



US00PP36761P3

(12) **United States Plant Patent**
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(10) **Patent No.:** **US PP36,761 P3**

(45) **Date of Patent:** **Jun. 24, 2025**

(54) **CANNABIS PLANT NAMED ‘PTC8506V’**

(50) Latin Name: *Cannabis sativa*
Varietal Denomination: **PTC8506V**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **18/643,930**

(22) Filed: **Apr. 23, 2024**

(65) **Prior Publication Data**

US 2024/0381800 P1 Nov. 14, 2024

(51) **Int. Cl.**
A01H 5/00 (2018.01)
A01H 6/28 (2018.01)

(52) **U.S. Cl.**
USPC **Plt./258**
CPC **A01H 6/28** (2018.05)

(58) **Field of Classification Search**
USPC **Plt./258**
See application file for complete search history.

(56) **References Cited**

PUBLICATIONS

UPOV-PLUTO citation for ‘PTC8506V’. retrieved from UPOV on Oct. 20, 2024. <https://pluto.upov.int/result>. 1 page. (Year: 2023).*

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(57) **ABSTRACT**

A new and distinct variety of *Cannabis sativa* designated ‘PTC8506V’ as herein described and illustrated, characterized by elevated levels of THCv.

1 Drawing Sheet

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Genus/species: *Cannabis sativa*.
Variety denomination: ‘PTC8506V’.

BACKGROUND

Cannabis plants contain over a hundred known cannabinoids, which bind to endogenous endocannabinoid receptors. Varinolic cannabinoids, as known as varins, are a type of cannabinoid compounds having three carbon atoms in their alkyl side chain instead of the five carbon atom alkyl side chains more commonly associated with cannabinoids. Two such varins are tetrahydrocannabivarin (THCV) and cannabidivarin (CBDV), which are homologues of tetrahydrocannabinol (THC) and cannabidiol (CBD), respectively. Each varin has a unique pharmacological profile and distinct molecular targets.

THCV and CBDV have potential benefits across a broad set of applications. *Cannabis* plants or extracts with high THCv levels, for example, can be used as an agent for anticonvulsant activity, obesity-associated glucose intolerance, appetite suppression, anxiety management for PTSD, diabetic neuropathy, and major neuropathic and pain related pathologies. Another THCv application is that of an appetite suppressing compound. CBDV has been shown to have anti-epileptic and anticonvulsant activity.

Research and development as well as the sale of varin products has been limited due to low commonly occurring levels of varins in *Cannabis* flower. The ability to produce *Cannabis* with high varin levels will create a platform for a new Cannabinoid category with differentiated, high margin products in both medical and recreational markets. The present application solves these problems by providing a

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novel *Cannabis* plant having high THCv, which is referred to by the variety name ‘PTC8506V’.

SUMMARY

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The new variety of *Cannabis sativa* was created by sourcing *Cannabis* plants that produce THCv and THC. Crosses were conducted to elevate further THCv, THC and/or other varins. All breeding, cultivation, and chemotype analyses were conducted in Hillsboro, Oregon. ‘PTC8506V’ resulted from the cross of a high THC pollen receiver plant (‘21GAQ-1271’, unpatented) and a high THCv pollen donor plant (‘21VLP5-1-102’, unpatented). ‘21GAQ-1271’ is a clonal variety with a THC content of 22.2%, and a THCv content below the limit of detection (LOD). ‘21GAQ-1271’ has greenish-purple flowers with heavy trichome coverage, moderate density, and strong aroma. ‘21GAQ-1271’ has an upright plant growth habit with moderately long internodes and matures in 8-9 weeks. ‘21VLP5-1-102’ had a THC content of 1.2%, and THCv content of 5.66%. ‘21VLP5-1-102’ flowers are greenish-purple with low trichome coverage, very low density, and moderately weak aroma. ‘21VLP5-1-102’ has a moderately wide plant growth habit with very long internodes and matures in 10-12 weeks. A clone of ‘21VLP5-1-102’ was crossed onto a clone of ‘21GAQ-1271’ in 2021. 32 of the resulting F1 seed were sown. ‘PTC8506V’ was discovered and selected as a single plant from this F1 seed and was subsequently propagated clonally in Hillsboro, OR. ‘PTC8506V’ was asexually reproduced by apical and sub-apical semi-herbaceous stem cuttings in Hillsboro, Oregon for eight cycles. Asexual reproduction has demonstrated that ‘PTC8506V’ reproduces true to type with all of the charac-

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teristics, as herein described, and firmly fixed and retained through successive generations of asexual propagation.

The new variety is named ‘PTC8506V’ and is characterized as having elevated levels of THCV. In comparison to its parents, ‘PTC8506V’ has higher THCV (relative to either parent), and higher THC relative to the pollen donor plant. ‘PTC8506V’ can additionally be distinguished from either parent at least based on the characteristics provided in Table 1.

TABLE 1

Comparison to Parent Varieties.						
Variety	Trichome Coverage	Aroma Strength	Aroma Type	Growth Habit	Internode	Maturity Time
‘21GAQ-1271’	Heavy	Strong	Sweet cookies, earth, garlic	Upright	Moderately long	8-9 weeks
‘21VLP5-1-102’	Low	Moderately weak	Grass, earth, citrus	Moderately wide	Long	10-12 weeks
‘PTC8506V’	Moderate	Moderately strong	Pine, earth, fuel, and a slight fruitiness	Upright	Moderately long	8-10 weeks

BRIEF DESCRIPTION OF THE PHOTOGRAPH

FIG. 1 is a photograph of a flowering plant of ‘PTC8506V’ that is approximately 83 days old, growing in Hillsboro, Oregon.

DETAILED BOTANICAL DESCRIPTION

The following is a detailed description of the new *Cannabis* variety ‘PTC8506V’. Unless otherwise indicated, all color designations provided herein are hex color codes.

All breeding, cultivation, and chemotype analyses were conducted in Hillsboro, Oregon.

Cannabis plants having elevated THCV or THC levels were sourced and obtained, and crosses were conducted to produce new varieties to further elevate THCV and THC levels. The plants were crossed to produce new varieties having elevated THCV and THC levels. Plant variety ‘PTC8506V’ was selected and asexually reproduced.

Table 2 describes the general characteristics of ‘PTC8506V’ at 55 days after lighting was changed to 12 hours on/12 hours off.

TABLE 2

Plant life forms	An herbaceous plant (herb)
Plant growth habit	An upright, tap-rooted annual plant, forming fibrous roots when asexually propagated
Plant origin	A controlled cross between pollen acceptor (‘21GAQ-1271’) and pollen donor plant (‘21VLP5-1-102’).
Plant propagation	Asexually propagated by apical and sub-apical semi-herbaceous stem cuttings

TABLE 2-continued

Propagation Ease	Easy
Plant shape	Simple erect
Height	117 cm to 121 cm
Width	87 cm to 101 cm
Time to harvest	10-12 weeks
Resistance to pests or diseases	Unknown
GMO?	No

Table 3 describes the leaf/foliage of ‘PTC8506V’. Color codes are hex color codes.

TABLE 3

15 Leaf Arrangement	Alternate
Leaflet Type	Palmately compound
Leaflet Structure	Serrated margins, lightly acicular to lanceolate leaflets, tapering to an acuminate apex
Leaflet Margins	Jaggedly serrate with each tooth apex angled toward leaflet apex
20 Leaf hairs	Present on both upper and lower surfaces
Leaf length with petiole at maturity	18.5 cm to 23 cm
Petiole length at maturity	6 cm to 9.5 cm
25 Petiole diameter at maturity	1.9 mm to 2.5 mm
Petiole color	#6B4247
Anthocyanin color and intensity in Petioles	#F9CCCS. Medium intensity in vegetative stage; stronger in flowering stage
30 Stipule length at maturity	6.2 mm to 6.8 mm
Stipule shape	Linear with slight curvaceous growth
Stipule color	#3C4D03
No. of leaflets	3 to 7
Middle largest (longest) leaflet length	12 cm to 17.5 cm
35 Middle largest (longest) leaflet width	2.5 cm to 3.1 cm
Middle largest (longest) leaflet length/width ratio	3.8 to 4.8
No. teeth of middle leaflet	28 to 34
Leaf (upper side-adaxial) color	#35530A
40 Leaf (lower side-abaxial) color	#35530A
Leaf glossiness	Matte
Vein/midrib shape	Obliquely continuous throughout leaflet
Vein/midrib color	#E6DAA6
Aroma	Earthy notes of pine, fuel, and a slight fruitiness

Table 4 describes the stem of ‘PTC8506V’.

TABLE 4

50 Stem shape	Hollow, ribbed, texture
Stem length	117 cm to 121 cm
Stem strength	Strong and upright
Stem diameter at base	13.6 mm to 14.5 mm
Stem color	#373E02
55 Depth of main stem ribs/grooves	Shallow
Internode length	3 cm to 9.5 cm

Table 5 describes the inflorescence of ‘PTC8506V’.

TABLE 5

60 Inflorescence type	Elongated compound cymes
Flowering (blooming) habit	Natural flowering season is Autumn in Hillsboro, Oregon.
Proportion of female plants	100% pistillate
65 Inflorescence position	Terminal and axillary

TABLE 5-continued

Number of inflorescences produced per plant	100 to 150	
Flower arrangement	Cymose	
Length of inflorescences	3 cm to 3.8 cm	5
Numbers of flowers per plant	Hundreds to thousands flowers per plant, multitudinous, congested with high concentrations on bushier wide inflorescence	
Flower shape	Urceolate	
Flower (individual pistillate) length	5.1 mm to 5.3 mm	10
Flower (individual pistillate) depth	2 mm	
Flower (compound cyme) diameter	5.5 cm to 8 cm	
Corolla	No defined corolla	15
Corolla color	N/A	
Bract shape	Urceolate	
Bract color	#4B5D16	
Typical bract numbers	3 to 200 bracts per inflorescence.	
Bract length	3 mm to 5mm	20
Bract width	2.3 mm to 2.7 mm	
Bract apex and base description	Bracts have a rounded base and caudate apex.	
Bract Texture	Bract texture is smooth and covered with sticky trichomes.	
Bracteole number, shape, length, width, apex, margin, base descriptors, texture, and color	Bracteoles are not present	25
Calyx shape	No defined calyx	
Calyx color	N/A	
Pistil number per flower	One	
Pistil color	Pistil consists of the stigma, style, and ovary and cannot be given a single color.	30
Stigma shape	Acute	
Number of stigmas per flower	Two	
Stigma length	4.6 mm to 6.5 mm	
Stigma color	#373E02	35
Trichome shape	Capitate-stalked glandular	
Trichome color	#F1E7E2	
Terminal inflorescence shape	Oblong	
Terminal inflorescence color	#B7E1A1	
Terminal inflorescence length	12.5 cm to 14 cm	
Terminal inflorescence width	5 cm to 6.5 cm	40
Pedicel	Absent	
Peduncle length	6.8 mm	
Peduncle diameter	4.1 mm	
Peduncle texture	Lightly ribbed	
Peduncle color	#9BB53C	
Staminate shape	No staminate flowers produced naturally; however, male flower (staminate) can be induced with stress or ethylene-blocking compounds	45
Sepal color	N/A	
Pollen description	N/A	50
Petal description	Apetalous	

Table 6 describes other characteristics of 'PTC8506V'

TABLE 6

Time period and condition of flowering/blooming	8 to 10 weeks
Proportion of hermaphrodite plants	Lower (<5%) in clones
Hardiness of plant	Hardy to tolerate of warm and dry conditions without showing stress. Not tolerant to soil oversaturated with water for long periods

Chemical analyses were conducted using High Performance Liquid Chromatography to detect the cannabinoids described herein. Table 7 describes a chemotype analysis of 'PTC8506V', which was chemotyped by taking a sample from the main cola at day 56 after initiation of the 12:12 light cycle, which initiates flowering. Trichomes were 70% cloudy and 5% amber, indicative of full maturity at sampling.

TABLE 7

Cannabinoid and other chemicals	% wt
Total THC	4.613
Total THCV	11.067
Total CBG	0.047
Total CBD	<LOD
Total CBC	<LOD
Total CBGV	<LOD
Total CBDV	<LOD
alpha-Pinene	0.057
Camphene	0.011
beta-Myrcene	1.557
beta-Pinene	0.098
delta-3-Carene	<LOQ
alpha-terpinene	<LOQ
D-Limonene	0.211
beta-Ocimene	0.275
p-Cymene	<LOQ
Eucalyptol	<LOQ
gamma-Terpinene	<LOQ
Terpinolene	<LOQ
Linalool	0.003
Isopulegol	<LOQ
Geraniol	<LOQ
beta-Caryophyllene	0.05
alpha-Humulene	0.0227
Nerolidol 1	<LOQ
Nerolidol 2	0.011
Guaiol	<LOQ
Caryophyllene Oxide	0.011
alpha-Bisabolol	0.026
Total Terpenes	2.315

What is claimed is:

1. A new and distinct variety of *Cannabis sativa* designated 'PTC8506V' as herein described and illustrated.

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