



## APPLICATIONS UNDER EXAMINATION

PEAR

### PEAR (*Pyrus communis*)

**Proposed denomination:** 'HW623'  
**Application number:** 09-6638  
**Application date:** 2009/04/29  
**Applicant:** Agriculture & Agri-Food Canada, Vineland, Ontario  
**Agent in Canada:** Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** David Hunter, Agriculture & Agri-Food Canada, Vineland, Ontario

**Varieties used for comparison:** 'Bosc', 'Harrow Sweet', 'AC Harrow Crisp' and 'Bartlett'

**Summary:** *The predominant colour on the sunny side of the one-year old shoot of 'HW623' is brown purple whereas it is orange brown on 'Harrow Sweet' and 'Bartlett' and medium brown on 'AC Harrow Crisp'. The trees of 'HW623' begin flowering late whereas they flower early to mid-season on 'Harrow Sweet' and mid-season on 'Bartlett'. The position of maximum diameter on the fruit of 'HW623' is clearly towards the calyx whereas it is clearly to slightly towards the calyx on 'Bosc' and 'AC Harrow Crisp' and in the middle to slightly towards the calyx on 'Bartlett'. The sides of the fruit of 'HW623' are concave whereas they are concave to straight on 'Harrow Sweet', 'AC Harrow Crisp' and 'Bartlett'. The area of over colour of the fruit of 'HW623' is small whereas it is absent on 'Bosc', medium sized on 'AC Harrow Crisp' and very small on 'Bartlett'. The over colour of 'HW623' is orange red whereas it is light red on 'AC Harrow Crisp' and pink red on 'Bartlett'. There is no russetting around the eye basin, on the cheeks and around the stalk attachment of 'HW623' whereas it is very large on 'Bosc'. The stalk of 'HW623' is oblique to right-angled in relation to the axis of the fruit whereas it is straight to oblique on 'Bosc' and 'Bartlett' and oblique on 'Harrow Sweet' and 'AC Harrow Crisp'. At harvest, the area around the eye of 'HW623' is slightly ribbed whereas it is smooth on 'Bosc' and 'Harrow Sweet'.*

#### **Description:**

**TREE:** medium to strong vigour, medium to strong branching, semi-upright habit, begins flowering late, late maturity for consumption

**ONE YEAR OLD SHOOT:** straight to wavy growth, medium to long internode, brown purple on sunny side, many lenticels

**VEGETATIVE BUD:** acute apex, adpressed in relation to the shoot, medium sized bud support

**YOUNG SHOOTS:** strong to very strong anthocyanin colouration of growing tip, sparse pubescence on upper third

**LEAF:** outwards to downwards attitude in relation to shoot, large length/width ratio, right-angled base, right-angled apex, short to medium length pointed tip, bluntly serrate margin, shallow incisions, medium curvature of longitudinal axis

**STIPULES:** present, short to medium distance from basal attachment

**FLOWER:** mainly on spurs, medium to long bud, stigma positioned above stamens

**SEPALS:** long, spreading in relation to corolla

**PETALS:** overlapping, medium to large, circular, rounded base, short claw

**FRUIT:** long to very long, large maximum diameter, large length/diameter ratio, position of maximum diameter clearly towards calyx, medium to large size, slightly asymmetric to strongly asymmetric in longitudinal cross section, concave profile of sides

**SKIN:** yellow ground colour, small amount of orange red over colour, no area of russet around eye basin, on cheeks or around stalk attachment

**STALK:** thin to medium in thickness, medium curvature, oblique to right-angled attitude in relation to axis of the fruit, absent or very shallow stalk cavity

**EYE BASIN, AT HARVEST:** converging sepals, shallow to medium depth, medium to broad, slightly ribbed relief around eye

**FLESH:** very fine texture, medium firmness, juicy to very juicy

**SEED:** elliptic

DISEASE RESISTANCE: resistant to moderately resistant to fireblight (*Erwinia amylovora*)

**Origin and Breeding:** 'HW623' arose from the controlled cross of 'Harrow Sweet' and 'HW605' made in 1979 at Agriculture and Agri-Food Canada Research Station in Harrow, Ontario. It was selected as a hybrid seedling in 1988 and propagated by budding on pear seedling rootstocks. Trees were planted in an evaluation orchard at the Harrow Research Centre in 1993 and in November, 1999, trees in this orchard were relocated to the Agriculture and Agri-Food Canada Research Farm at Jordan Station. This selection was advanced and tested in regional trials in cooperation with the Western Ontario Fruit Testing Association beginning in 1994.

**Tests and Trials:** The tests and trials for 'HW623' were conducted during the 2006-2009 growing seasons at the Jordan Farm of Agriculture and Agri-Food Canada Research Centre in Vineland, Ontario. The trials consisted of a minimum of 4 trees per variety spaced 3 metres apart and 4.5 metres between rows. The trees were grafted on seedling rootstock and were originally established during the 1998-1999 growing season.

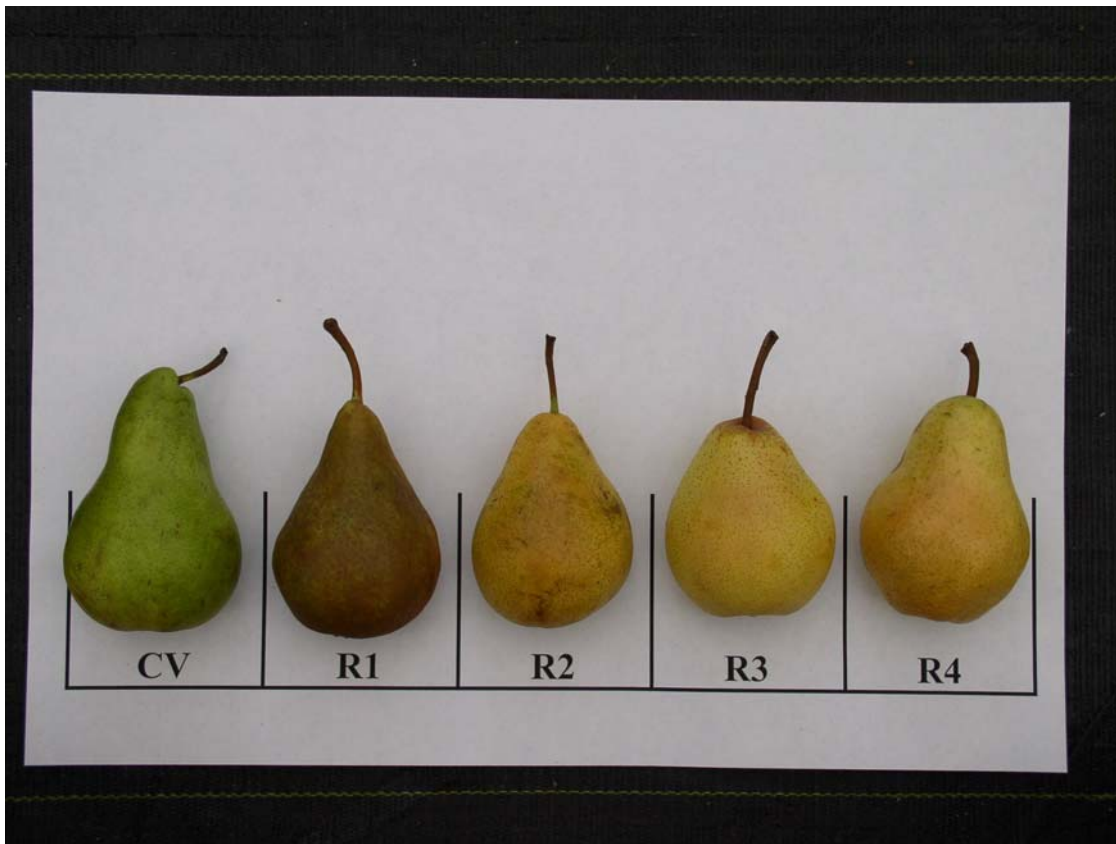
**Comparison table for 'HW623'**

	'HW623'	'Bosc'*	'Harrow Sweet'*	'AC Harrow Crisp'*	'Bartlett'*
<i>Leaf length (cm)</i>					
mean	8.8	7.1	7.1	6.3	6.5
std. deviation	1.1	1.3	1.2	0.8	0.7
<i>Length of fruit stalk (mm)</i>					
mean	30.8	45.6	32.9	35.0	25.2
std. deviation	5.4	9.2	5.2	7.7	4.9

\*reference varieties



Pear: 'HW623' (left) with reference varieties 'Bosc' (top centre), 'AC Harrow Crisp' (top right), 'Harrow Sweet' (bottom centre) and 'Bartlett' (bottom right)



Pear: 'HW623' (left) with reference varieties 'Bosc' (centre, left), 'Harrow Sweet' (centre), 'AC Harrow Crisp' (centre, right) and 'Bartlett' (right)

**Proposed denomination:** 'Harovin Sundown'  
**Application number:** 08-6315  
**Application date:** 2008/04/28  
**Applicant:** Agriculture & Agri-Food Canada, Vineland, Ontario  
**Agent in Canada:** Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** David Hunter, Agriculture & Agri-Food Canada, Vineland, Ontario  
 Charles G. Embree, Agriculture & Agri-Food Canada, Kentville, Nova Scotia

**Varieties used for comparison:** 'Bosc', 'Harrow Sweet', 'AC Harrow Crisp' and 'Bartlett'

**Summary:** *The trees of 'Harovin Sundown' begin flowering late whereas they flower early to mid-season on 'Harrow Sweet' and mid-season on 'Bartlett'. The position of maximum diameter on the fruit of 'Harovin Sundown' is in the middle whereas it is clearly to slightly towards the calyx on 'Bosc' and 'AC Harrow Crisp' and clearly toward the calyx on 'Harrow Sweet'. The sides of the fruit of 'Harovin Sundown' are straight to convex whereas they are concave on 'Bosc' and concave to straight on 'Harrow Sweet', 'AC Harrow Crisp' and 'Bartlett'. The area of over colour of the fruit of 'Harovin Sundown' is small whereas it is absent on 'Bosc', medium sized on 'AC Harrow Crisp' and very small on 'Bartlett'. The over colour of 'Harovin Sundown' is light red whereas it is orange red on 'Harrow Sweet' and pink red on 'Bartlett'. There is no russetting around the eye basin, on the cheeks and around the stalk attachment of 'Harovin Sundown' whereas it is very large on 'Bosc'. At harvest, the area around the eye of 'Harovin Sundown' is slightly ribbed whereas it is smooth on 'Bosc' and 'Harrow Sweet'.*

**Description:**

TREE: medium to strong vigour, medium to strong branching, semi-upright habit, begins flowering late, late maturity for consumption

ONE YEAR OLD SHOOTS: straight to wavy growth, medium length of internode, orange brown colour on sunny side, many lenticels

VEGETATIVE BUD: acute apex, slightly held out in relation to the shoot, small to medium sized bud support

YOUNG SHOOTS: strong to very strong anthocyanin colouration of growing tip, medium to dense pubescence on upper third

LEAF: outwards to downwards attitude in relation to shoot, medium to large length/width ratio, right-angled base, right-angled to obtuse apex, very short pointed tip, bluntly serrate margin, shallow incisions, weak curvature of longitudinal axis

STIPULES: present, short to medium distance from basal attachment

FLOWER: mainly on spurs, medium length bud, stigma below to same level as stamens

SEPALS: long, recurved in relation to corolla

PETALS: free to touching, medium size, broad ovate, rounded to truncate base, short to medium length claw

FRUIT: long, large maximum diameter, small to medium length/diameter ratio, position of maximum diameter in middle, large size, slightly to strongly asymmetric in longitudinal cross section, straight to convex profile of sides

SKIN: yellow ground colour, small amount of light red over colour, no area of russet around eye basin, on cheeks or around stalk attachment

STALK: medium to thick, medium curvature, straight to oblique attitude in relation to axis of the fruit, medium to deep stalk cavity

EYE BASIN, AT HARVEST: converging to erect sepals, shallow to medium depth, medium width, slightly ribbed relief around eye

FLESH: very fine texture, medium to firm, juicy

SEED: elliptic

DISEASE RESISTANCE: resistant to moderately resistant to fireblight (*Erwinia amylovora*)

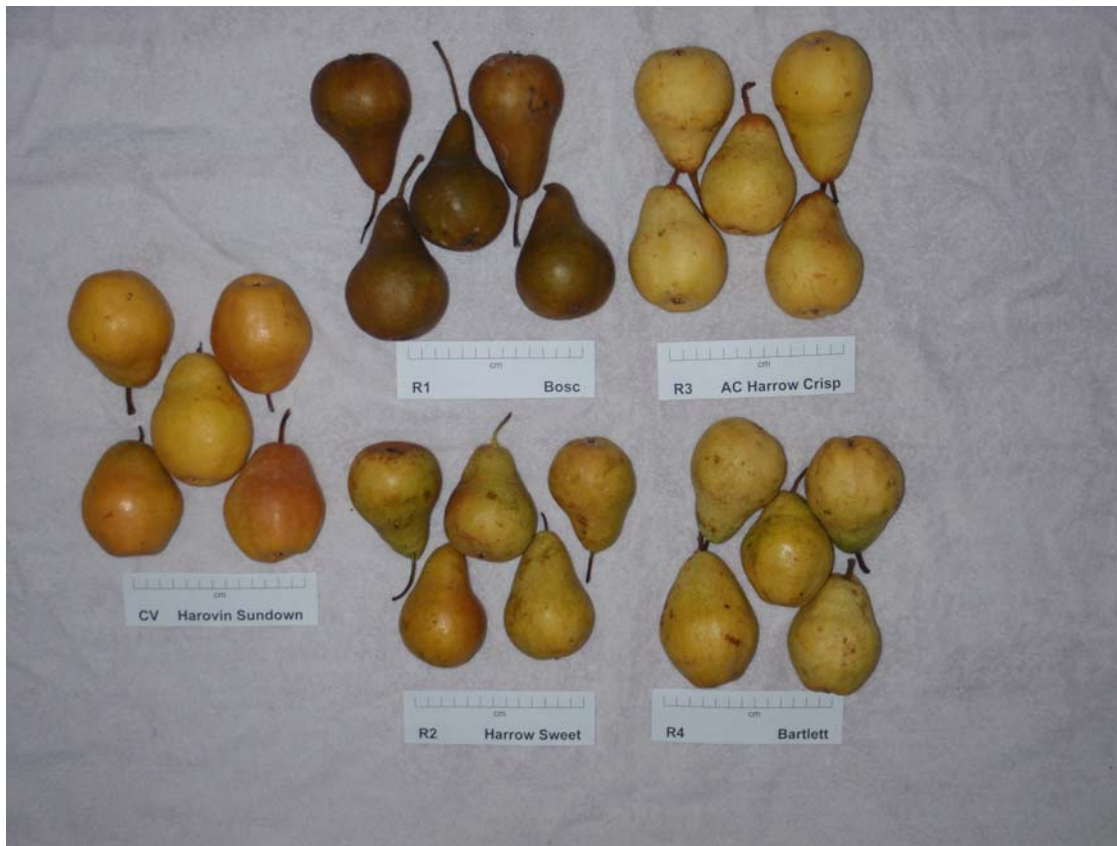
**Origin and Breeding:** 'Harovin Sundown', tested as HW614, arose from the controlled cross of 'Bartlett' and 'US56112-146' made in 1972 at Agriculture and Agri-Food Canada Research Station in Harrow, Ontario. It was selected as a hybrid seedling in 1982 and propagated by budding on pear seedling rootstocks. Propagation for regional trials in cooperation with the Western Ontario Fruit Testing Association began in 1984, and test trees were placed in regional trials beginning in 1986.

**Tests and Trials:** The tests and trials for 'Harovin Sundown' were conducted during the 2006-2009 growing seasons at the Jordan Farm of Agriculture and Agri-Food Canada Research Centre in Vineland, Ontario. The trials consisted of a minimum of 4 trees per variety spaced 3 metres apart and 4.5 metres between rows. The trees were grafted on seedling rootstock and were originally established during the 1998-1999 growing season.

**Comparison table for 'Harovin Sundown'**

	'Harovin Sundown'	'Bosc'*	'Harrow Sweet'*	'AC Harrow Crisp'*	'Bartlett'*
<i>Length of fruit stalk (mm)</i>					
mean	29.8	45.6	32.9	35.0	25.2
std. deviation	6.1	9.2	5.2	7.7	4.9

\*reference varieties



Pear: 'Harovin Sundown' (left) with reference varieties 'Bosc' (top centre), 'AC Harrow Crisp' (top right), 'Harrow Sweet' (bottom centre) and 'Bartlett' (bottom right)

**Proposed denomination:** 'K-Gold'  
**Application number:** 02-3007  
**Application date:** 2002/03/05  
**Applicant:** Agriculture & Agri-Food Canada, Kentville, Nova Scotia  
**Agent in Canada:** Agriculture & Agri-Food Canada, Lacombe, Alberta  
**Breeder:** Charles G. Embree, Agriculture & Agri-Food Canada, Kentville, Nova Scotia

**Varieties used for comparison:** 'Harovin Sundown', 'Bartlett' and 'Bosc'

**Summary:** *The pubescence on the young shoot of 'K-Gold' is medium in density whereas it is weak on 'Harovin Sundown', 'Bartlett' and 'Bosc'. The stigma of 'K-Gold' is positioned above the stamens whereas they are positioned below the stamens on 'Harovin Sundown' and at the same level as the stamens on 'Bartlett'. The fruit of 'K-Gold' is large whereas it is medium sized in 'Harovin Sundown' and 'Bartlett' and small in 'Bosc'. The fruit stalk of 'K-Gold' has a strong curvature whereas it is absent or very weak on 'Harovin Sundown' and 'Bartlett'. The attitude of the fruit stalk in relation to the axis of the fruit of 'K-Gold' is oblique whereas it is straight in 'Harovin Sundown' and 'Bartlett'. The eye basin of 'K-Gold' at harvest is broad whereas it is medium in width on 'Harovin Sundown' and narrow on 'Bartlett' and 'Bosc'. 'K-Gold' matures late for consumption whereas it matures mid-season for 'Bartlett' and 'Bosc'.*

**Description:**

TREE: strong vigour, medium branching, upright habit, begins flowering mid-season, late maturity for consumption

ONE YEAR OLD SHOOTS: straight growth, medium length of internode, orange brown colour on sunny side, medium number of lenticels

VEGETATIVE BUD: acute apex, markedly held out in relation to the shoot, large bud support



**YOUNG SHOOTS:** medium amount of anthocyanin colouration of growing tip, medium density of pubescence on upper third

**LEAF:** downwards attitude in relation to shoot, large length/width ratio, obtuse base, right-angled apex, long pointed tip, bluntly serrate margin, medium depth incisions, medium curvature of longitudinal axis

**STIPULES:** present, short distance from basal attachment

**FLOWER:** mainly on spurs, medium length bud, stigma positioned above level of stamens

**SEPALS:** medium length, spreading in relation to corolla, green on immature fruit

**PETALS:** mainly touching with some overlapping, medium size, mainly circular with some broad ovate, mainly rounded with some cuneate base, short claw

**FRUIT:** long, large maximum diameter, medium length/diameter ratio, position of maximum diameter slightly towards calyx, large size, symmetric in longitudinal section, concave profile of sides

**SKIN:** yellow ground colour, medium sized amount of orange red over colour, no area of russet around eye basin or on cheeks, medium amount of russetting around stalk attachment

**STALK:** medium thickness, strong curvature, oblique attitude in relation to axis of the fruit, medium depth of stalk cavity

**EYE BASIN, AT HARVEST:** erect sepals, deep, broad, embossed relief around eye

**FLESH:** fine texture, firm, juicy

**SEED:** elliptic

**PEST REACTIONS:** susceptible to plum curculio (*Conotrachelus nenuphar*)

**HERBICIDE TOLERANCE:** resistant to Gramoxone and Simazine

**PESTICIDE TOLERANCE:** resistant to Maestro and Imidan

**Origin and Breeding:** 'K-Gold', tested as 'S30-22-02', arose from the cross of 'Beierschmidt' and 'US505' made in the spring of 1966 at the Agriculture and Agri-Food Canada Research Centre in Kentville, Nova Scotia. It was planted in the field in the spring of 1968 and was selected and propagated for second stage evaluation in 1988. Following a very dry growing season of 2001, 'K-Gold' was found to have superior performance in the field. Selection criteria included fruit quality, shelf-life and harvest maturity.

**Tests and Trials:** Tests and trials for 'K-Gold' were conducted during the 2009 growing season at the Agriculture & Agri-Food Horticulture Research Center in Kentville, Nova Scotia. There were a minimum of 5 trees each of the candidate and reference varieties. The trial was planted in 2004 with trees spaced 3 meters apart within the row and approximately 5 meters apart between the rows.

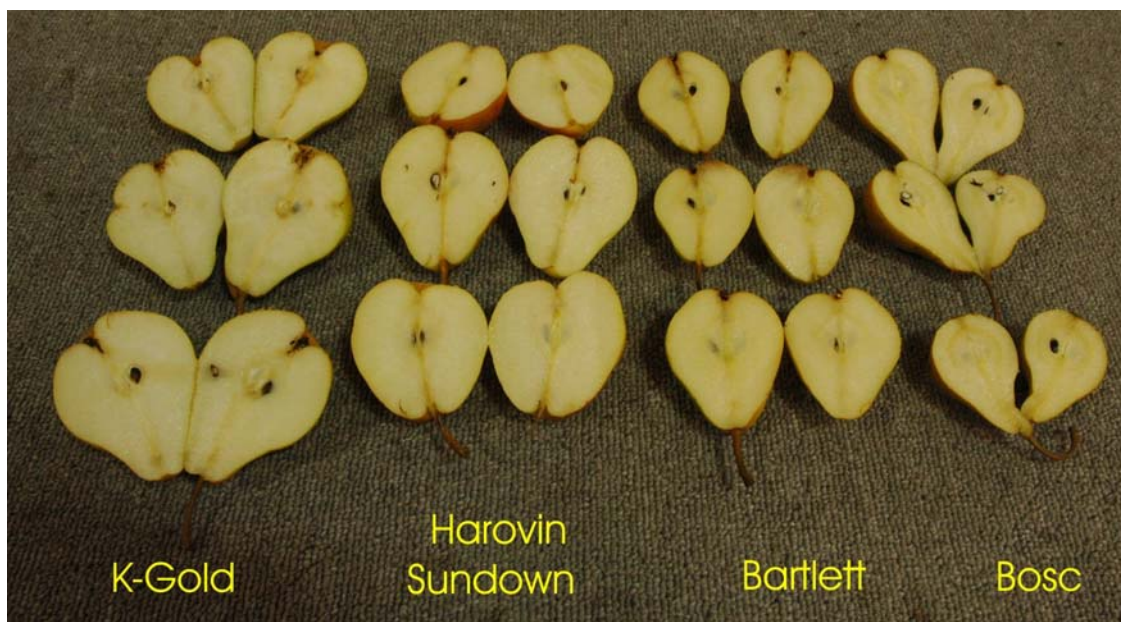
**Comparison table for 'K-Gold'**

	'K-Gold'	'Harovin Sundown'*	'Bartlett'*	'Bosc'*
<i>Leaf length (cm)</i>				
mean	7.80	6.60	7.26	7.58
std. deviation	1.10	0.85	0.69	0.63
<i>Petiole length (mm)</i>				
mean	43.73	50.53	42.91	43.85
std. deviation	12.12	7.49	9.36	9.07
<i>Length of fruit stalk (mm)</i>				
mean	41.99	47.39	35.04	53.3
std. deviation	4.46	8.19	5.22	5.50

\*reference varieties



Pear: 'K-Gold' (left) with reference varieties 'Harovin Sundown' (centre, left), 'Bartlett' (centre, right) and 'Bosc' (right)



Pear: 'K-Gold' (left) with reference varieties 'Harovin Sundown' (centre, left), 'Bartlett' (centre, right) and 'Bosc' (right)