



CRAB APPLE
(Malus baccata)

Proposed denomination: 'Dante'
Application number: 08-6325
Application date: 2008/05/01
Applicant: Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec
Agent in Canada: Agriculture & Agri-Food Canada, Lacombe, Alberta
Breeder: Shahrokh Khanizadeh, Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec

Varieties used for comparison: 'Royal Beauty' and 'Jade'

Summary: *'Dante' has strong vigour in the stool bed while it is medium for 'Royal Beauty'. The branching habit of 'Dante' is spreading while it is weeping for 'Royal Beauty'. 'Dante' has medium branching frequency while it is high in 'Royal Beauty'. The dormant one year old shoot of 'Dante' has very sparse to sparse pubescence on the upper half while it is medium for 'Royal Beauty'. 'Dante' has absent or very weak shine of the bark while it is weak for 'Royal Beauty'. 'Dante' has small to medium sized few lenticles while 'Royal Beauty' has large lenticels of medium number. 'Dante' has absent or very weak pubescence on the upper side of the shoot tip leaves while it is medium for 'Royal Beauty'. The lower side of the shoot tip leaves of 'Dante' is green while it is purple to purple-green for 'Royal Beauty'. The leaf of 'Dante' is large with weak anthocyanin colouration of the veins while they are medium sized with strong anthocyanin colouration for 'Royal Beauty'. At leaf fall, 'Dante' has a yellow leaf while it is reddish-purple and green in 'Royal Beauty'. 'Dante' leaves fall earlier than 'Jade' and 'Royal Beauty'. The flower petal of 'Dante' is mainly white with irregular patterns of pink while it is reddish-purple for 'Royal Beauty'. The fruit of 'Dante' has no ground colour while for 'Jade' it is yellow. 'Dante' has russet around the eye basin while it is around the stalk cavity in 'Jade'. The fruit flesh of 'Dante' is yellowish while it is reddish for 'Royal Beauty'. 'Dante' has better fruit setting ability than 'Royal Beauty'. 'Dante' has better resistance to Scab than 'Royal Beauty'.*

Description:

TREE: ornamental type, vigorous vigour, spreading branching habit, medium branching frequency, hardy to zone 5A, extremely good ability to set fruit

ONE-YEAR OLD SHOOT: very weak to weak pubescence on the upper half, absent to very weak shine to the bark, medium flexibility, lenticels few and small to medium in size, predominantly reddish brown on the sunny side, medium sized lateral bud, pointed bud tip, the position of the bud relative to axis is adpressed, small to medium bud support

SHOOT TIP LEAF: reddish-purple, concave to straight shape in cross section, absent to very weak pubescence on the upper side, lower side green

LEAF: no lobes, large, orientation upwards to outwards, medium length/width ratio, acuminate apex, serrate margin, weak glossiness of upper side, no pubescence on lower side, weak anthocyanin colouration of veins, medium green, yellow colour before leaf fall, medium stipule size, early time of leaf fall

FLOWER: early bud burst, early beginning of flowering, white coloured bud with an irregular pattern of pink at the full balloon stage, green pedicel, single type

PETALS: ovate shape, touching to overlapping, mainly white with irregular patterns of pink on upper and lower sides

FRUIT: very small diameter, flat to flat globose shape, asymmetric in side view, weak to medium ribbing present, no crowning at distal end, persistence of calyx absent, very long persistence

EYE BASIN: aperture of eye closed to half opened, small sized eye, absent to very shallow depth, narrow to medium width

STALK: thin to medium thickness, long

STALK CAVITY: shallow, medium width

FRUIT SKIN: smooth surface, no bloom, no waxiness, no translucency, thick, no ground colour, very high amount of solid red over colour, low amount of russet around eye basin, small sized lenticels that are slightly prominent

FRUIT FLESH: yellowish colour, absent or very weak distinctness of core line when looked at in cross section, aperture of locules in cross section are opened

SEED: light brown, elliptic shape

DISEASE RESISTANCE: resistant to scab (*Venturia inaequalis*)

Origin and Breeding: ‘Dante’ (experimental designations ‘SJC59A76-08’, and ‘PGO-11’) was discovered as an open pollinated seedling of a *Malus baccata* tree from the breeding program at the All Union Institute of Plant Industry, Leningrad, U.S.S.R., Russia. It was shipped to Ottawa in 1959 and has been under evaluation since 1976 at the Agriculture & Agri-Food Station in St-Jean-sur-Richelieu, Quebec after the program terminated in Ottawa. The first selection was done in 1995 in Frelighsburg, Quebec based on disease/pest susceptibility and winter hardiness. Final selection was done in 1999 based on resistance to scab.

Tests and Trials: Tests and trials were conducted in L’Acadie, Quebec in 2008. There were 10 trees of ‘Dante’, 9 of ‘Jade’ and 4 of ‘Royal Beauty’ in trial. Trees were spaced 1.5 metres apart within the row with rows being spaced 5 metres apart.



Crab Apple: ‘Dante’ (right) with reference variety ‘Royal Beauty’ (left)

Proposed denomination: ‘Jade’
Application number: 08-6312
Application date: 2008/04/24
Applicant: Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec
Agent in Canada: Agriculture & Agri-Food Canada, Lacombe, Alberta
Breeder: Shahrokh Khanizadeh, Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec

Variety used for comparison: ‘Royal Beauty’

Summary: ‘Jade’ has strong vigour in the stool bed while it is medium for ‘Royal Beauty’. The branching habit of ‘Jade’ is spreading while it is weeping for ‘Royal Beauty’. ‘Jade’ has medium branching frequency while it is high for ‘Royal Beauty’. The dormant one-year-old shoot of ‘Jade’ has absent or very weak pubescence and shine of the bark on the upper

half while for 'Royal Beauty' there is medium pubescence and weak shine of the bark. 'Jade' has medium flexibility of the dormant one-year-old shoot while it is strong for 'Royal Beauty'. 'Jade' has small to medium sized few lenticels while 'Royal Beauty' has large lenticels of medium number. The shoot tip leaves of 'Jade' have absent to very sparse pubescence on the upper side while it is medium for 'Royal Beauty'. 'Jade' has a large green leaf while the leaf of 'Royal Beauty' is purple to purple-green and medium in size. The colour of the leaf of 'Jade' before it falls is yellow while it is reddish-purple and green for 'Royal Beauty'. 'Jade' has a medium sized stipules while they are large for 'Royal Beauty'. The flower petals of 'Jade' are mainly greenish-white with a tinge of pink while for 'Royal Beauty' they are reddish-purple. The fruit of 'Jade' have more prominent ribbing with a larger sized eye, wider stalk cavity and thicker stalk than 'Royal Beauty'. 'Jade' has a fruit with a yellow ground colour and a washed out to solid red overcolour while for 'Royal Beauty' the fruit has no ground colour and a solid dark red overcolour. The fruit flesh of 'Jade' is yellowish while it is a reddish colour for 'Royal Beauty'. 'Jade' has better fruit setting ability than 'Royal Beauty'. 'Jade' has better resistance to scab than 'Royal Beauty'.

Description:

TREE: ornamental type, strong vigour, spreading branching habit, medium branching frequency, hardy to zone 5A, good ability to set fruit

ONE-YEAR-OLD SHOOT: absent to very weak pubescence on the upper half, absent to very weak shine to the bark, medium flexibility, lenticels few to medium in number and small to medium in size, predominantly reddish-brown on the sunny side, small to medium sized lateral bud, pointed bud tip, the position of the bud relative to axis is adpressed, medium bud support

SHOOT TIP LEAF: brownish-red, concave to straight shape in cross-section, absent to very weak pubescence on the upper side, lower side green

LEAF: no lobes, large size, orientation upwards to outwards, medium length/width ratio, acuminate apex, crenate margin, weak glossiness on upper side, no pubescence on lower side, medium anthocyanin colouration of veins on the lower side of the leaf, dark green colour on the upper side, yellow colour before leaf fall, medium stipule size, late time of leaf fall

FLOWER: early bud burst, begins flowering early, mainly greenish-white coloured bud with a tinge of pink at the full balloon stage, green pedicel, single type

PETALS: oblong shape, slightly touching to overlapping, white on upper and lower sides

FRUIT: very small diameter, flat shape, symmetric in side view, medium ribbing present, no crowning at distal end, persistence of calyx absent, very long persistence

EYE BASIN: aperture of eye half opened, medium sized eye, absent to very shallow, broad

STALK: medium thickness, medium to long

STALK CAVITY: shallow to medium depth, broad

FRUIT SKIN: smooth surface, weak to medium bloom, no waxiness, no translucency, thick, yellow ground colour, medium to high amount of red washed out to solid over colour, low amount of russet around stalk cavity, small to medium sized lenticels that are slight to intermediate in prominence

FRUIT FLESH: yellowish colour, absent or very weak distinctness of core line when looked at in cross-section, aperture of locules in cross section is opened

SEED: brown, normal shape

DISEASE RESISTANCE: resistant to moderately resistant to scab (*Venturia inaequalis*)

Origin and Breeding: 'Jade' (experimental designations 'SJC59A79-01', 'PGO-12') originated from a cross between two *Malus baccata* species varieties 'Siberian Beauty' X 'Siberian Apple 27-16' from the breeding program at the All Union Institute of Plant Industry in Leningrad, U.S.S.R, Russia. The seedling was shipped to Ottawa in 1959, and has been under evaluation since 1976 at the Agriculture & Agri-Food Canada Station in St-Jean-sur-Richelieu, Quebec, after the program terminated in Ottawa. The first selection was done in 1995 in Frelighsburg, Quebec based on disease/pest susceptibility and winter hardiness. Final selection was done in 1999 based on resistance to scab.

Tests and Trials: Tests and trials were conducted in L'Acadie, Quebec in 2008. There were 9 trees of 'Jade' and 4 of 'Royal Beauty' in trial. Trees were spaced 1.5 metres apart within the row with rows being spaced 5 metres apart.



Crab Apple: 'Jade' (right) with reference variety 'Royal Beauty' (left)

CRAB APPLE
(*Malus hupehensis*)

Proposed denomination: 'Javid'
Application number: 08-6307
Application date: 2008/04/24
Applicant: Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec
Agent in Canada: Agriculture & Agri-Food Canada, Lacombe, Alberta
Breeder: Shahrokh Khanizadeh, Agriculture & Agri-Food Canada, Saint-Jean-sur-Richelieu, Quebec

Variety used for comparison: 'Royal Beauty'

Summary: 'Javid' has a spreading branching habit while it is weeping for 'Royal Beauty'. The dormant one-year-old shoot of 'Javid' has absent to very weak pubescence and shine of the bark on the upper half while it is medium pubescence and weak for 'Royal Beauty'. The dormant one-year-old shoot of 'Javid' has medium flexibility while it is strong for 'Royal Beauty'. 'Javid' has small few lenticels while in 'Royal Beauty' the lenticels are large and medium in number. 'Javid' has a large lateral bud with a small support on the dormant one-year-old shoot while the lateral bud is medium size with medium support for 'Royal Beauty'. The shoot tip leaves of 'Javid' have absent or very weak pubescence on the upper side while it is medium for 'Royal Beauty'. 'Javid' has a green leaf while the leaf of 'Royal Beauty' is purple to purple-green. The colour of the leaf of 'Javid' before leaf fall is yellow while it is reddish-purple and green for 'Royal Beauty'. 'Javid' bud burst and time of beginning of flowering is later than 'Royal Beauty'. The flower petals of 'Javid' are predominantly white with irregular patterns of purple-pink around the margins while for 'Royal Beauty' they are reddish-purple. The fruit of 'Javid' has a greenish flesh while it is reddish for 'Royal Beauty'. 'Javid' has better fruit setting ability than 'Royal Beauty'. 'Javid' has better resistance to scab than 'Royal Beauty'.

Description:

TREE: ornamental type, intermediate vigour, spreading branching habit, medium branching frequency, hardy to zone 5A, extremely good ability to set fruit

ONE-YEAR-OLD SHOOT: absent to very weak pubescence on the upper half, absent to very weak shine to the bark, medium flexibility, lenticels few and small sized, predominantly reddish-brown on the sunny side, large lateral bud, pointed bud tip, the position of the bud relative to axis is adpressed to slightly held out, small bud support

SHOOT TIP LEAF: reddish-purple, concave to straight shape in cross-section, absent to very weak pubescence on the upper side, lower side green,

LEAF: no lobes, large, orientation upwards to outwards, medium length/width ratio, acuminate apex, crenate margin, weak glossiness on upper side, no pubescence on lower side, strong anthocyanin colouration of veins, dark green, yellow colour before leaf fall, medium stipule size, late time of leaf fall

FLOWER: late bud burst, late beginning of flowering, white coloured bud with irregular patterns of purple-pink at the full balloon stage, green pedicel, single type

PETALS: oblong shape, overlapping, mainly white on upper and lower sides with purple-pink (RHS 58A) around the margins

FRUIT: very small diameter, globose, symmetric in side view, very weak ribbing present, no crowning at distal end, persistence of calyx absent, very long persistence

EYE BASIN: aperture of eye closed to half opened, small eye, absent to very shallow, very narrow

STALK: thin, very long

STALK CAVITY: very shallow, narrow

FRUIT SKIN: smooth surface, no bloom, weak to medium waxiness, no translucency, thick, no ground colour, very high amount of dark red solid over colour, absent or very low amount of russet around eye basin, small lenticels that are non prominent or very slightly prominent

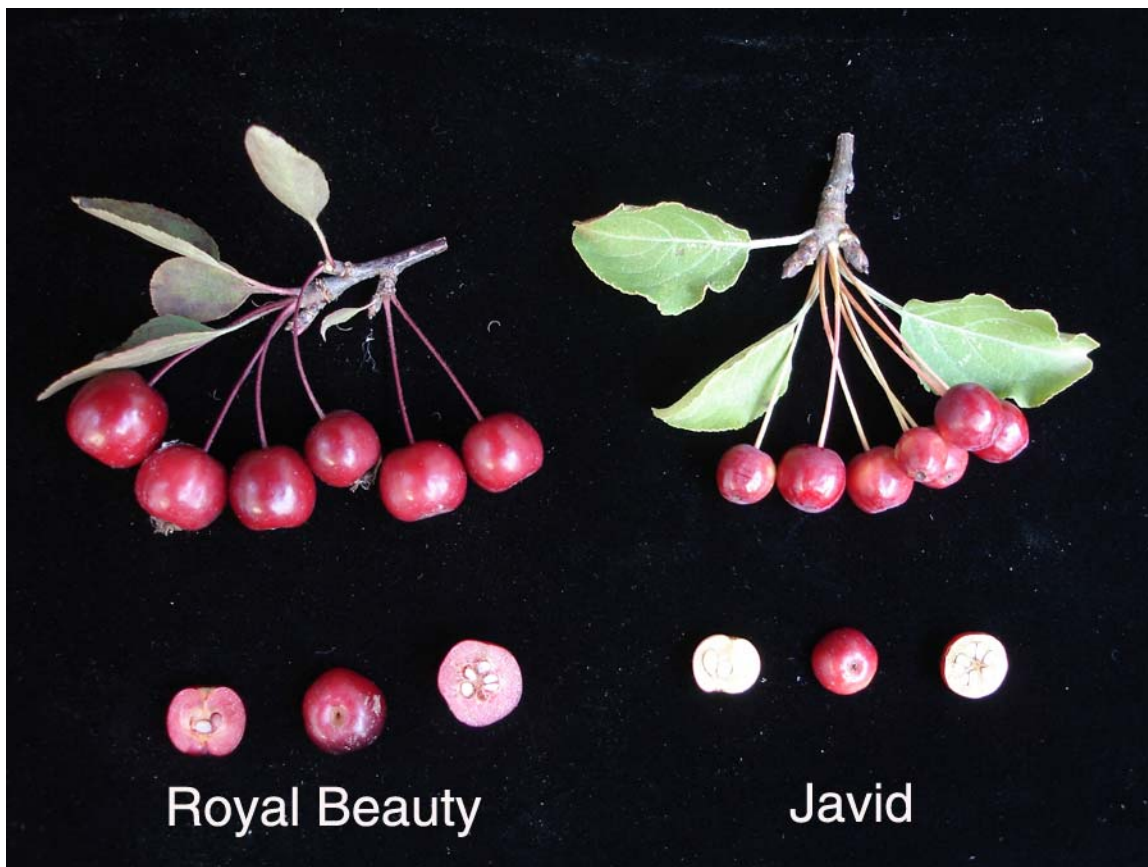
FRUIT FLESH: greenish colour, absent or very weak distinctness of core line when looked at in cross-section, aperture of locules in cross section are opened

SEED: light brown, normal shape

DISEASE RESISTANCE: resistant to scab (*Venturia inaequalis*)

Origin and Breeding: 'Javid' (experimental designations 'SJC5791-01', 'PGO-14') was discovered as an open pollinated seedling of a *Malus hupehensis* tree in the Botanical Garden in Greilswald, Germany, and then shipped to Ottawa in 1959. It has been under evaluation since 1976 in St-Jean-sur-Richelieu after it was shipped from Ottawa when the program was terminated there. The first selection was done in 1995 in Frelighsburg, Quebec, based on disease/pest susceptibility and winter hardiness. Final selection was done in 1999 based on resistance to scab.

Tests and Trials: Tests and trials were conducted in L'Acadie, Quebec in 2008. There were 9 trees of 'Javid' and 4 of 'Royal Beauty' in trial. Trees were spaced 1.5 metres apart within the row with rows being spaced 5 metres apart.



Crab Apple: 'Javid' with reference variety 'Royal Beauty' (left)