLE 9A ‘Pacific Heart Heart Core Core Frame Heart’ Wt. Length Length Diameter Diameter Max 880 g 415 mm 120 mm 40 mm 43.1 cm Min 595 g 370 mm 60 mm 34 mm 35.5 cm Average 714.25 g 396.25 mm 94.7 mm 37.95 mm 38.505 cm Std. Dev 85.78 12.66 15.25 1.93 2.12

(64) TABLE-US-00018 TABLE 9B Heart Heart Core Core Frame ‘Salvius’ Wt. Length Length Diameter Diameter Max 840 g 430 mm 140 mm 40 mm 42.4 cm Min 540 g 370 mm 50 mm 32 mm 34.3 cm Average 744.25 g 397.5 mm 84.7 mm 36.25 mm 38.5 cm Std. Dev 77.52 18.10 24.08 2.31 2.40

(65) TABLE-US-00019 TABLE 9C Heart Heart Core Core Frame ‘Vicious’ Wt. Length Length Diameter Diameter Max 850 g 475 mm 64 mm 41 mm 40.4 cm Min 590 g 370 mm 46 mm 30 mm 32.9 cm Average 694.5 g 408.5 mm 56.05 mm 36.05 mm 35.695 cm Std. Dev 79.72 23.79 5.10 3.30 2.58

(66) Tables 10A-10C below show results of a second trial that compares the head weight, heart length, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Pacific Heart’ (Table 10A) with those of 20 plants of lettuce variety ‘Salvius’ (Table 10B; U.S. Pat. No. 8,389,810, variety designation “41-49 RZ”) and 20 plants of lettuce variety ‘Vicious’ (Table 10C; U.S. Pat. No. 9,913,452, variety designation “NUN 06117 LTL”). The weights shown are of the whole plant (i.e., heart with the outer leaves attached), which is referred to as a head when sold (e.g., as a boxed product).

(67) TABLE-US-00020 TABLE 10A ‘Pacific Heart Heart Core Core Frame Heart’ Wt. Length Length Diameter Diameter Max 1000 g 360 mm 115 mm 41 mm 38.5 cm Min 530 g 290 mm 50 mm 32 mm 33.5 cm Average 717.8 g 331.3 mm 75.6 mm 37.25 mm 35.73 cm Std. Dev 97.82 20.71 17.74 3.13 1.66

(68) TABLE-US-00021 TABLE 10B Heart Heart Core Core Frame ‘Salvius’ Wt. Length Length Diameter Diameter Max 1110 g 390 mm 103 mm 42 mm 40.1 cm Min 655 g 340 mm 46 mm 30 mm 32.1 cm Average 920.55 g 361.25 mm 75.8 mm 38.85 mm 34.645 cm Std. Dev 131.10 14.13 14.46 2.76 2.06

(69) TABLE-US-00022 TABLE 10C Heart Heart Core Core Frame ‘Vicious’ Wt. Length Length Diameter Diameter Max 805 g 390 mm 50 mm 40 mm 43.4 cm Min 490 g 320 mm 28 mm 29 mm 34.8 cm Average 650.25 g 355 mm 39.5 mm 35.95 mm 39.185 cm Std. Dev 93.76 16.62 7.58 3.10 2.09

(70) Tables 11A-11C below show results of a third trial that compares the head weight, heart length, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘Pacific Heart’ (Table 11A) with those of 20 plants of lettuce variety ‘Salvius’ (Table 11B; U.S. Pat. No. 8,389,810, variety designation “41-49 RZ”) and 20 plants of lettuce variety ‘Vicious’ (Table 11C; U.S. Pat. No. 9,913,452, variety designation “NUN 06117 LTL”). The weights shown are of the whole plant (i.e., heart with the outer leaves attached), which is referred to as a head when sold (e.g., as a boxed product).

(71) TABLE-US-00023 TABLE 11A ‘Pacific Heart Heart Core Core Frame Heart’ Wt. Length Length Diameter Diameter Max 916 g 256 mm 82 mm 36 mm 50.2 cm Min 350 g 215 mm 48 mm 25 mm 37.1 cm Average 690.55 g 241.45 mm 61.95 mm 32.4 mm 44.22 cm Std. Dev 142.09 11.18 9.76 3.15 3.58

(72) TABLE-US-00024 TABLE 11B Heart Heart Core Core Frame ‘Salvius’ Wt. Length Length

Diameter Diameter Max 720 g 270 mm 45 mm 40 mm 49.7 cm Min 400 g 195 mm 24 mm 23 mm 39.4 cm Average 581 g 243.85 mm 35.05 mm 32.65 mm 44.035 cm Std. Dev 80.29 20.46 6.86 5.12 3.20

(73) TABLE-US-00025 TABLE 11C Heart Heart Core Core Frame 'Vicious' Wt. Length Length Diameter Diameter Max 925 g 270 mm 65 mm 56 mm 48.1 cm Min 550 g 194 mm 25 mm 25 mm 39.1 cm Average 672 g 227.35 mm 42.85 mm 41.1 mm 43.765 cm Std. Dev 97.80 21.94 13.25 8.94 2.54

(74) Tables 12A-12C below show results of a fourth trial that compares the head weight, heart length, core length, core diameter, and frame diameter of 20 plants of the lettuce variety 'Pacific Heart' (Table 12A) with those of 20 plants of lettuce variety 'Salvius' (Table 12B; U.S. Pat. No. 8,389,810, variety designation "41-49 RZ") and 20 plants of lettuce variety 'Vicious' (Table 12C; U.S. Pat. No. 9,913,452, variety designation "NUN 06117 LTL"). The weights shown are of the whole plant (i.e., heart with the outer leaves attached), which is referred to as a head when sold (e.g., as a boxed product).

(75) TABLE-US-00026 TABLE 12A 'Pacific Heart Heart Core Core Frame Heart' Wt. Length Length Diameter Diameter Max 825 g 371 mm 101 mm 36 mm 40.1 cm Min 425 g 304 mm 64 mm 27 mm 34.2 cm Average 568 g 333.9 mm 79.95 mm 30.9 mm 37.505 cm Std. Dev 104.29 17.34 9.28 2.59 1.64

(76) TABLE-US-00027 TABLE 12B Heart Heart Core Core Frame 'Salvius' Wt. Length Length Diameter Diameter Max 675 g 381 mm 45 mm 35 mm 40.4 cm Min 445 g 321 mm 30 mm 29 mm 35.6 cm Average 576.75 g 345.1 mm 39.25 mm 32.4 mm 38.56 cm Std. Dev 53.10 16.23 4.48 1.64 1.45

(77) TABLE-US-00028 TABLE 12C Heart Heart Core Core Frame 'Vicious' Wt. Length Length Diameter Diameter Max 685 g 363 mm 97 mm 33 mm 40.7 cm Min 420 g 297 mm 58 mm 27 mm 34.8 cm Average 583.25 g 332.55 mm 75.05 mm 29.95 mm 37.845 cm Std. Dev 70.72 20.05 13.12 1.96 1.64

(78) Further distinguishing features are apparent from the comparison of the varieties 'Pacific Heart', 'Salvius', and 'Vicious' depicted in FIGS. **4**A-**4**V.

(79) Objective Description of the Variety 'PS 1525'

(80) 'PS 1525' is an iceberg lettuce variety. This variety is distinct and unique to all other iceberg lettuce varieties due to its resistance to *Fusarium* Wilt race 1, as well as characteristics including its uniformity, weight, head diameter, and core diameter. 'PS 1525' has a growing season that includes summer and fall in West Coast regions of the United States as well as spring in regions in the Southwest of the United States, such the Arizona desert, and is suitable for growing in the open. Lettuce variety 'PS 1525' is the result of numerous generations of plant selections chosen for its resistance to *Fusarium* Wilt race 1.

(81) The variety has shown uniformity and stability for the traits, within the limits of environmental influence for the traits. It has been self-pollinated a sufficient number of generations with careful attention to uniformity of plant type. The line has been increased with continued observation for uniformity. No variant traits have been observed or are expected in variety 'PS 1525'.

(82) Lettuce variety 'PS 1525' has the following morphologic and other characteristics:

(83) Plant type: Crisp (i.e., iceberg)

(84) Seed:

(85) Color: Black (grey brown) Light dormancy: Light not required Heat dormancy: Susceptible Cotyledon to Fourth Leaf Stage: Shape of cotyledons: Spatulate Shape of fourth leaf: Elongated Fourth leaf length: 18.8 mm Fourth leaf width: 9.5 mm Fourth leaf index (length/width×10): 19.9 Apical margin: Finely dentate Basal margin: Moderately dentate Green color: Medium green Anthocyanin distribution: Absent Cupping: Slight Reflexing: Apical margin

Mature Leaves: Margin: Incision depth (deepest penetration of the margin): Moderate Indentation (finest divisions of the margin): Crenate Undulation of apical margin: Moderate Green color:

Munsell 5GY 5/4 (Medium green) Anthocyanin distribution: Absent Glossiness: Dull Blistering: Moderate Thickness: Intermediate Trichomes: Absent (smooth)
Plant Weight: 934.7 g Spread of frame leaves: 56 cm Head diameter (market trimmed with single cap leaf): 14.7 cm Head shape: Spherical Head size class: Large Head firmness: Firm
Butt: Shape: Rounded Midrib: Moderately raised
Core: Diameter at base of head: 36.5 mm Ratio of head diameter/core diameter: 4 Height from base of head to apex: 41.2 mm
Bolting: Number of days from first water to seed stalk emergence under summer conditions: 72 Bolting class: Medium Mature seed stalk height: 105.3 cm Mature seed stalk spread: 41.5 cm
Bolter leaves: Curved Margin: Dentate Bolter habit: Terminal inflorescence: Present Lateral shoots: Present Basal side shoots: Absent
Disease Resistance: Lettuce Big-Vein Virus (LBVV): Susceptible Lettuce Mosaic Virus (LMV) strain Ls-1: Susceptible Powdery Mildew: Susceptible Corky Root Rot: Susceptible Downy Mildew (*Bremia lactucae*) (B1): Susceptible *Fusarium* Wilt (*Fusarium oxysporum* f. sp. *lactucae*) race 1: Resistant
Pest Resistance: *Nasonovia ribisnigri* biotype 0 (Nr: 0): Susceptible
Stress Resistance: Tipburn: Moderately resistant Heat: Susceptible Cold: Susceptible Pink rib: Susceptible Rusty brown discoloration: Susceptible Internal rib necrosis: Susceptible
Comparisons to Other Lettuce Variety
(86) Table 13 below compares characteristics of lettuce variety ‘PS 1525’ with the lettuce variety ‘Uppercut’ (U.S. Patent Publication No. US 2021/0084853 A1). Column 1 lists the characteristics, column 2 shows the characteristics for lettuce variety ‘PS 1525’, and column 3 shows the characteristics for lettuce variety ‘Uppercut’.
(87) TABLE-US-00029 TABLE 13 Characteristic ‘PS 1525’ ‘Uppercut’ Weight 934.7 g 893.2 g Green color of mature Munsell Munsell leaves 5GY 5/4 5GY 5/6 Spread of frame leaves 56 cm 58.4 cm Head diameter 14.7 cm 14.3 cm Core diameter at base of 36.5 mm 35.9 mm head Core height from base of 41.2 mm 38.9 mm head to apex Mature seed stalk height 105.3 cm 111.1 cm Mature seed stalk spread 41.5 cm 39.8 cm
(88) Table 14 below compares characteristics of lettuce variety ‘PS 1525’ with the lettuce variety ‘Headmaster’ (U.S. Plant Variety Protection Certificate No. 9800023). Column 1 lists the characteristics, column 2 shows the characteristics for lettuce variety ‘PS 1525’, and column 3 shows the characteristics for lettuce variety ‘Headmaster’.
(89) TABLE-US-00030 TABLE 14 Characteristic ‘PS 1525’ ‘Headmaster’ Weight 934.7 g 702.4 g Green color of mature Munsell Munsell leaves 5GY 5/4 5GY 5/6 Spread of frame leaves 56 cm 58.2 cm Head diameter 14.7 cm 14.2 cm Core diameter at base of 36.5 mm 33.6 mm head Core height from base of 41.2 mm 30.2 mm head to apex Mature seed stalk height 105.3 cm 106.2 cm Mature seed stalk spread 41.5 cm 36.2 cm
(90) Tables 15A-15C below show results of a first trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘PS 1525’ (Table 15A) with those of 20 plants of lettuce variety ‘Uppercut’ (Table 15B; U.S. Patent Publication No. US 2021/0084853 A1) and 20 plants of lettuce variety ‘Headmaster’ (Table 15C; U.S. Plant Variety Protection Certificate No. 9800023). The head weights shown are total head weights.
(91) TABLE-US-00031 TABLE 15A ‘PS Head Head Core Core Frame 1525’ Wt. Diameter Length Diameter Diameter Max 1250 g 160 mm 55 mm 41 mm 53.5 cm Min 960 g 130 mm 34 mm 30 mm 47.1 cm Average 1060.25 g 146.75 mm 42.15 mm 36.4 mm 50.57 cm Std. Dev. 83.88 9.06 5.10 3.45 1.61
(92) TABLE-US-00032 TABLE 15B ‘Upper- Head Head Core Core Frame cut’ Wt. Diameter Length Diameter Diameter Max 1110 g 151 mm 45 mm 40 mm 58.3 cm Min 540 g 120 mm 22 mm 25 mm 50.4 cm Average 859.5 g 136.5 mm 35.4 mm 33.1 mm 52.815 cm Std.

Dev. 152.98 7.74 5.72 3.46 2.18

(93) TABLE-US-00033 TABLE 15C ‘Head- Head Head Core Core Frame master’ Wt. Diameter Length Diameter Diameter Max 890 g 156 mm 43 mm 36 mm 57.4 cm Min 620 g 125 mm 20 mm 28 mm 50.5 cm Average 759.75 g 139.75 mm 28.9 mm 31.8 mm 53.93 cm Std. Dev. 74.40 7.79 4.89 2.21 2.13

(94) Tables 16A-16C below show results of a second trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘PS 1525’ (Table 16A) with those of 20 plants of lettuce variety ‘Uppercut’ (Table 16B; U.S. Patent Publication No. US 2021/0084853 A1) and 20 plants of lettuce variety ‘Headmaster’ (Table 16C; U.S. Plant Variety Protection Certificate No. 9800023). The head weights shown are total head weights.

(95) TABLE-US-00034 TABLE 16A ‘PS Head Head Core Core Frame 1525’ Wt. Diameter Length Diameter Diameter Max 1110 g 163 mm 50 mm 41 mm 50.2 cm Min 775 g 138 mm 29 mm 34 mm 45.1 cm Average 955.75 g 152.3 mm 37.25 mm 36.95 mm 46.795 cm Std. Dev. 96.92 6.33 6.09 2.56 1.30

(96) TABLE-US-00035 TABLE 16B ‘Upper- Head Head Core Core Frame cut’ Wt. Diameter Length Diameter Diameter Max 1140 g 164 mm 51 mm 43 mm 49.8 cm Min 740 g 134 mm 29 mm 34 mm 44.1 cm Average 977.5 g 149.2 mm 36.55 mm 38.15 mm 46.69 cm Std. Dev. 89.20 8.16 5.88 2.81 1.56

(97) TABLE-US-00036 TABLE 16C ‘Head- Head Head Core Core Frame master’ Wt. Diameter Length Diameter Diameter Max 1000 g 165 mm 40 mm 44 mm 49.1 cm Min 635 g 133 mm 20 mm 29 mm 42.1 cm Average 799.5 g 149.15 mm 30.2 mm 37.55 mm 44.99 cm Std. Dev. 93.51 8.90 5.93 3.61 1.72

(98) Tables 17A-17C below show results of a third trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘PS 1525’ (Table 17A) with those of 20 plants of lettuce variety ‘Uppercut’ (Table 17B; U.S. Patent Publication No. US 2021/0084853 A1) and 20 plants of lettuce variety ‘Headmaster’ (Table 17C; U.S. Plant Variety Protection Certificate No. 9800023). The head weights shown are total head weights.

(99) TABLE-US-00037 TABLE 17A ‘PS Head Head Core Core Frame 1525’ Wt. Diameter Length Diameter Diameter Max 1130 g 159 mm 73 mm 45 mm 56.1 cm Min 630 g 133 mm 36 mm 31 mm 47.4 cm Average 938.25 g 148.5 mm 57.35 mm 40.25 mm 51.565 cm Std. Dev. 147.31 7.03 9.29 3.26 2.03

(100) TABLE-US-00038 TABLE 17B ‘Upper- Head Head Core Core Frame cut’ Wt. Diameter Length Diameter Diameter Max 1140 g 164 mm 65 mm 44 mm 59.1 cm Min 740 g 138 mm 41 mm 32 mm 47.3 cm Average 994.25 g 149.35 mm 52 mm 39.15 mm 52.09 cm Std. Dev. 114.46 7.85 7.42 3.10 3.37

(101) TABLE-US-00039 TABLE 17C ‘Head- Head Head Core Core Frame master’ Wt. Diameter Length Diameter Diameter Max 900 g 164 mm 62 mm 40 mm 57.1 cm Min 485 g 125 mm 30 mm 32 mm 46.5 cm Average 689.25 g 144.55 mm 40.05 mm 35.6 mm 51.195 cm Std. Dev. 100.53 12.72 7.62 2.16 2.20

(102) Tables 18A-18C below show results of a fourth trial that compares the head weight, head diameter, core length, core diameter, and frame diameter of 20 plants of the lettuce variety ‘PS 1525’ (Table 18A) with those of 20 plants of lettuce variety ‘Uppercut’ (Table 18B; U.S. Patent Publication No. US 2021/0084853 A1) and 20 plants of lettuce variety ‘Headmaster’ (Table 18C; U.S. Plant Variety Protection Certificate No. 9800023). The head weights shown are total head weights.

(103) TABLE-US-00040 TABLE 18A ‘PS Head Head Core Core Frame 1525’ Wt. Diameter Length Diameter Diameter Max 997 g 159 mm 36 mm 40 mm 86 cm Min 453 g 123 mm 20 mm 28 mm 68 cm Average 784.35 g 139.8 mm 27.9 mm 32.3 mm 75.125 cm

Std. Dev. 129.30 11.20 4.04 2.89 4.59
(104) TABLE-US-00041 TABLE 18B ‘Upper- Head Head Core Core Frame cut’ Wt. Diameter Length Diameter Diameter Max 710 g 163 mm 45 mm 41 mm 93.5 cm Min 420 g 111 mm 2 mm 25 mm 72 cm Average 741.5 g 137.4 mm 31.5 mm 33.35 mm 81.875 cm Std. Dev. 121.11 13.14 10.40 3.70 7.48
(105) TABLE-US-00042 TABLE 18C ‘Head- Head Head Core Core Frame master’ Wt. Diameter Length Diameter Diameter Max 865 g 148 mm 34 mm 40 mm 99 cm Min 400 g 120 mm 10 mm 20 mm 70.5 cm Average 561.25 g 136.25 mm 21.8 mm 29.6 mm 82.525 cm Std. Dev. 178.10 6.71 6.68 5.21 8.59
(106) Further distinguishing features are apparent from the comparison of the variety ‘PS 1525’ with the varieties ‘Uppercut’ and ‘Headmaster’ depicted in FIGS. **5**A-**5**S.
Further Embodiments
(107) Breeding
(108) In lettuce breeding, lines are selected for their appropriate characteristics. For example, one line may be selected for bolt tolerance in the fall growing conditions of the desert production locations of California and Arizona. Another line may be selected for the size, color, and texture of the lettuce head. Crosses are made, for example, to produce a dark green, sure heading iceberg lettuce with improved texture, and size for fall plantings in Yuma, Arizona and the Salinas Valley, California.
(109) To optimize crossing, it is important to note that lettuce is an obligate self-pollinating species. This means that the pollen is shed before stigma emergence, assuring 100% self-fertilization. Since each lettuce flower is an aggregate of about 10-20 individual florets (typical of the Compositae family), manual removal of the anther tubes containing the pollen is performed by procedures well known in the art of lettuce breeding.
(110) The manual removal of anther tubes, though an effective means to ensure the removal of all self pollinating possibilities, is very tedious and time consuming when a large number of crosses are to be made. The breeders have therefore adapted a well documented and modified method of making crosses more efficiently using these methods. This particular cross was made by first misting the designated male flowers to wash the pollen off prior to fertilization. This process of misting is a proven and effective means of pollen removal that assures crossing or hybridization. About 60-90 minutes past sunrise, flowers to be used for crossings are selected. The basis for selection are open flowers, with the stigma emerged and the pollen visibly attached to the single stigma (about 10-20 stigma). Using 3-4 pumps of water from a regular spray bottle, the pollen is washed off with enough pressure to dislodge the pollen grains, but not enough to damage the style. Excess water is dried off with clean paper towels. About 30 minutes later, the styles should spring back up and the two lobes of the stigma are visibly open in a “V” shape. Pollen from another variety or donor parent is then introduced by gently rubbing the stigma and style of the donor parent to the maternal parent. Tags with the pertinent information on date and pedigree are then secured to the flowers in order to keep track.
(111) About 2-3 weeks after pollination, seeds are harvested when the involucre have matured. The seeds are eventually sown and in the presence of markers such as leaf color or leaf margins, the selfed or maternal seedlings or plants are identified. Generally, there are no visible markers and breeders must wait until the F.sub.2 generations when expected segregation patterns for the genetic character of interest can be followed. This latter situation mandates a lengthy wait to determine if hybrids are produced. Two relevant references teaching methods for out crossing lettuce are: (1) Ryder, E. J. and A. S. Johnson. 1974. Mist depollination of lettuce flowers. Hortscience 9:584; and (2) Nagata, R. T. 1992. Clip and Wash Method of Emasculation for Lettuce. Hortscience 27 (8): 907-908 both of which are hereby incorporated by reference in their entirety for the purpose of providing details on the techniques well known in the art.
(112) Selection

(113) In addition to crossing, selection may be used to identify and isolate new lettuce lines. In lettuce selection, lettuce seeds are planted, the plants are grown and single plant selections are made of plants with desired characteristics. Such characteristics may include improved head, heart, and frame size, deeper or darker green leaf color, etc. Seed from the single plant selections are harvested, separated from seeds of the other plants in the field and re-planted. The plants from the selected seed are monitored to determine if they exhibit the desired characteristics of the originally selected line. Selection work is continued over multiple generations to increase the uniformity of the new line.

DEPOSIT INFORMATION

(114) Lettuce Variety ‘PS 1525’

(115) A deposit of the lettuce variety ‘PS 1525’ is maintained by Pinnacle Seed, Inc., having an address of P.O. Box 222672, Carmel, California 93923, United States of America. Access to this deposit will be available during the pendency of this application to persons determined by the Commissioner of Patents and Trademarks to be entitled thereto under 37 C.F.R. § 1.14 and 35 U.S.C. § 122. Upon allowance of any claims in this application, all restrictions on the availability to the public of the variety will be irrevocably removed by affording access to a deposit of at least 2,500 seeds of the same variety made according to the Budapest Treaty in the American Type Culture Collection, (ATCC), ATCC Patent Depository, 10801 University Boulevard, Manassas, Virginia, 20110, USA.

(116) The lettuce variety ‘PS 1525’ was deposited on May 3, 2024 according to the Budapest Treaty in the American Type Culture Collection (ATCC), ATCC Patent Depository, 10801 University Boulevard, Manassas, Virginia, 20110, USA. The deposit has been assigned ATCC number PTA-127758. Access to this deposit will be available during the pendency of this application to persons determined by the Commissioner of Patents and Trademarks to be entitled thereto under 37 C.F.R. § 1.14 and 35 U.S.C. § 122. Upon allowance of any claims in this application, all restrictions on the availability to the public of the variety will be irrevocably removed.

(117) The deposit will be maintained in the ATCC depository, which is a public depository, for a period of at least 30 years, or at least 5 years after the most recent request for a sample of the deposit, or for the effective life of the patent, whichever is longer, and will be replaced if a deposit becomes nonviable during that period.

Claims

1. A *Lactuca sativa* seed designated as ‘PS 1525’, representative sample of seed having been deposited under ATCC Accession Number PTA-127758.
2. A *Lactuca sativa* plant produced by growing the seed of claim 1.
3. A plant part from the plant of claim 2.
4. The plant part of claim 3, wherein said part is a head, a heart, a leaf, or a portion thereof.
5. The plant part of claim 4, wherein said part is a head or a heart.
6. A *Lactuca sativa* plant having all the physiological and morphological characteristics of the *Lactuca sativa* plant of claim 2.
7. A plant part from the plant of claim 6.
8. The plant part of claim 7, wherein said part is a head, a heart, a leaf, or a portion thereof.
9. The plant part of claim 8, wherein said part is a head or a heart.
10. An F.sub.1 hybrid *Lactuca sativa* plant having ‘PS 1525’ as a parent where ‘PS 1525’ is grown from the seed of claim 1.
11. A pollen grain or an ovule of the plant of claim 2.
12. A tissue culture of the plant of claim 2.
13. A *Lactuca sativa* plant regenerated from the tissue culture of claim 12, wherein the plant has all

of the morphological and physiological characteristics of a lettuce plant produced by growing seed designated as ‘PS 1525’, representative sample of seed having been deposited under ATCC Accession Number PTA-127758.

14. A method of making *Lactuca sativa* seeds, said method comprising crossing the plant of claim 2 with another lettuce plant and harvesting seed therefrom.

15. A method of selecting *Lactuca sativa*, comprising: a) growing more than one plant from the seed of claim 1; and b) selecting a plant from step a).