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Piriz

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(54) **RASPBERRY PLANT NAMED ‘R15-21-5’**

CPC A01H 5/0887
See application file for complete search history.

(50) Latin Name: *Rubus idaeus* L.
Varietal Denomination: **R15-21-5**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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PP25,245 P3 1/2015 Pierron-Darbonne

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OTHER PUBLICATIONS

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

PLUTO UPOVROM Plant Variety Database Sep. 24, 2020 Citation
as per QZ PBR 20180640; Mar. 2, 2018; 1 page.*

Community Plant Variety Office (CPVO) Application/Registration
No. 2018/0640, filed in the European CPVO on Mar. 1, 2018, and
publicly available on Jun. 15, 2018.

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* cited by examiner

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Primary Examiner — Kent L Bell

(65) **Prior Publication Data**

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(51) **Int. Cl.**
A01H 5/08 (2018.01)
A01H 6/74 (2018.01)

(57) **ABSTRACT**

The present invention provides a new and distinct raspberry
plant designated as ‘R15-21-5’. The new raspberry cultivar
is distinguished from other cultivars by its combination of
traits which include very early production on primocanes,
branching habit, large light red colored fruit, trapezoidal
shaped and fruits suitable for fresh consumption.

(52) **U.S. Cl.**
USPC **Plt./204**
CPC *A01H 6/7499* (2018.05)

(58) **Field of Classification Search**
USPC Plt./204

10 Drawing Sheets

1

2

Latin name of the genus and species: *Rubus idaeus* L.
Varietal denomination: ‘R15-21-5’.

**CROSS REFERENCE TO RELATED
APPLICATIONS**

This application relates to Community Plant Variety
Office (CPVO) Application/Registration Number 2018/
0640, filed in the Europe on Mar. 1, 2018, and the National
Service of Certification and Identification of Seeds (SNICS)
Application/Registration Number CP-2373, filed in the
Mexico on Jun. 28, 2019, both applications of which are
herein entirely incorporated by reference for all purposes.

BACKGROUND OF THE INVENTION

The present invention relates to a new and distinct pri-
mocane raspberry variety designated as ‘R15-21-5’.

‘R15-21-5’ was obtained from seed produced by bees
pollination of seedlings and was first fruited in Gibraleón
(Huelva, Spain) growing fields in 2015. From the seedling
and during testing, the plant was designated ‘R15-21-5’.
Seed female parent ‘R14-21’ (SD.10.82.6 x ‘Tulameen’)
was an unpatented seedling grown in a controlled area with
other seedlings and selected for its combination of favorable
characteristics on primocane production. The male parent is
unknown.

The new variety ‘R15-21-5’ was asexually propagated by
root cuttings in a controlled environment at Gibraleón,
Huelva, Spain. Asexual propagules from the original source
have been tested in Cartaya, Moguer and Palos de la
Frontera (Huelva, Spain) growing fields and to a limited
extent. The properties of this variety were found to be
transmissible by such asexual reproduction. This cultivar is
stable and reproduces true to type in successive generations
of asexual reproduction.

SUMMARY OF THE INVENTION

This invention concerns a new and distinct cultivar of
primocane raspberry variety. The varietal denomination of
the new variety is ‘R15-21-5’. The new raspberry cultivar
‘R15-21-5’ is distinguished from other cultivars by its com-
bination of traits which include very high production from
October to January on primocanes and from April to June on
floricanes; semi-upright branched plant; the vigour of the
plant is medium-high, the fruit color is light red, trapezoidal-
shaped, firm fruit and large size. The cultivar shows a very
early cropping season production in protected culture.

BRIEF DESCRIPTION OF THE DRAWING

The accompanying colour photographs and traits show
typical specimens of the new cultivar at various stages of

development as nearly true as it is possible to make in colour reproductions. The pictures were taken during 2018 in Huelva, Spain.

FIG. 1 shows plant habit, 140 days after planting date.

FIG. 2 shows current season's cane, 140 days after planting date.

FIG. 3 shows the upperside leaves.

FIG. 4 shows the downside leaves.

FIG. 5 shows the upperside flowers.

FIG. 6 shows the downside flowers.

FIG. 7 shows the whole fruit on plant, 140 days after planting date.

FIG. 8 shows the fruit in longitudinal cross-section, 140 days after planting date.

FIG. 9 shows the upperside and downside leaves of 'R15-21-5' compared with other commercial varieties.

FIG. 10 shows cane of 'R15-21-5' compared with other commercial varieties 140 days after planting date.

DETAILED DESCRIPTION OF THE INVENTION

This invention relates to a new and distinctive primocane raspberry cultivar named 'R15-21-5'.

'R15-21-5' is a semi-upright, medium-high vigorous plant with some branches that produces large fruit size, light red colored and trapezoidal shape.

Fruit production season is much earlier than other cultivars when grown in protected culture, this allows large quantities of fruits in winter and early spring. Fruit is easily removed from its receptacle, with adequate width of the cavity, and easily visible on branches.

'R15-21-5' has not been noted to be sensitive to any pest in Huelva (Spain). Specifically, it is relatively tolerant to aphids and spider mites.

Plants of 'R15-21-5' are slightly susceptible to powdery mildew (*Podosphaera aphanis*) when greenhouse grown.

'R15-21-5' can be asexually propagated by root suckers, root cuttings and other known methods of propagating raspberry plants. No off-type plants have been observed in the history of asexual propagation of this cultivar by either method.

'R15-21-5' is distinguished from seed parent 'R14-21' and 'Tulameen' by the following characteristics:

Plant. 'R15-21-5' shows less vigor than seed parent 'R14-21' and a greater number of lateral branches than 'Tulameen'.

Current season's cane. 'R15-21-5' shows less cane diameter than 'R14-21' and 'Tulameen'.

Fruit. 'R15-21-5' shows large light red coloured fruit with a trapezoidal shape, and 'R14-21' fruit is smaller and the color is darker. Fruit color and shape of fruit is similar to those of 'Tulameen' but 'R15-21-5' shows larger fruits.

Spines. 'R15-21-5' shows less spine density and the spines are smaller than the spines in 'R14-21'.

'R15-21-5' is distinguished from other commercial cultivars by the following characteristics:

General. The onset of flowering on current season's canes in 'R15-21-5' begins 100 to 110 days after roots are planted in July. This is earlier than other commercial varieties such as 'Heritage' (unpatented variety), which flowers on current season's canes 140 to 150 days after planting in July; or, 'Adelita' (U.S. Plant Pat. No. 25,245 P3), which flowers on current season's canes 130 to 140 days after roots are planted in July.

Root. 'R15-21-5' shows a denser and thinner root system than 'Heritage' or 'Adelita'.

Plant. 'R15-21-5' is more vigorous and shows a greater number of branches than 'Heritage' or 'Adelita'. Branches of 'R15-21-5' are thicker than those of 'Adelita'.

Leaf. 'R15-21-5' is distinguished from other commercial cultivars such as 'Heritage' or 'Adelita' by the shape of the terminal leaflets (FIG. 9). Leaf rugosity in 'R15-21-5' is medium, which is more rugosity than that for 'Heritage' and less rugosity than that for 'Adelita' (FIG. 9). The green color of leaf upper side of 'R15-21-5' (RHS, NN137B to NN137C) is lighter than that for 'Adelita' (RHS, 138A to 137A) and 'Heritage' (RHS, 137A to NN137A) (FIG. 9).

Current season's cane. 'R15-21-5' shows glaucosity (Waxy Bloom) presence in canes and branches, meanwhile glaucosity (Waxy Bloom) in 'Adelita' is absent (FIG. 10). Cane color in 'R15-21-5' is near to RHS, 143B to 144A, whereas in 'Heritage' cane color is near to RHS, 142B to 142C.

Spines. 'R15-21-5' shows more spine density than 'Adelita' and less spine density than 'Heritage' in current season's cane (FIG. 10) and pedicel (FIG. 9).

Fruit. 'R15-21-5' shows a trapezoidal shaped fruit, meanwhile fruit shape in 'Adelita' is conical. In contrast, 'Heritage' shows a rounded general shape in fruit. 'R15-21-5' shows lighter red colored fruit (RHS, 46B to 46C) than 'Adelita' (RHS, 47A to 46A) and 'Heritage' (RHS, 59A to 59B).

The results provided below describe production, weight per fruit and Brix degrees of the variety 'R15-21-5' and commercial variety 'Adelita' (U.S. Plant Pat. No. 25,245 P3) from October 2016 to January 2017 on primocanes (Table 1) and from April 2017 to June 2017 on floricanes (Table 2). The results come from one trial located in Gibraleón (Huelva, Spain). The trial was a randomized complete block design with three repetitions and 6 plants per plot. Root cuttings were cultivated from Jul. 17, 2016 to May 31, 2017. It was cultivated under standard conditions of raspberry cultivation in Huelva, Spain.

TABLE 1

Variety	Location	Cultivation method	Yield	brix	Weight
'R15-21-5'	Gibraleón	Hydroponic	1699	9.5	6.6
'Adelita'	Gibraleón	Hydroponic	1126	9.0	6.9

Table 1. Fruit production, weight per fruit and Brix degrees of the varieties 'R15-21-5' and 'Adelita' from October 2016 to January 2017 on primocanes. Each value is the result of the average of three repetitions of 6 plants. yield, total commercial yield in grams per plant; weight, weight in grams per first quality fruits; brix, Brix degrees.

TABLE 2

Variety	Location	Cultivation method	Yield	brix	weight
'R15-21-5'	Gibraleón	Hydroponic	1317	9.3	7.5
'Adelita'	Gibraleón	Hydroponic	965	9.1	7.1

Table 2. Fruit production, weight per fruit and Brix degrees of the varieties 'R15-21-5' and 'Adelita' from April 2017 to June 2017 on floricanes. Each value is the result of the average of three repetitions of 6 plants. yield, total commercial yield in grams per plant; weight, weight in grams per first quality fruits; brix, Brix degrees.

The following traits in combination distinguish raspberry variety 'R15-21-5' from known raspberry varieties. It is based in UPOV terminology and color references are made to The Royal Horticultural Society Colour Chart, 2015 Edition, except where general terms of ordinary dictionary significance are used.

Following observations describe primocane variety with fruit production from October 2016 to January 2017 on primocanes and from end of April 2017 to June 2017 on floricanes, in 30-liter container in a greenhouse located in Huelva (Spain). Root cuttings were used for planting in July 2016.

TABLE 3

General.	
Characteristic	'R15-21-5'
Main bearing type	Both, on previous year's cane and on current year's cane
Time of cane emergence	Early, 15 days from root summer planting date (July)
Time of beginning of flowering on current season's cane	Very early, 100 to 110 days from summer planting date (July)
Time of beginning of fruit ripening on current year's cane	Very early, 120 to 140 days from summer planting date (July)
Length of fruiting period on current year's cane	Long, 10 to 12 weeks from summer planting date (July)

TABLE 4

Root.	
Characteristic	'R15-21-5'
Habit	Dense
Thickness	Medium to thin
Color	RHS, 164A to 164B

Observations made at the end of harvest on the current season's cane.

TABLE 5

Plant.	
Characteristic	'R15-21-5'
Habit	Semi-upright
Vigor	Medium to high
Height	190 to 200 cm
Width, plant diameter	80 to 100 cm

Observations made just before harvest on the current season's cane.

TABLE 6

Very young shoots.	
Characteristic	'R15-21-5'
Anthocyanin coloration of apex during rapid growth	Absent
Color	RHS, 144B to 144C

Observations made when the shoots are about 15 cm long.

TABLE 7

Current season's cane.	
Characteristic	'R15-21-5'
Glaucosity (Waxy Bloom)	Present
Texture	Smooth
Anthocyanin coloration	Absent
Length of internode	Medium, 5.0 to 7.0 cm
Length of vegetative bud	Medium, 0.5 to 1.0 cm
Length	Long, 190 to 200 cm
Diameter	1.28 to 1.36 cm
Color	RHS, 143B to 144A

Observations made just before harvest, made in the middle third of the current season's cane.

TABLE 8

Lateral branches.	
Characteristic	'R15-21-5'
Habit	Upright
Texture	Smooth
Glaucosity (Waxy Bloom)	Present
Anthocyanin coloration	Absent
Length of internode	Medium, 5.0 to 7.0 cm
Length	Long, 68 to 110 cm
Diameter	0.68 to 0.87 cm
Color	RHS, 144B to 144C

Observations made just before harvest, made in the middle third of the current season's cane.

TABLE 9

Spines.	
Characteristic	'R15-21-5'
Presence	Present
Density	Sparse, 4.39/cm ²
Size of base	Small, 0.10 to 0.20 cm
Length	Short, 0.20 to 0.30 cm
Shape	Deltoid
Color	RHS, 184A

Observations on spines made in the middle third of the current season's cane.

TABLE 10

Petioles.	
Characteristic	'R15-21-5'
Spines density	Very few, 5 to 8
Length	5.5 to 8.5 cm

TABLE 10-continued

Petioles.	
Characteristic	'R15-21-5'
Color	RHS, 144B to 144C
Diameter	0.30 to 0.37 cm

Observations made on fully developed leaves from the middle third of the cane.

TABLE 11

Stipules.	
Characteristic	'R15-21-5'
Number per leaf	2
Length	0.5 to 0.8 cm
Width	<0.1 cm
Shape	Erect
Color	RHS, 144B

Observations made on fully developed leaves from the middle third of the cane.

TABLE 12

Leaf.	
Characteristic	'R15-21-5'
Color of upper side	RHS, NN137B to NN137C
Color of lower side	RHS, 148B
Venation pattern	Reticulate
Venation color	RHS, 143C
Predominant number of leaflets	3
Profile of leaflets in cross section	Concave
Rugosity	Medium
Relative position of lateral leaflets	Touching
Length	Long, 26.5 to 28.0 cm
Width	Broad, 28.0 to 30.5 cm
Shape	Unipinnate, Imparipinnate
Shape of tip	Acuminate
Shape of base	Rounded
Shape of margin	Serrate
Length of terminal leaflet	Long, 15.5 to 18.5 cm
Width of terminal leaflet	Broad, 14.5 to 16.5 cm
Length of lateral leaflet	Long, 14.5 to 15.3 cm
Width of lateral leaflet	Broad, 9.2 to 10.0 cm
Rachis length between terminal leaflet and adjacent lateral leaflets	Long, 4.5 to 5.5 cm
Rachis diameter	3.5 to 4.5 cm
Rachis texture	Smooth
Rachis color	RHS, 144C

Observations made on fully developed leaves from the middle third of the cane.

TABLE 13

Pedicel.	
Characteristic	'R15-21-5'
Number of spines on pedicel	Medium, 15 to 30
Diameter	0.11 to 0.13 cm

TABLE 13-continued

Pedicel.	
Characteristic	'R15-21-5'
Length	4.5 to 5.5 cm
Color	RHS, 143C to 144B

Observations made during the autumn fruiting period.

TABLE 14

Peduncles.	
Characteristic	'R15-21-5'
Presence of anthocyanin coloration	Absent
Diameter	0.18 to 0.25 cm
Length	10 to 12 cm
Color	RHS, 143C to 144B

Observations made during the autumn fruiting period.

TABLE 15

Petals.	
Characteristic	'R15-21-5'
Number per flower	5 to 7
Length	0.5 to 0.6 cm
Width	0.3 to 0.4 cm
Shape	Elliptic
Apex shape	Obcordate
Base shape	Acute
Margin shape	Entire
Petal texture of upper side	Smooth
Petal texture of lower side	Smooth
Petal color of upper side	RHS, NN155A to NN155B
Petal color of lower side	RHS, NN155A to NN155B

Observations made during the autumn fruiting period.

TABLE 16

Sepals.	
Characteristic	'R15-21-5'
Number of sepals per flower	5
Length	1.12 to 1.20 cm
Width	0.5 to 0.7 cm
Shape	Deltoid
Apex shape	Aristate
Margin shape	Entire
Sepal texture of upper side	Smooth
Sepal texture of lower side	Smooth
Color of upper side	RHS, 143B to 143C
Color of lower side	RHS, 143A

Observations made during the autumn fruiting period.

TABLE 17

Flower.	
Characteristic	'R15-21-5'
Size	Large
Depth	0.9 to 1.2 cm
Diameter	1.9 to 2.7 cm

Observations made during the autumn fruiting period

TABLE 18

Reproductive organs.	
Characteristic	'R15-21-5'
Number of pistils/flower	126 to 142
Pistil length	0.3 to 0.5 cm
Ovary shape	Oval
Ovary color	RHS, 144D
Style length	0.3 to 0.4 cm
Style color	RHS, 155A
Number of stamens/flower	102 to 116
Stamen length	0.4 to 0.6 cm
Stamen shape	Oval
Stamen color	RHS, 155A
Pollen color	RHS, 155B

Observations made during the autumn fruiting period

TABLE 19

Fruit.	
Characteristic	'R15-21-5'
Length	Long, 2.6 to 3.0 cm
Width	Broad, 2.5 to 2.8 cm

TABLE 19-continued

Fruit.	
Characteristic	'R15-21-5'
Ratio length/width	Large
General shape in lateral view	Trapezoidal
Size of single drupe	Large, 0.3 to 0.4 cm
Color	RHS, 46B to 46C
Glossiness	Strong
Firmness	Firm
Adherence to plug	Very weak
Number of drupelets	124 to 148
Diameter hollow center	0.9 to 1.1 cm

15 Observations made on fruit picked during the second and third harvest of the autumn fruiting period.

20 Storage capacity. Fruits are suitable for fresh consumption with excellent quality and high firmness. 'R15-21-5' fruit maintains quality characteristics when it is kept in a refrigerated chamber, such as a Frigo® Zika refrigeration chamber, with temperatures ranging from 2° C. to 4° C. for three days.

Temperature tolerance. 'R15-21-5' plants are suitable to be cultivated to USDA Hardiness Zone '9b'.

The invention claimed is:

25 1. A new and distinct cultivar of raspberry plant named 'R15-21-5' as described and shown herein.

* * * * *



FIG. 1



FIG. 2

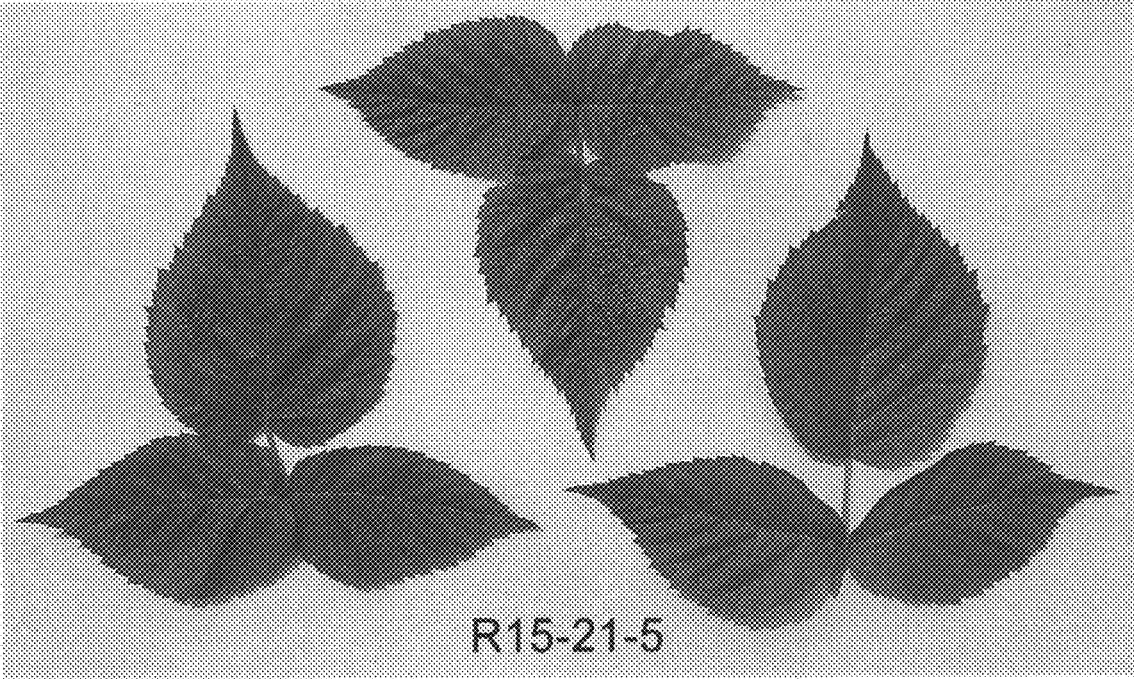


FIG. 3

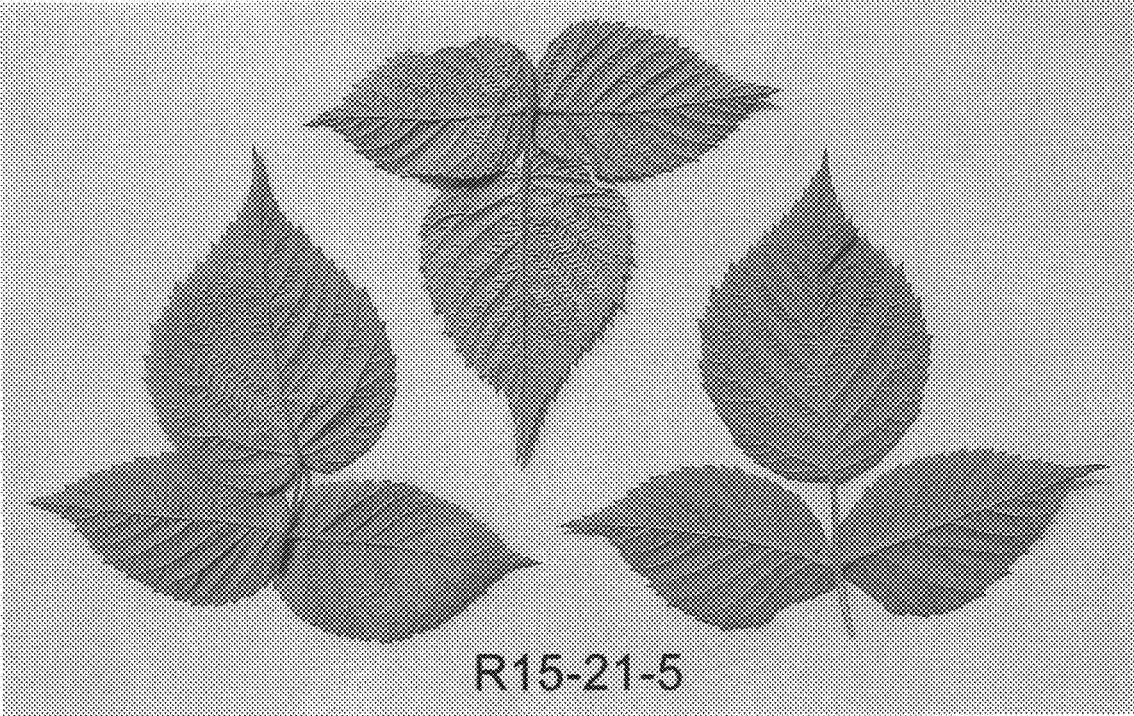


FIG. 4

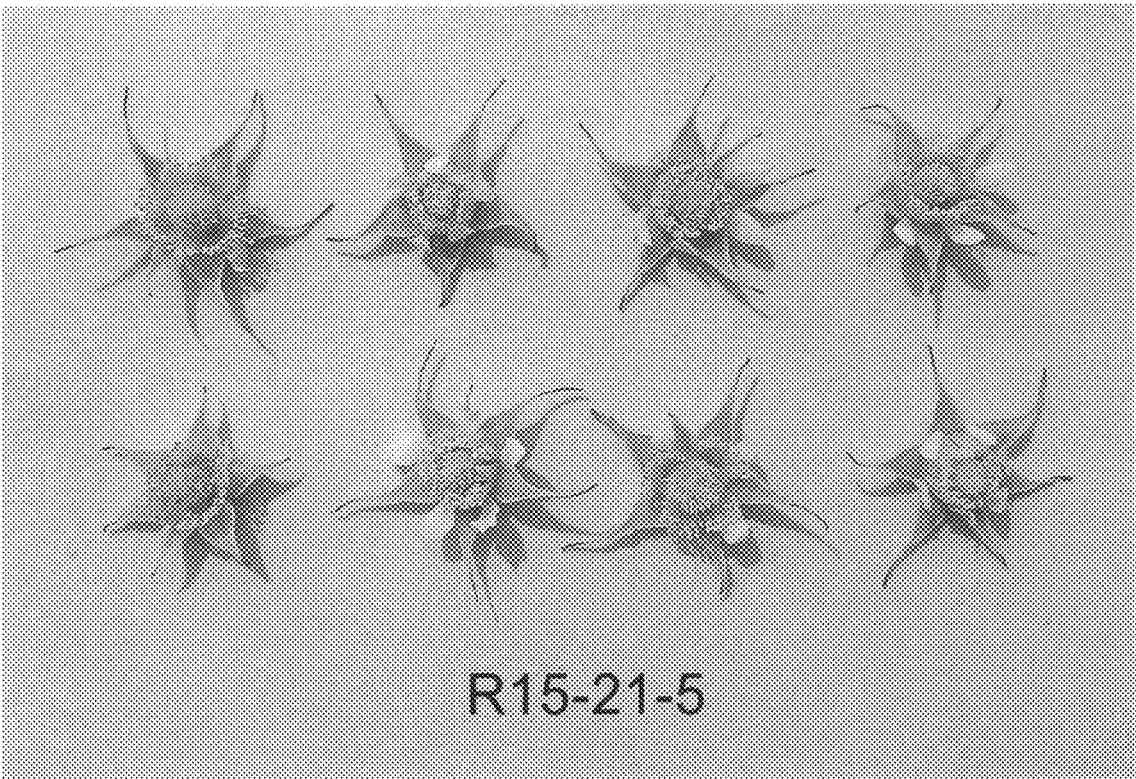


FIG. 5

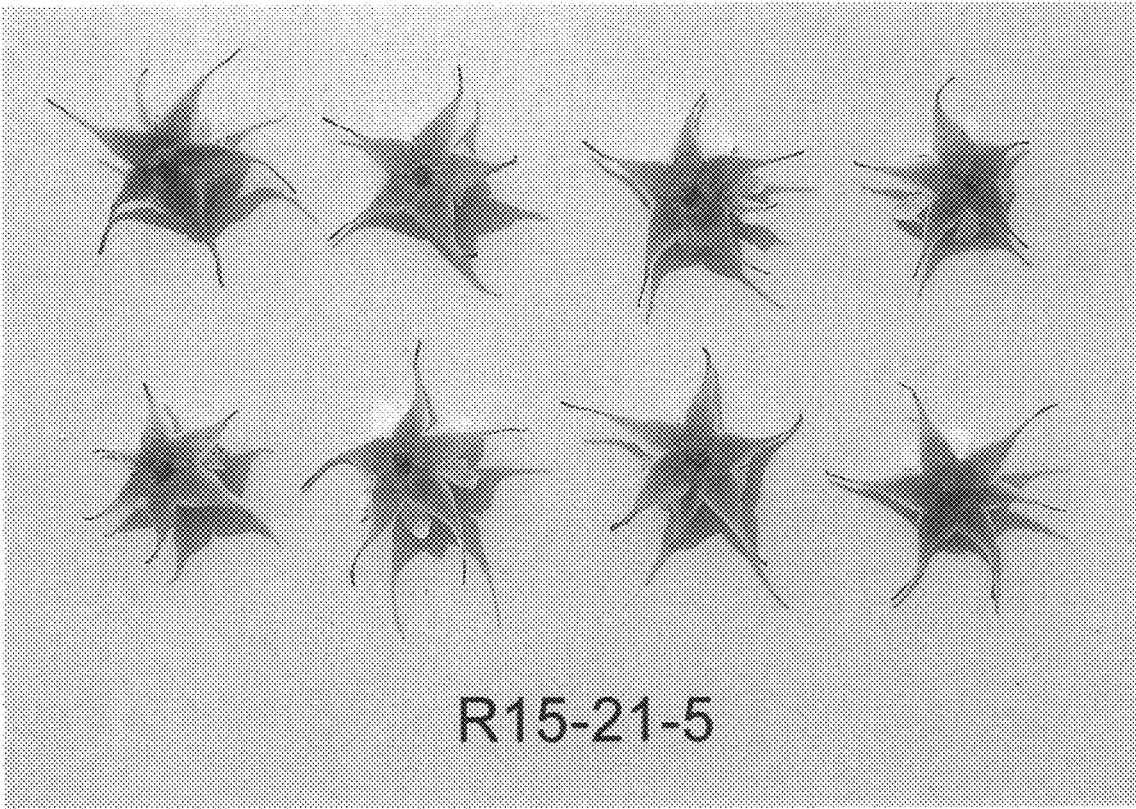


FIG. 6

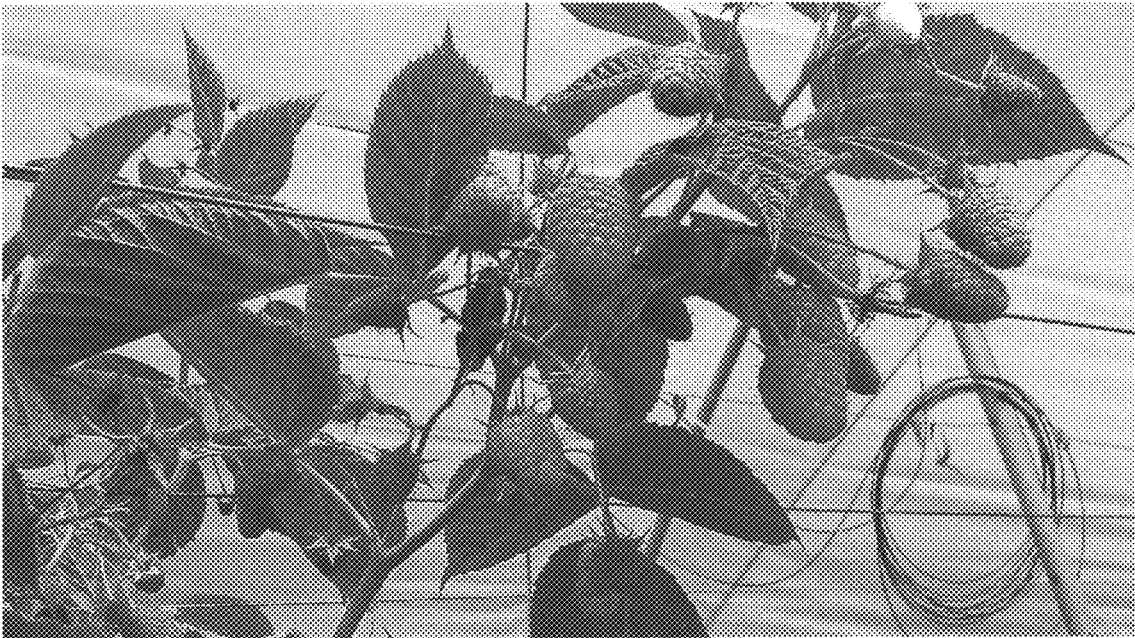


FIG. 7

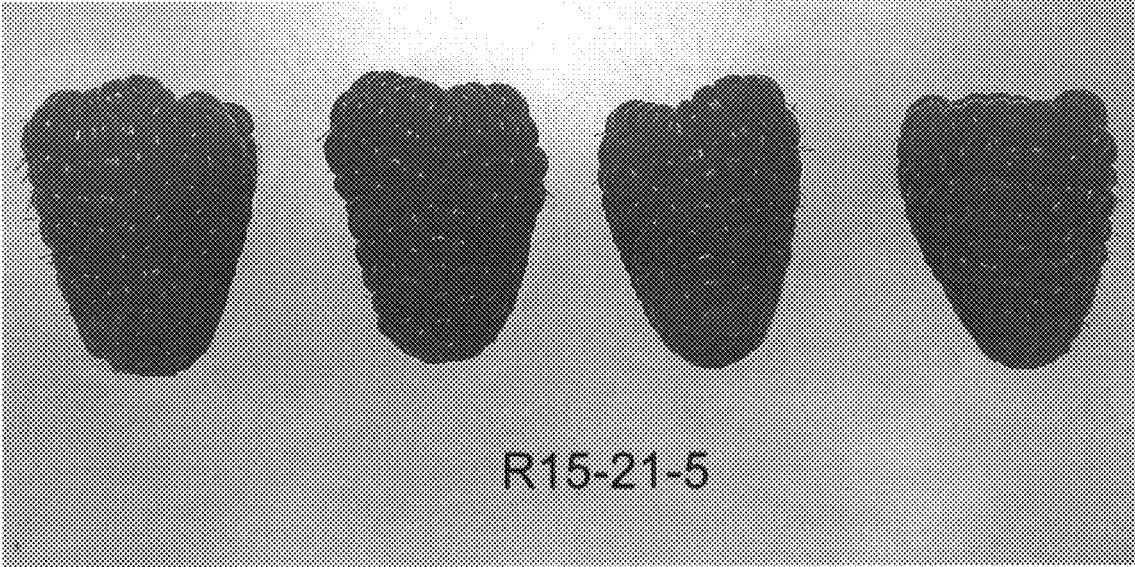


FIG. 8

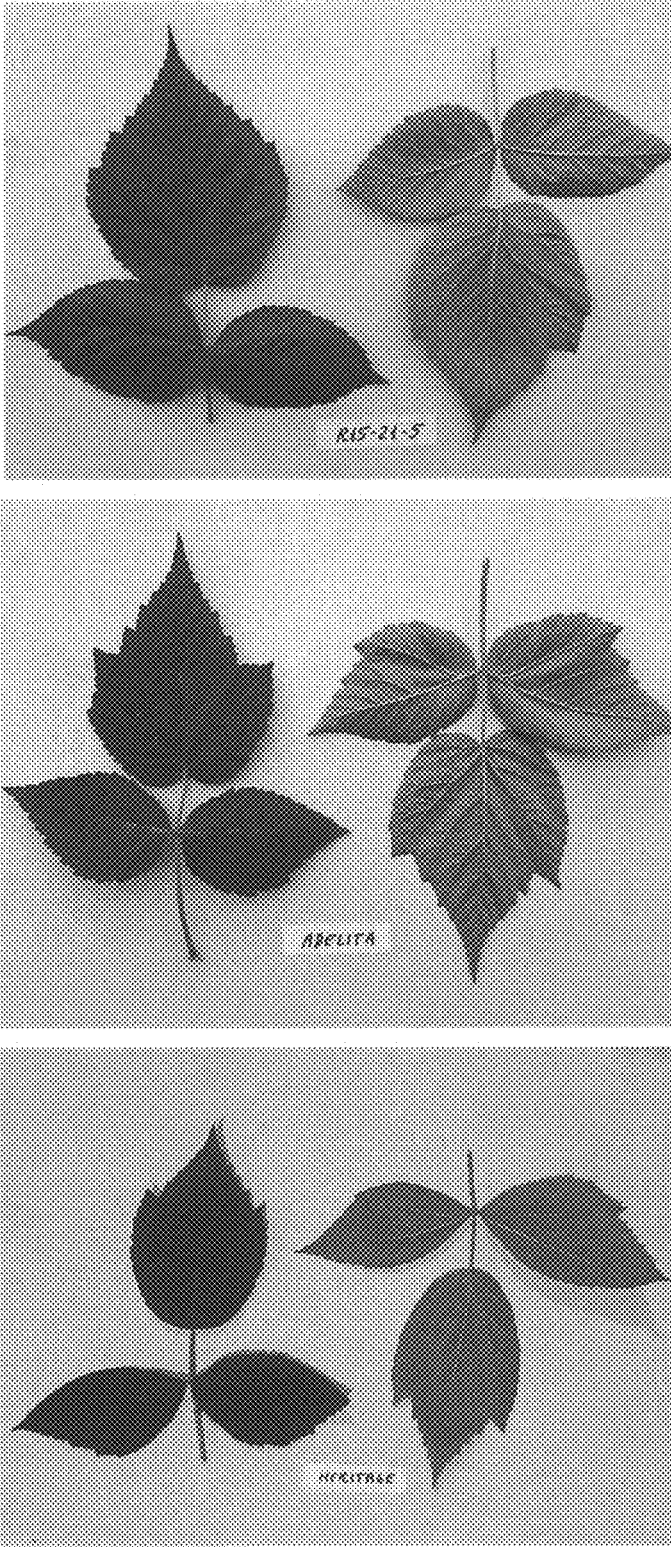
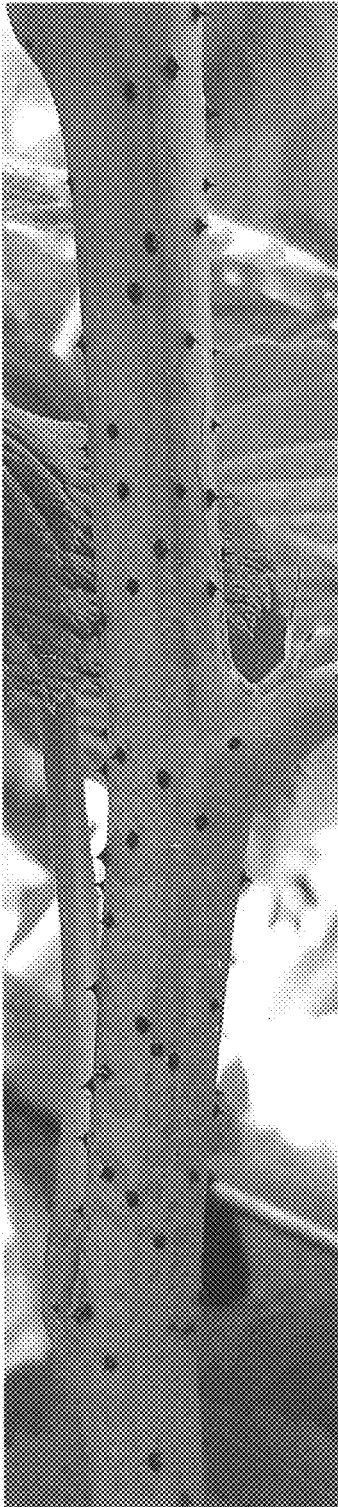
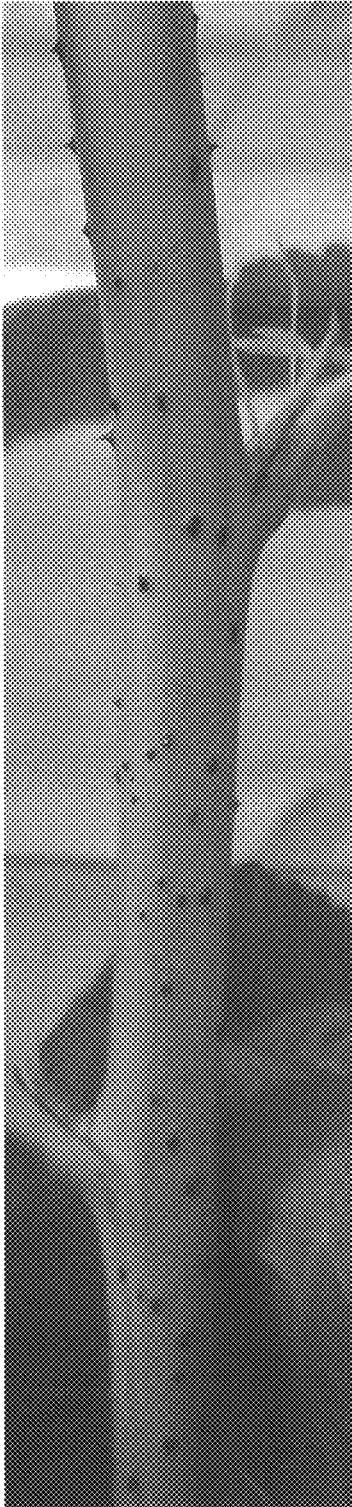


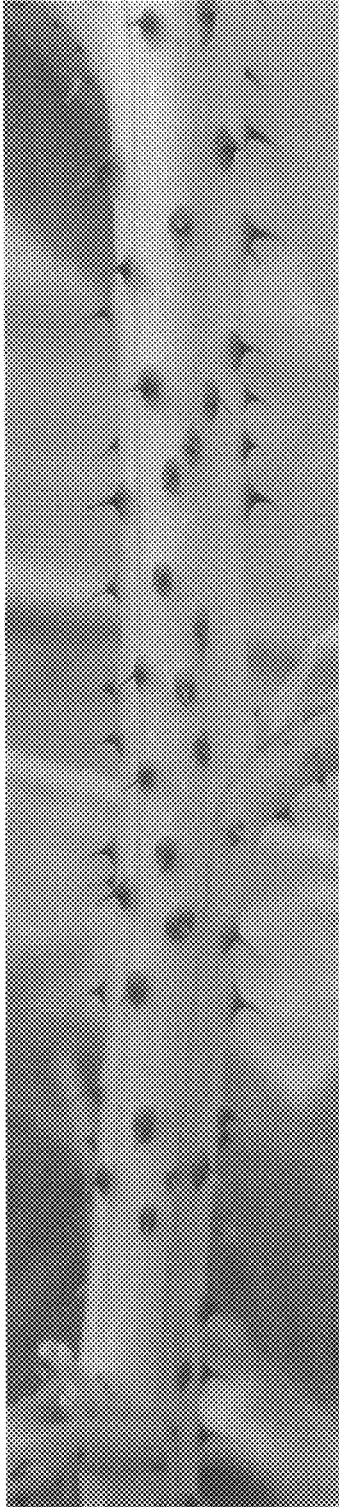
FIG. 9



'R15-21-5'



'ADELITA'



'HERITAGE'

FIG. 10