SOYBEAN
(Glycine max)

Proposed denomination: **'OAC Merion'**
Application number: 08-6365
Application date: 2008/06/06
Applicant: University of Guelph, Guelph, Ontario
Breeder: Gary Ablett, Ridgetown College, University of Guelph, Ridgetown, Ontario

Varieties used for comparison: 'OAC Huron', 'DH410' and 'Katrina'

Summary: *'OAC Merion' has no anthocyanin colouration of the hypocotyl while 'DH410' has medium anthocyanin colouration. The leaf of 'OAC Merion' is dark green at flowering while it is medium green for 'Katrina' and light green for 'OAC Huron' and 'DH410'. 'OAC Merion' has a pointed ovate lateral leaflet while it is rounded ovate in shape for the reference varieties. The leaf blistering of 'OAC Merion' is medium while it is weak in 'OAC Huron' and absent or very weak in 'DH410'. 'OAC Merion' flowers earlier than 'Katrina'. The flower colour of 'OAC Merion' is white while it is purple in 'DH410'. 'OAC Merion' has a shorter plant height at maturity than 'DH410' and 'Katrina'. At maturity, the pod colour of 'OAC Merion' is tan while it is brown for 'Katrina'. 'OAC Merion' has a lower 100 seed weight than 'OAC Huron'. The seed of 'OAC Merion' has a dull lustre while it is shiny in 'DH410' and 'Katrina'. 'OAC Merion' has a yellow ground colour of the testa while it is light brown in 'Katrina'. The hilum of 'OAC Merion' is yellow while it is imperfect yellow in 'Katrina'. 'OAC Merion' has a small hilum while it is medium sized in 'OAC Huron' and 'Katrina'. The abscission layer is normal in 'OAC Merion' while it is lacking in 'DH410'. 'OAC Merion' matures later than 'DH410'. The seed of 'OAC Merion' has lower protein than 'DH410'.*

Description:
HYPOCOTYL: anthocyanin colouration absent

PLANT: indeterminate growth type, semi-erect growth habit, grey pubescence on middle third of main stem

LEAF: dark green at flowering, pointed ovate lateral leaflet shape, medium blistering

FLOWER: white

POD: tan

SEED: spherical rounded shape, medium size, dull lustre, yellow ground colour of testa, very small yellow hilum, yellow funicle, abscission layer normal

AGRONOMY: 2950 heat unit rating, good resistance to lodging

DISEASE REACTION: moderately resistant to Phytophthora rot (*Phytophthora megasperma* F. sp. *glycinea*), susceptible to cyst nematode race 3 (*Heterodera glycines*)

QUALITY: 42.4% protein, 18.4% oil

Origin and Breeding: 'OAC Merion' (experimental designation RCAT 0602) was derived from the cross CK-01 x A95-583010 made in 1999 at the University of Guelph, Guelph, Ontario. The early generations were advanced using the modified single seed descent method until the F4 generation where a single plant was selected for maturity and agronomic traits. The seed from this plant was harvested and maintained through pedigree selection until F4:F6 generation when 62 plants were selected for morphological uniformity. Each of these 62 plants were grown in separate breeder rows the following year. Fifty breeder rows were eventually bulked in the F8 generation in 2007 to produce breeder seed. 'OAC Merion' was evaluated in the Ontario Soybean Variety Trials in the 2800 Heat Unit Testing Area in 2006 and 2007.

Tests and Trials: Tests and Trials were conducted during the summers of 2008 and 2009 in Ridgetown, Ontario. In 2008, plots consisted of 5 rows with a row length of 3.8 meters and a row spacing of 42 cm. There were 3 replicates. In 2009, plots consisted of 12 rows with a row length of 6 meters and a row spacing of 18-20 cm. There were 3 replicates.

Comparison table for 'OAC Merion'

	'OAC Merion'	'OAC Huron'*	'DH410'*	'Katrina'*
Days to flowering				
mean	39	38	38	41
Plant height at maturity (cm)				
mean	81	84	93	90
std. deviation	10.724	9.684	9.855	9.714
100 Seed weight (gms)				
mean	16.7	19.7	16.7	17.3
Days to maturity				
mean	112	111	110	111
Protein content (%)				
mean	42.4	43.8	45.6	44.0

*reference varieties

Soybean: 'OAC Merion' (bottom left) with reference varieties 'Katrina' (bottom right), 'DH410' (top left) and 'OAC Huron' (top right)

Soybean: 'OAC Merion' (left) with reference variety 'DH410' (right)

Proposed denomination: **'S18-R6'**
Application number: 07-5741
Application date: 2007/02/12
Applicant: Syngenta Seeds Inc., Minneapolis, Minnesota, United States of America
Agent in Canada: Syngenta Seeds Canada, Inc., Arva, Ontario
Breeder: Don McClure, Syngenta Seeds Canada, Inc., Arva, Ontario

Varieties used for comparison: 'IA1008' and 'S18-Y4'

Summary: *'S18-R6' has medium intensity of anthocyanin colouration of the hypocotyl while 'IA1008' has no anthocyanin colouration of the hypocotyl. The flower colour of 'S18-R6' is purple while it is white for 'IA1008'. 'S18-R6' flowers later than 'IA1008' and 'S18-Y4'. The pod colour of 'S18-R6' is a tan colour while it is brown in 'IA1008' and 'S18-Y4'. 'S18-R6' matures later than 'S18-Y4'. The oil content of the seed of 'S18-R6' is lower than in 'S18-Y4'.*

Description:
HYPOCOTYL: medium anthocyanin colour

PLANT: indeterminate growth type, erect growth habit, grey pubescence on middle third of main stem

LEAF: medium green at flowering, rounded ovate lateral leaflet shape

FLOWER: purple

POD: tan

SEED: spherical flattened shape, medium size, dull lustre, yellow ground colour of testa, medium sized yellow hilum, yellow funicle, abscission layer normal

AGRONOMY: 2900 heat unit rating, good resistance to lodging, good resistance to shattering

DISEASE REACTION: resistance to cyst nematode race 3 and moderately resistance to race 14 (*Heterodera glycines*)

QUALITY: 40.4% protein, 19.4% oil

Origin and Breeding: 'S18-R6' (experimental designation 04DL186048) was derived from the cross 89694 / 62755 made during the summer of 2001 in Arva, Ontario. The F1-F2 generations were grown near Kekaha, Hawaii in the winter of 2001-2002. The F3 was grown in Arva, Ontario in the summer of 2002. The F4 generation was grown in a winter nursery in 2002-2003 and single plants were selected and threshed individually. The progeny were yield tested in a single replicate test in 2003 and one of these lines, identified as 04DL186048, was selected for further testing based on superior agronomic traits. The variety has been tested in multiple environments since 2004 in Ontario and the USA.

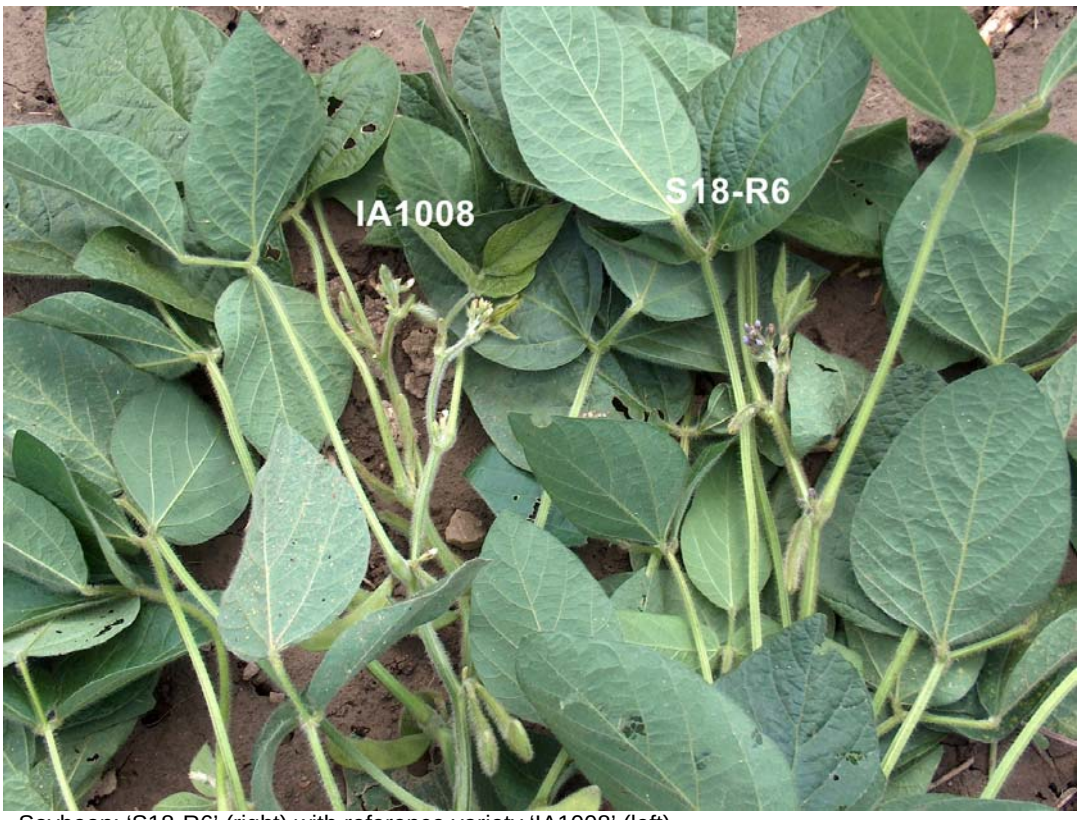
Tests and Trials: Tests and trials were conducted over the years 2005, 2006, 2007, 2008 in Arva, Ontario. Plots consisted of 2 rows, with a row length of 5 meters and a row spacing of 75 cm. There were 2 replicates each year.

Comparison table for 'S18-R6'

	'S18-R6'	**'IA1008'***	**'S18-Y4'***
Days to flowering			
mean	52	50	49
Days to maturity			
mean	120	120	118
Oil content of the seed (percent)			
mean	19.4	n/a	21.5

*reference varieties

Soybean: 'S18-R6' (left) with reference variety 'S18-Y4' (right)



Soybean: 'S18-R6' (right) with reference variety 'IA1008' (left)