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**United States Patent** [19]**VandenBerg**[11] **Patent Number:** **Plant 8,473**[45] **Date of Patent:** **Nov. 23, 1993**[54] **CHRYSANTHEMUM PLANT NAMED DEEP PASION**[75] **Inventor:** **Cornelis P. VandenBerg, Salinas, Calif.**[73] **Assignee:** **Yoder Brothers, Inc., Barberton, Ohio**[21] **Appl. No.:** **920,420**[22] **Filed:** **Jul. 27, 1992**[51] **Int. Cl.<sup>5</sup>** ..... **A01H 5/00**[52] **U.S. Cl.** ..... **Plt./80**[58] **Field of Search** ..... **Plt./76, 80, 81**[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

A Chrysanthemum plant named Deep Pasion particularly characterized by its flat capitulum form; decorative capitulum type; red-purple ray floret color, with a darker center of the flower; diameter across face of capitulum of 67 to 73 mm when fully opened, when grown as a single stem spray cut mum; photoperiodic flowering response to short days when grown in Salinas, Calif., is 52 to 57 days after start of short days; flowering response in Bogota, Colombia is 63 to 67 days; plant height is 79 to 114 when grown in Salinas with 17 to 18 long days prior to start of short days; height is 109 to 127 cm when grown in Bogota with 21 long days prior to start of short days; peduncle length of the first lateral at flowering after removing the apical bud without growth regulator applications is 3 to 8 cm when grown in Salinas, and 3 to 5 cm when grown in Bogota; peduncle length of the fourth lateral at flowering is 8 to 13 cm when grown in Salinas, and 8 to 13 cm when grown in Bogota; and excellent tolerance to minimum low night temperatures of 7° C. for bud initiation and flower development.

**1 Drawing Sheet****1**

The present invention comprises a new and distinct cultivar of Chrysanthemum, botanically known as *Dendranthema grandiflora*, and referred to by the cultivar name Deep Pasion.

Deep Pasion, identified as 0701 (85-251F01), is a product of a mutation induction program. The new cultivar was discovered and selected by Cornelis P. VandenBerg on Jan. 30, 1990, in a controlled environment in Salinas, Calif., as one flowering plant within a flowering block established as rooted cuttings from stock plants which had been exposed as unrooted cuttings to an X-ray source of 1500 rads in Fort Myers, Fla., on Jul. 27, 1989. The irradiated parent cultivar was the cultivar identified as Pasion, disclosed in U.S. Plant Pat. No. 7,489. Pasion is described as a decorative spray cut mum with a flat capitulum form; a light red-purple ray floret color, with a darker red-purple center of the flower; diameter across face of capitulum of 63 to 76 mm when fully opened; flowering response period of 50 to 58 days after start of short days in Salinas, Calif., and of 63 to 70 days in Bogota, Colombia; plant height of 79 to 107 cm when grown in Salinas with 14 to 18 long days prior to start of short days, and of 117 to 130 cm when grown in Bogota with 20 to 21 long days prior to start of short days; and excellent tolerance to low night temperatures for bud initiation and flower develop-

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ment. The above description of Pasion has a wider range of measurements than the description of Pasion in U.S. Plant Pat. No. 7,489. This is based on the continued flowering trials of Pasion after preparing the plant patent application for Pasion. Pasion was commercially introduced in July 1990.

The irradiation program resulting in Deep Pasion had as its primary objective the expansion of color ranges of the parent cultivar Pasion. The irradiation program comprised irradiating cuttings of the parent cultivar at irradiation levels of 1500, 1750 and 2000 rads. A total of 1149 cuttings harvested from a total of 225 irradiated plants were planted on Nov. 6, 1989, Oct. 23, 1989 and Oct. 2, 1989, respectively. Of these, 13 initial selections were made, which selections were then revegetated and reflowered. Three consecutive flowerings resulted in discarding 8 of the original 13 selections on Nov. 1, 1990, while five codes (plants) were retained as PI (Possible Introduction) status. The five retained codes were further tested in Salinas, Calif., and in Bogota, Colombia, ultimately resulting in discarding two of these codes, and the decision to introduce code 0701 as Deep Pasion, code 0626 as Soft Pasion, and code 0620 as Bronze Pasion. Soft Pasion and Bronze Pasion are disclosed in pending applications of applicant.



The first act of asexual reproduction of Deep Pasion was accomplished when vegetative cuttings were taken from the original selection in April 1990 in a controlled environment in Salinas, Calif., by technicians working under supervision of Cornelis P. VandenBerg.

Horticultural examination of controlled flowerings of successive plantings has shown that the unique combination of characteristics as herein disclosed for Deep Pasion are firmly fixed and are retained through successive generations of asexual reproduction.

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

The following observations, measurements and comparisons describe plants grown in Salinas, Calif., and in Bogota, Colombia, under greenhouse conditions which approximate those generally used in commercial greenhouse practice. The low night temperature tolerance was determined in repeated flowerings in Bogota, Colombia.

The following traits have been repeatedly observed and are determined to be basic characteristics of Deep Pasion, which, in combination, distinguish this Chrysanthemum as a new and distinct cultivar:

1. Flat capitulum form.
2. Decorative capitulum type.
3. Red-purple ray floret color with a darker center of the flower.
4. Diameter across face of capitulum of 67 to 73 mm when fully opened, when grown as a single stem spray cut mum.
5. Photoperiodic flowering response to short days when grown in Salinas, Calif., is 52 to 57 days after start of short days. Flowering response in Bogota, Colombia is 63 to 67 days.
6. Plant height is 79 to 114 cm when grown in Salinas with 17 to 18 long days prior to start of short days; height is 109 to 127 cm when grown in Bogota with 21 long days prior to start of short days.
7. Peduncle length of the first lateral at flowering after removing the apical bud without growth regulator applications is 3 to 8 cm when grown in Salinas, and 3 to 5 cm when grown in Bogota. Peduncle length of the fourth lateral at flowering is 8 to 13 cm when grown in Salinas, and 8 to 13 cm when grown in Bogota.
8. Excellent tolerance to minimum low night temperatures of 7° C. for bud initiation and flower development.

The accompanying photographic drawing is a side view of a single stem cut spray mum of Deep Pasion, with the colors being as nearly true as possible with illustrations of this type.

Of the commercial cultivars known to the inventor, the most similar in comparison to Deep Pasion is the parent cultivar Pasion. All traits of Deep Pasion are similar to those of Pasion, except for the ray floret

color, the flowering response, and the plant height. Deep Pasion has red-purple ray floret color which is significantly darker than the ray floret color of Pasion, while still maintaining the darker center of the flower.

- 5 In our flowering trials, Deep Pasion has been one to three days slower in flowering response to short days when compared with Pasion, and has been shorter by 3 to 8 cm. The diameter of capitulum of Deep Pasion has been 3 to 6 mm less than Pasion. In a recent trial in
- 10 Colombia, Deep Pasion had an average of one flower less per stem in comparison with Pasion.

- 15 In the following description color references are made to the Royal Horticultural Society Colour Chart. The color values were determined on plant material grown as a single stem spray cut mum in Salinas, Calif. on Dec. 31, 1991.

#### CLASSIFICATION

*Botanical.*—*Dendranthema grandiflora* cv Deep Pasion.

*Commercial.*—Flat decorative cut spray mum.

#### INFLORESCENCE

- A. Capitulum:
  - Form.*—Flat.
  - Type.*—Decorative.
  - Diameter across face.*—67 to 73 mm when fully opened.
- B. Corolla of ray florets:
  - Color (general tonality from a distance of three meters).*—Red-purple, with a darker center of the flower.
  - Color (upper surface).*—65B to 65D. Inner ray florets closest to 64D.
  - Color (under surface).*—65C to 65D.
  - Shape.*—Straight, oblong, slightly ribbed.
- C. Corolla of disc florets:
  - Color (mature).*—Closest to 12A.
  - Color (immature).*—Closest to 144B.
- D. Reproductive organs:
  - Androecium.*—Present on disc florets only; no pollen.
  - Gynoecium.*—Present on both ray and disc florets.

#### PLANT

- A. General appearance:
  - Height.*—79 to 114 cm when grown in Salinas with 17 to 18 long days prior to start of short days; height is 109 to 127 cm when grown in Bogota with 21 long days prior to start of short days.
- B. Foliage:
  - Color (upper surface).*—147A.
  - Color (under surface).*—147B.

I claim:

1. A new and distinct Chrysanthemum plant named Deep Pasion, as described and illustrated.

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**U.S. Patent**

**November 23, 1993**

**Plant 8,473**

