



US00PP12937P2

(12) **United States Plant Patent**
Vandenberg

(10) **Patent No.:** **US PP12,937 P2**

(45) **Date of Patent:** **Sep. 10, 2002**

(54) **CHRYSANTHEMUM PLANT NAMED**
'BRONZE CENTELLA'

(75) **Inventor:** **Cornelis P. Vandenberg**, Salinas, CA
(US)

(73) **Assignee:** **Yoder Brothers, Inc.**, Barberton, OH
(US)

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 49 days.

(21) **Appl. No.:** **09/756,359**

(22) **Filed:** **Jan. 9, 2001**

(51) **Int. Cl.⁷** **A01H 5/00**

(52) **U.S. Cl.** **Plt./286**

(58) **Field of Search** **Plt./286, 295, 296,**
Plt./298

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,616,099 A * 10/1986 Sparkes 47/58

OTHER PUBLICATIONS

Shukla, et al., 1993, "Mutation studies on early and late
varieties of garden chrysanthemums", *J. Nuclear Agric.*
Biol., 22(3-4): 138-142.*

Broertjes, et al., 1980, "A mutant of a mutant of a . . .
Irradiation of progressive radiation induced mutants in a
mutation breeding programme with *Chrysanthemum mori-*
folium", *Euphytica* 29:525-530.*

Gosling, ed., 1979, "The Chrysanthemum Manual—6th edi-
tion", The National Chrysanthemum Society, London, Essex
Telegraph Press, Ltd., pp. 329-336.*

Broertjes, et al., 1978 "Application of Mutation Breeding
Methods in the Improvement of Vegetatively Propagated
Crops", Elsevier Sci. Pub. Co., New York, pp. 162-175.*

Searle, et al., 1968, "Chrysanthemums The Year Round",
Blanford Press, London, pp. 27-29, 320-327.*

Chan, 1966, "Chrysanthemum and rose mutations induced
by x-rays," *Am Soc. Hort. Sci. Proc.*, pp. 613-620.*

Broertjes, 1966, "Mutation breeding of chrysanthemums",
Euphytica, 15: 156-162.*

Dowrick, et al., 1966, "The induction of mutations in
Chrysanthemum using x- and gamma radiation", *Euphytica*,
15:204-210.*

* cited by examiner

Primary Examiner—Howard J. Locker

(74) *Attorney, Agent, or Firm*—C. A. Whealy

(57) **ABSTRACT**

A distinct cultivar of Chrysanthemum plant named 'Bronze
Centella', characterized by its daisy-type inflorescences that
are about 3.75 cm in diameter; attractive yellow and red ray
and bright yellow disc florets; very freely flowering habit
with numerous inflorescences per stem; early flowering,
response time about 51 days; dark green foliage; strong
stems; and good postproduction longevity with inflores-
cences maintaining good substance and color for about three
weeks in an interior environment.

2 Drawing Sheets

1

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct cultivar
of Chrysanthemum plant, botanically known as *Chrysan-*
themum x morifolium and hereinafter referred to by the name
'Bronze Centella'.

The new Chrysanthemum is a product of a mutation
induction breeding program conducted by the Inventor in
Salinas, Calif. The objective of the program is to create new
Chrysanthemum cultivars with desirable inflorescence form
and floret colors, good substance, and good postproduction
longevity.

The new Chrysanthemum is a naturally-occurring whole
plant mutation of a proprietary induced mutation that origi-
nated by exposing unrooted cuttings of the Chrysanthemum
cultivar Centella, disclosed in U.S. Plant Pat. No. 11,793, to
X-ray radiation. The new Chrysanthemum was discovered
and selected by the Inventor as a single flowering plant
within a population of plants of the irradiated selection in
April, 1997, in Salinas, Calif. The selection of this plant was
based on its desirable inflorescence form and floret colors
and good postproduction longevity.

Asexual reproduction of the new Chrysanthemum by
terminal cuttings taken in a controlled environment in Sali-
nas, Calif., has shown that the unique features of this new

2

Chrysanthemum are stable and reproduced true to type in
successive generations.

SUMMARY OF THE INVENTION

The cultivar Bronze Centella has not been observed under
all possible environmental conditions. The phenotype may
vary somewhat with variations in environment such as
temperature, daylength and light intensity, without,
however, any variance in genotype.

The following traits have repeatedly observed and are
determined to be the unique characteristics of 'Bronze
Centella'. These characteristics in combination distinguish
'Bronze Centella' as a new and distinct cultivar:

1. Daisy-type inflorescences that are about 3.75 cm in diameter.
2. Attractive yellow and red-colored ray florets and bright yellow-colored disc florets.
3. Very freely flowering with numerous inflorescences per stem.
4. Early flowering, response time is about 51 days.
5. Dark green foliage.
6. Strong and thick stems.

7. Good postproduction longevity with inflorescences maintaining good substance and color for about three weeks in an interior environment.

Plants of the new *Chrysanthemum* differ from plants of the cultivar *Centella* primarily in ray floret color as plants of the cultivar *Centella* have golden yellow-colored ray florets.

BRIEF DESCRIPTION OF THE PHOTOGRAPHS

The accompanying colored photographs illustrate the overall appearance of the new *Chrysanthemum*, showing the colors as true as it is reasonably possible to obtain in colored reproductions of this type. Colors in the photographs may differ slightly from the color values cited in the detailed botanical description which accurately describe the colors of the new *Chrysanthemum*.

The photograph on the first sheet comprises a side perspective view of a typical flowering stem of 'Bronze Centella' grown as a spray-type cut *Chrysanthemum*.

The photograph on the second sheet comprises a close-up view of typical inflorescences of 'Bronze Centella'.

DETAILED BOTANICAL DESCRIPTION

In the following description, color references are made to The Royal Horticultural Society Colour Chart except where general terms of ordinary dictionary significance are used. The following observations and measurements describe plants grown in Salinas, Calif., under conditions which approximate commercial practice in a double-layer polyethylene-covered greenhouse. Two-week old rooted cuttings were planted on Feb. 10, 2000 and received 18 long day/short nights followed by short day/long nights until flowering. Plants were grown as single-stem cut chrysanthemums. During the production time, the following environmental conditions were measured: day temperatures, 18 to 27° C.; night temperatures, 16 to 18° C.; and light levels, 2,000 to 4,000 foot-candles. Measurements and numerical values represent averages for six to ten typical flowering stems and were taken during the week of Apr. 30, 2000.

Botanical classification: *Chrysanthemum* × *morifolium* cultivar Bronze Centella.

Commercial classification: Daisy spray-type cut *Chrysanthemum*.

Parentage: Naturally-occurring whole plant mutation of a proprietary *Chrysanthemum* × *morifolium* induced mutation, not patented.

Propagation:

Type.—Terminal tip cuttings.

Time to rooting.—Seven to ten days with soil temperatures of 21° C.

Root description.—Fine, fibrous and well-branched.

Plant description:

Appearance.—Herbaceous daisy spray-type cut flower.

Flowering stem description.—Aspect: Erect. Length: About 91.4 cm. Spray width: About 14.5 cm. Diameter: About 6 mm. Internode length: About 2.1 cm. Texture: Pubescent. Color: 146A.

Foliage description.—Arrangement: Alternate. Length: About 7.4 cm. Width: About 5.2 cm. Apex: Cuspidate to mucronate. Base: Mostly truncate. Margin: Palmately lobed; sinuses parallel to divergent. Texture: Upper and lower surfaces pubescent. Veins prominent on lower surface. Color: Young foliage upper surface: Darker than 147A. Young foliage lower surface: Darker than 147B. Mature foliage

upper surface: 147A; venation, 147A to 147B. Mature foliage lower surface: Close to 147B; venation, close to 146B. Petiole: Length: About 1.8 cm. Diameter: About 3 mm. Color: 147B to 147C.

Flowering description:

Appearance.—Daisy spray-type inflorescence form with elongated oblong-shaped ray florets. Inflorescences borne on terminals, arising from leaf axils. Disc and ray florets arranged acropetally on a capitulum.

Flowering response.—Under natural conditions, plant flowers in the autumn/winter in the Northern Hemisphere. At other times of the year, inflorescence initiation and development can be induced under short day/long night conditions (at least 13.5 hours of darkness). Plants exposed to two to three weeks of long day/short night conditions after planting followed by photoinductive short day/long night conditions flower about 51 days later.

Postproduction longevity.—In an interior environment, flowering stems will maintain good color and substance for about three weeks in an interior environment after one week of cool storage.

Quantity of inflorescences.—Freely flowering with about 16 inflorescences per flowering stem.

Inflorescence size.—Diameter: About 3.75 cm. Depth (height): About 1.2 cm. Diameter of disc: About 1.5 cm. Diameter of receptacle: About 5 mm.

Ray florets.—Shape: Elongated oblong. Length: About 1.8 cm. Width: About 6 mm. Apex: Mammillate or emarginate. Base: Attenuate. Margin: Entire. Texture: Smooth, velvety, glabrous; longitudinally ridged. Aspect: Somewhat concave. Aspect: Initially upright; when mature, about 90° from vertical. Number of ray florets per inflorescence: About 24 arranged in one or two rows. Color: When opening, upper surface: Yellow ground color, close to 9A; overlain with dark red, close to 46A; red coloration most prominent towards floret base. When opening, lower surface: Yellow ground color, close to 9A to 9B, underlain with dark red, close to 46A to 53A; red coloration most prominent towards floret base. Mature, upper surface: Yellow ground color, close to 9A; overlain with dark red, close to 46A; red coloration most prominent towards floret base and becoming faint with subsequent development. Mature, lower surface: Yellow ground color, close to 9A to 9B, underlain with dark red, close to 46A to 53A; red coloration most prominent towards floret base.

Disc florets.—Shape: Tubular, slightly flared at apex. Length: About 6 mm. Width: Apex: About 1.5 mm. Base: About 1 mm. Number of disc florets per inflorescence: Numerous, typically about 148. Color: Immature: Apex: Initially dark burgundy red, 187A, then becoming green, 144A, with subsequent development. Mid-section: Close to 144C. Base: 155D. Mature: Apex: 9A. Mid-section: Close to 144C. Base: 155D.

Peduncle.—Strength: Strong. Aspect: Angled about 50° from vertical. Length: First peduncle: About 5.7 cm. Fourth peduncle: About 8.4 cm. Seventh peduncle: About 10.6 cm. Diameter: About 3 mm. Texture: Very fine pubescence. Color: 144A.

Reproductive organs.—Androecium: Present on disc florets only. Anther color: 9A. Pollen: None observed. Gynoecium: Present on both ray and disc florets.

Seed.—Seed production has not been observed.

Disease resistance: Resistance to pathogens common to Chrysanthemums has not been observed on plants grown under commercial conditions.

Temperature tolerance: Plants of the new Chrysanthemum have demonstrated good tolerance to night temperatures as low as 5° C. and day temperatures as high as 40° C.

It is claimed:

1. A new and distinct cultivar of Chrysanthemum plant named 'Bronze Centella', as illustrated and described.

* * * * *



