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Colfer

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(54) **ARTICHOKE PLANT NAMED 'PS-MSC0041'**

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(58) **Field of Search** **Plt./258**

(56) **References Cited**

U.S. PATENT DOCUMENTS

P.P. 2,738 * 5/1967 Montgomery et al. Plt./258

* cited by examiner

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(57) **ABSTRACT**

A new and distinct cultivar of Artichoke plant named 'PS-MSC0041' characterized by having male sterility which is demonstrated by the absence of pollen on all florets during anthesis. The new cultivar has numerous, large, semi-glossy heads and thick, fleshy bracts and hearts. 'PS-MSC0041' shows uniformity of head shapes and a compact, reduced plant growth habit.

3 Drawing Sheets

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BACKGROUND OF THE INVENTION

The present invention comprises a new and distinct cultivar of artichoke plant, botanically known as *Cynara scolymus L.* and herein referred to by the cultivar name 'PS-MSC0041'.

Cynara scolymus L., commonly known as Globe artichoke, is a thistle-like perennial herb and is a member of the family Asteraceae. Globe artichokes comprise leaves which are pinnately lobed but primarily spineless, globose capitula composed of overlapping layers of large involucre bracts, and receptacles which are enlarged and fleshy. Globe artichoke plants may be propagated by division and are essentially grown for the production of the immature flower heads, which are considered as vegetable delicacies. Fresh artichokes may be steamed or boiled, after which the fleshy receptacle, inner and outer bracts, and parts of the floral stem may be eaten.

The new cultivar is a product of a planned breeding program carried out by the inventor, William J. Colfer at Chowchilla, Calif. 1996. 'PS-MSC0041' was discovered and selected within the progeny to open-pollinated proprietary cultivar MS2C-1 by the inventor, William J. Colfer.

Asexual reproduction of the new cultivar by division was performed by the inventor in Watsonville, Calif. in 1996, and has demonstrated that the combination of characteristics as herein disclosed for the new cultivar are firmly fixed and retained through successive generations of asexual reproduction.

BRIEF DESCRIPTION OF THE INVENTION

The following traits have been repeatedly observed and are determined to be basic characteristics of 'PS-MSC0041' which in combination distinguish the Artichoke as a new and distinct cultivar:

1. Male sterility which is demonstrated by the absence of pollen on all florets during anthesis;
2. Numerous, large, semi-glossy heads;
3. Thick, fleshy bracts and hearts;

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4. Uniformity of head shapes; and

5. Compact, reduced plant growth habit.

'PS-MSC0041' has not been observed under all possible environmental conditions. The phenotype of the new cultivar may vary with variations in environment such as temperature, humidity, light intensity and daylength, without any change in the genotype. The following observations, measurements and values describe the new cultivar as grown in Chowchilla, Calif. under conditions which closely approximate those generally used in horticultural practice.

Chowchilla is located in California's central San Joaquin valley. Conditions can vary greatly during the summer months. Air temperatures can range between the low 60's (F.) to temperatures well over 100° F. Relative humidity is generally low with values ranging from the mid 40's to the high 60's. Prevailing winds are westerly and rainfall averages rarely exceed 15" (inches) of rainfall.

In the following description, holding quality was measured by the physical appearance of the head. This includes the head's appearance following 3, 7, and 10-day storage periods in cold storage at 34° F. The head's exterior (oxidation) was observed at each of the three observation points. Browning and blackening of plant tissue was evaluated as light, moderate and extreme. Juiciness was measured by observing visible exudate and rated as absent, moderate-presence or excess. Overall storage response was measured by observing heads following 3, 7 and 10-day cold storage periods. These observations concentrated on visible color variability and/or presence of lesions or other cosmetic anomalies. Leaf ratio (L/W) was determined by dividing representative leaf sample lengths by their width. Finally, head response (weather) was determined by observing the heads at maturity. These field observations focus on the presence or absence of bronzing, necrotic or chlorotic lesions or any abiotic responses to environmental conditions. AFLP (DNA analysis was conducted on each parental selection.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying color photographic illustrations show typical fruit and foliage characteristics of a specimen plant of

'PS-MS0041', with colors being as true as possible with illustrations of this type.

The first drawing is a side elevational view of the fruit and foliage.

The second drawing is a close-up view of the fruit showing its physical dimensions.

The third drawings is close-up view showing a vertical cross-section of the fruit.

DETAILED BOTANICAL DESCRIPTION

The following observations, measurements, and values describe the new cultivar as grown in Chowchilla, Calif. The data was collected from first year tissue culture outplants. Selections were made in outdoor field settings. Plants are grown in the soil in rows. Row spacing (bed centers) is 38 inches, individual plant spacing varies between 12–36 inches, depending upon original seed germination. Stem segments were used to develop shoots which were transferred to a rooting medium for root development. These plants were then transplanted into the greenhouse for final plant growth and development. The date of first harvest is approximately May 15 and the date of final harvest is approximately June. 20.

Color references are measured against The Munsell Book of Color, Munsell Color Macbeth Division of Kollmorgen Corporation.

Parentage: 'PS-MS0041' was discovered and selected within the progeny of open-pollinated proprietary cultivar MS2C-1.

Classification: *Cynara scolymus* L., c.v. 'PS-MS0041'.

Propagation: Asexual production either by tissue culture using stem segments to develop shoots for root development or division.

Plant:

Height.—Approximately 81.92–99.06 cm.

Width.—Approximately 147.32–170.82 cm.

Form.—Full.

Growth habit.—Upright.

Plant vigor.—10.0 cm (2–3 leaves)–99.06 cm (20–26 leaves) from fall planting (mid October) to final harvest (following May).

Side shoots.—Number: Approximately 1–3. Development: Moderate. Length: 20.5–105.0 cm, average 72.67 cm. Diameter: 15.0–32.0 mm, average 24.83 mm. Color: Highly pubescent, color range: 2.5GY 8/14–2.5GY 8/6–2.5GY 7/6.

Foliage density.—Dense; increased density observed with increased side shoot development.

Main stem.—Length: 20.5–25.0 cm; average 22.6 cm. Diameter: 33.0–40.0 mm; average 37.17 mm. Leaves on main stem: Approximately 20–28, average 24.83. Color: Highly pubescent, color range: 2.5GY 8/4–2.5GY 8/6–2.5GY 7/6.

Capitulum:

Size.—Primary: Approximately 36.20–38.10 cm. Secondary: Approximately 33.66–35.56 cm.

Shape.—Oval; some shape variability observed as oval/spherical.

Number.—Approximately 3–11 per plant.

Texture.—Intermediate, smooth.

Fragrance.—Moderate, lightly aromatic.

Bract size.—Length: Approximately 8.2–9.5 cm.

Width: Approximately 4.6–6.1 cm.

Bract shape.—Predominantly oval-shaped.

Bract texture.—Smooth, slight texture.

Bract number.—Approximately 48–52 per head.

Bract color.—Inner: 7.5 Y 9/2–10 Y 9/1. Outer: 2.5 GY 9/2–5 GY 9/1.

Bract firmness.—Firm and fleshy with thick basal thickness.

Bract basal thickness.—Approximately 5.0–9.0 mm.

Heart description.—Concave, full, well-developed with thick bract connection.

Heart color.—7.5 Y 9/2–10 Y 9/2.

Pappus length.—Approximately 1.5–2.0 cm.

Pappus color.—7.5Y 9/2–10Y 9/2.

Overall cold storage response.—Good; stems slightly browned; no blackening visible.

Head firmness.—Firm, heads (capitula) are dense and solid.

Gloss.—Semi-gloss appearance which is distinct but not polished.

Cold storage (hold quality).—Good, heads remain firm and free of decay.

Head exterior (oxidation).—Moderate response; some tissue is slightly browned not blackened.

Juiciness.—Moderate presence, some exudate is visible following peduncle cut.

Head response (weather).—No adverse responses to weather conditions were observed on heads (capitula) or other plant tissues.

Bud burst.—April 1–April 10.

Bloom time.—Approximately May 20.

Duration of bloom.—Approximately 40–45 days.

Bloom diameter.—4.83–6.99 cm; average 5.74 cm.

Bloom depth.—8.26–10.8 cm; average 10.11 cm.

Bloom shape.—Head.

Bud weight.—Primary bud weight 470.2–481.3 grams, average 473.36 grams; secondary bud weight 432.7–450.45 grams, average 441.49 grams.

Foliage:

Shape.—Long strap-like leaves characterized by lobes that extend to the mid-vein, lobes are irregularly dentate.

Length.—Approximately 86.7–115.7 cm.

Width.—Approximately 40.2–79.7 cm.

Leaf serrations.—Approximately 7.6–15.7 cm.

Leaf basal angle.—Approximately 25–45 degrees.

Leaf ratio (L/W).—Approximately 1.1–2.28.

Leaf area.—Approximately 3541.62–8006.44 cm².

Upper leaf surface color.—Pubescent, color range: 5GY 4/2–5GY 4/4–5GY 3/6.

Lower leaf surface color.—Highly pubescent, color range: 5GY 7/2–5GY 6/2–5GY 5/2.

Texture.—Slightly but uniformly textured.

Venation.—Intermediate and greenish; mid-vein is light-green ranging between 5GY 7/6–5GY 6/6–5GY 6/4.

Pubescence.—Sparse, some visible pubescence on lower leaf surface.

Leaf basal thickness.—Approximately 14.0–23.0 cm.

Leaf distance between serrations.—Approximately 3.0–5.8 cm.

Petiole length.—Approximately 3.0–9.7 cm.

Petiole width.—Approximately 3.0–9.6 cm.

Petiole color.—Pubescent, color range: 2.5GY 8/6–2.5GY 7/6.

Seeds:

Shape.—Compressed ovoid, can be angular, mid-section asymmetrical.

Number.—1.0–15.0 seeds per head; average 5 seeds per head.

Length.—7.0–9.0 mm; average 8.0 mm.

Width.—3.0–5.0 mm; average 4.14 mm.

Color.—Gray, green, with tan and light brown hues in a speckled pattern.

Plant/bud disease resistance/susceptibility: Moderate infection of powdery mildew, *Leveillula taurica*, *Ramularia* spp. and *Alternaria* spp. leaf spot were noted; infection limited to the plant's lower canopy.

General observations: 'PS-MS0041' is made sterile lacking pollen on all florets during anthesis (flowering). Floret number ranges between 1106–1378 per head; with an

average of 1264 florets per head. 'PS-MS0041' plants exhibit moderate height ranging from 81–99 cm. Its glossy head, green coloration, thick fleshy bracts and heart (receptacle) all characterize this cultivar. These glossy heads (capitula) are large. 'PS-MS0041' produces an average size (12) primary, size (12–18) secondary and size (24–36) tertiaries. Head numbers range between 3–11 heads per plant.

Anthocyanin coloration is visible on both interior bracts and exterior lower bracts, color range: 7.5RP 5/4–7.5R 4/4. The head spinosity is reduced with average spine length of approximately 1–2 mm. The plants upright growth habit is intermediate and vigorous. The canopies' coloration is a medium green/yellow color ranging from medium to darker shades. These colors range on the Munsell Leaf Color Chart 5 GY 3/4–5 GY 4/4–5 GY 4/6–5 GY 4/8. These colors under drier field conditions can have a slight bluish hue. Leaf spinosity is moderate, categorized as few. Floral stalk development during anthesis produces a purple flower, color range: 10P 6/10–10/p 5/10–10P 5/12–2.5RP 5/12.

I claim:

1. A new and distinct cultivar of Artichoke plant named 'PS-MS0041', as described and illustrated.

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