



## APPLICATIONS UNDER EXAMINATION

## RAPESEED

### RAPESEED (*Brassica napus*)

**Proposed denomination:** 'PPS08-169 A-Line'  
**Application number:** 09-6699  
**Application date:** 2009/07/21  
**Applicant:** Bayer CropScience Inc., Saskatoon, Saskatchewan  
**Breeder:** Hieronim Polewicz, Bayer CropScience Inc., Saskatoon, Saskatchewan

Note: The applicant has requested an exemption from compulsory licensing to allow time to multiply and distribute propagating material of the variety. If the exemption is granted, it may be allowed for two years from the date rights are granted for the variety.

**Varieties used for comparison:** 'PPS01-140 A-Line', 'PPS02-144 A-Line' and '5020'

**Summary:** *The cotyledon of 'PPS08-169 A-Line' is longer and wider than that of 'PPS01-140 A-Line'. 'PPS08-169 A-Line' has a light green leaf colour while it is medium green in 'PPS01-140 A-Line' and '5020'. The leaf margin of 'PPS08-169 A-Line' has a very low to low density of dentations while they are of medium density for 'PPS02-144 A-Line' and '5020'. 'PPS08-169 A-Line' has a longer leaf petiole than that of 'PPS02-144 A-Line'. 'PPS08-169 A-Line' flowers earlier than 'PPS01-140 A-Line'. The flower petal of 'PPS08-169 A-Line' is longer and wider than that of 'PPS01-140 A-Line' but shorter and narrower than that of '5020'. 'PPS08-169 A-Line' has a longer silique than that of 'PPS01-140 A-Line' but shorter than that of '5020'. The beak of 'PPS08-169 A-Line' is longer than that of 'PPS01-140 A-Line' but shorter than that of 'PPS02-144 A-Line' and '5020'. 'PPS08-169 A-Line' has a longer pedicel than that of 'PPS01-140 A-Line'. The plant height of 'PPS08-169 A-Line' at maturity is shorter than that of 'PPS01-140 A-Line'. 'PPS08-169 A-Line' has higher erucic acid levels than that of the reference varieties. The seed of 'PPS08-169 A-Line' has a higher oil content than that of 'PPS01-140 A-Line' and 'PPS02-144 A-Line'.*

#### **Description:**

PLANT: male sterile inbred line, glufosinate ammonium tolerant, spring seasonal type, short to medium height at maturity

COTYLEDON: wide, medium to long

LEAF: light green, medium number of lobes, rounded margin, very low to low density of shallow dentations, medium length, medium to wide, medium length petiole

FLOWER PETALS: yellow, medium length, medium to wide

SILIQUE: semi-erect to horizontal attitude, medium to long, wide, medium to long beak, short to medium length pedicel

SEED: black

AGRONOMIC CHARACTERISTICS: fair resistance to lodging

QUALITY CHARACTERISTICS: erucic acid is 38.9% of total fatty acids, oil content is 50.9% of whole dried seed, protein is 28.7% of dried oil free meal, low glucosinolates (12.2  $\mu\text{mol/gm}$ )

DISEASE RESISTANCE: moderately resistant to Blackleg (*Leptosphaeria maculans* asexual stage: *Phoma lingam*) and resistant to White Rust (*Albugo candida*, races 7a & 2v)

**Origin and Breeding:** 'PPS08-169 A-line' is a male sterile inbred line used in F1 hybrid production, that contains the Ms8 gene construct in heterozygous state. The initial cross took place in Canada in 2000, with subsequent backcrosses occurring in 2003 and 2004. It was selected in 2005 and 2006 on the basis of male sterility stability, expression of tolerance to

glufosinate ammonium herbicide and good combining ability with numerous restorer lines. Other selection criteria included erucic acid content, height, vigour, maturity, blackleg resistance, oil content, fatty acid profile and glucosinolate content.

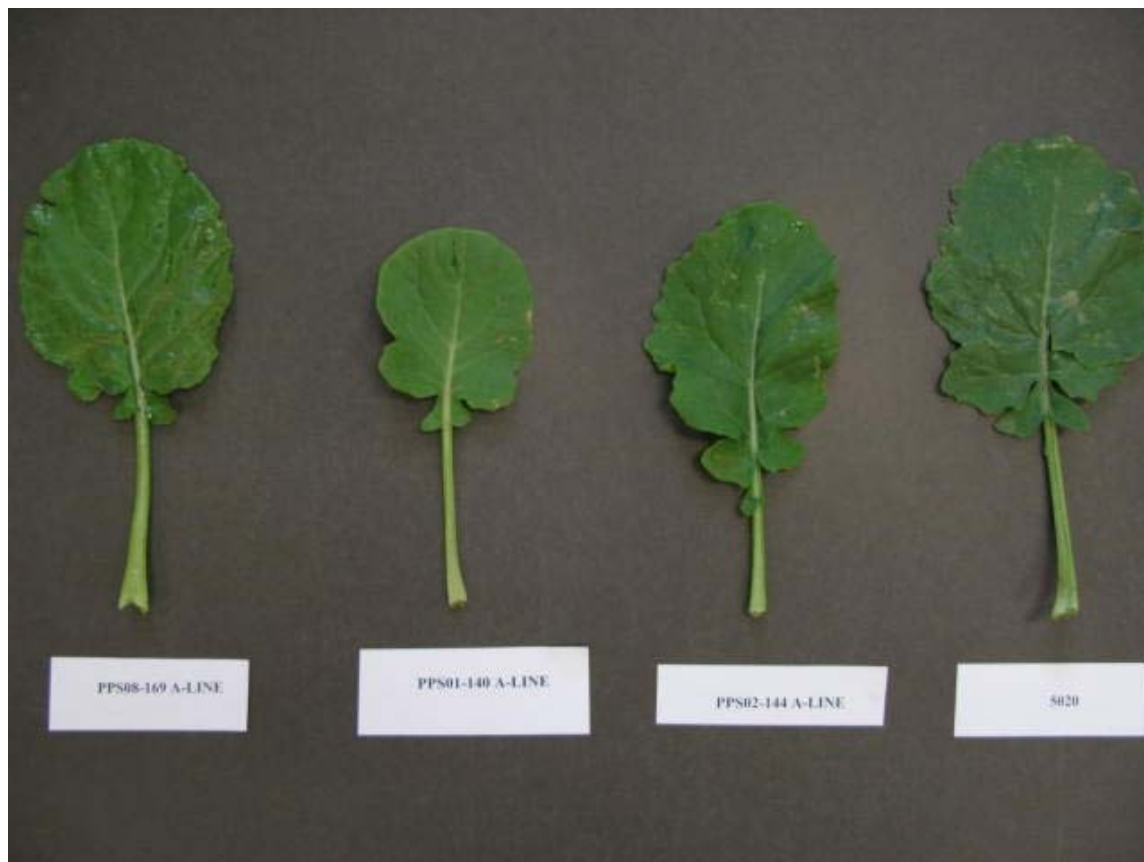
**Tests and Trials:** Trials were conducted during the summers of 2008 and 2009 in Saskatoon, Saskatchewan. Plots consisted of 3 rows with a row length of 6 meters and a row spacing of 50 cm. There were 3 replicates arranged in a RCB design.

**Comparison table for 'PPS08-169 A-Line'**

	'PPS08-169 A-Line'	'PPS01-140 A-Line'*	'PPS02-144 A-Line**	'5020**
<i>Cotyledon width (mm)</i>				
mean (LSD=3.8)	28.3	23.1	27.3	27.7
std. deviation	3.1	1.6	2.8	3.3
<i>Cotyledon length (mm)</i>				
mean (LSD=2.9)	16.5	12.4	15.7	15.8
std. deviation	2.8	0.9	1.4	1.5
<i>Petiole length (mm)</i>				
mean (LSD=17)	106	92	81	112
std. deviation	17	12.6	13.1	14.9
<i>Days to flowering</i>				
mean (LSD=2.4)	43.5	47.0	43.0	42.0
<i>Flower petal length (mm)</i>				
mean (LSD=1.2)	13.9	10.7	13.0	17.1
std. deviation	1.0	0.8	0.8	0.8
<i>Flower petal width (mm)</i>				
mean (LSD=0.91)	6.7	5.8	6.9	7.8
std. deviation	0.7	0.8	0.6	0.6
<i>Silique length (mm)</i>				
mean (LSD=2)	61.9	56.5	62.2	65.4
std. deviation	8.9	5.4	9.0	5.0
<i>Beak length (mm)</i>				
mean (LSD=0.6)	13.2	7.5	14.3	14.6
std. deviation	1.8	1.4	1.7	1.7
<i>Pediceal length (mm)</i>				
mean (LSD=1.6)	17.2	14.1	16.7	17.9
std. deviation	2.5	2.1	2.2	2.1
<i>Plant height at maturity (cm)</i>				
mean (LSD=12)	129	146	125	129
std. deviation	6.7	6.5	5.8	8.1
<i>Erucic Acid (% of total fatty acids)</i>				
mean	38.9	0.35	0.48	0.03
<i>Oil content of seed (%in whole dried seed)</i>				
mean (LSD=4.0)	50.9	45.4	46.0	48.9

Means are based on a two year average of 40 measurements for cotyledon characteristics, 30 for plant height and 60 plant parts for leaf, petiole, flower petal, silique, beak and pedicel characteristics. Differences are significant at the 2% probability level based on LSD values.

\*reference varieties



Rapeseed: 'PPS08-169 A-Line' (far left) with reference varieties 'PPS01-140 A-Line' (centre left), 'PPS02-144 A-Line' (centre right) and '5020' (far right)

**Proposed denomination:** 'PPS08-169 B-Line'  
**Application number:** 09-6700  
**Application date:** 2009/07/21  
**Applicant:** Bayer CropScience Inc., Saskatoon, Saskatchewan  
**Breeder:** Hieronim Polewicz, Bayer CropScience Inc., Saskatoon, Saskatchewan

Note: The applicant has requested an exemption from compulsory licensing to allow time to multiply and distribute propagating material of the variety. If the exemption is granted, it may be allowed for two years from the date rights are granted for the variety.

**Varieties used for comparison:** 'PPS01-140 B-Line', 'PPS02-144 B-Line' and '5020'

**Summary:** *The cotyledon of 'PPS08-169 B-Line' is longer and wider than that of 'PPS01-140 B-Line'. 'PPS08-169 B-Line' has a light green leaf colour while it is medium green in 'PPS01-140 B-Line' and '5020'. The leaf margin of 'PPS08-169 B-Line' has a very low to low density of dentations while it is medium density for '5020'. 'PPS08-169 B-Line' has a long petiole while it is short to medium for 'PPS02-144 B-Line'. The flower petal of 'PPS08-169 B-Line' is longer than that of 'PPS01-140 B-Line'. 'PPS08-169 B-Line' flowers earlier than that of 'PPS01-140 B-Line'. The silique of 'PPS08-169 B-Line' is longer than that of 'PPS01-140 B-Line' but shorter than that of '5020'. 'PPS08-169 B-Line' has a medium to long beak while it is short for 'PPS01-140 B-Line'. The plant height of 'PPS08-169 B-Line' at maturity is taller than that of 'PPS02-144 B-Line'. The seed of 'PPS08-169 B-Line' has higher erucic acid levels and oil content than the reference varieties.*

**Description:**

PLANT: male fertile inbred line, spring seasonal type, short to medium height at maturity

COTYLEDON: medium to wide, long

LEAF: light green, few to medium number of lobes, undulated to rounded margin, very low to low density of shallow dentations, medium length, medium width, long petiole

FLOWER PETALS: yellow, long, medium to wide

SILIQUE: semi-erect attitude, medium to long, wide, medium to long beak, medium length pedicel

SEED: black

AGRONOMIC CHARACTERISTICS: fair resistance to lodging

QUALITY CHARACTERISTICS: erucic acid is 44.0% of total fatty acids, oil content is 54.1% of whole dried seed, protein is 26.6% of dried oil free meal, low glucosinolates (10.3 umol/gm)

DISEASE RESISTANCE: moderately resistant to Blackleg (*Leptosphaeria maculans* asexual stage: *Phoma lingam*) and resistant to White Rust (*Albugo candida*, races 7a & 2v)

**Origin and Breeding:** 'PPS08-169 B-line' is a male fertile maintainer line of 'PPS08-169 A-line'. The initial cross took place in Canada in 2000, with subsequent backcrosses occurring in 2003 and 2004. 'PPS08-169 B-line' was selected in 2005 and 2006 on the basis of erucic acid content, height, vigour, maturity, blackleg resistance, oil content, fatty acid profile and glucosinolate content.

**Tests and Trials:** Trials were conducted during the summers of 2008 and 2009 in Saskatoon, Saskatchewan. Plots consisted of 3 rows with a row length of 6 meters and a row spacing of 50 cm. There were 3 replicates arranged in a RCB design.

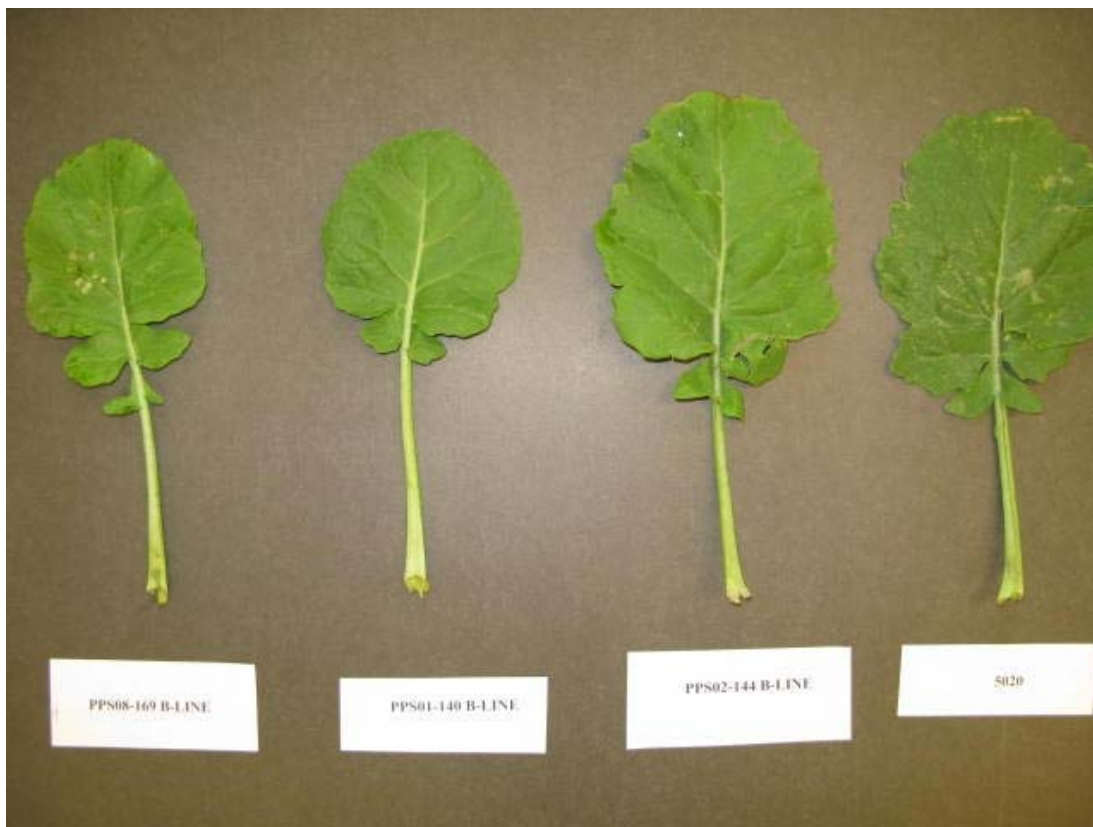
**Comparison table for 'PPS08-169 B-Line'**

	'PPS08-169 B-Line'	'PPS01-140 B-Line'*	'PPS02-144 B-Line'*	'5020'*
<i>Cotyledon width (mm)</i>				
mean (LSD=3.8)	29.2	25.4	29.8	27.7
std. deviation	2.8	1.9	3.1	3.3
<i>Cotyledon length (mm)</i>				
mean (LSD=2.9)	16.6	13.6	17.3	15.8
std. deviation	1.6	1.1	1.9	1.5
<i>Petiole length (mm)</i>				
mean (LSD=17)	119	110	98	112
std. deviation	19.5	13.8	13.1	14.9
<i>Days to flowering</i>				
mean (LSD=2.4)	42.5	45.0	41.5	42.0
<i>Flower petal length (mm)</i>				
mean (LSD=1.2)	16.8	14.6	17.3	17.1
std. deviation	0.9	0.7	1.1	0.8
<i>Silique length (mm)</i>				
mean (LSD=2)	61.1	57.4	62.3	65.4
std. deviation	6.2	4.0	5.5	5.0
<i>Beak length (mm)</i>				
mean (LSD=0.6)	13.3	8.5	15.5	14.6
std. deviation	1.4	1.4	1.6	1.7
<i>Plant height at maturity (cm)</i>				
mean (LSD=12)	125	135	111	129
std. deviation	7.3	6.1	6.3	8.1

<i>Erucic acid (% of total fatty acids)</i>				
mean	44.0	0.04	0.02	0.03
<i>Oil content of seed (% in whole dried seed)</i>				
mean (LSD=4.0)	54.1	46.1	49.6	48.9

Means are based on a two year average of 40 measurements for cotyledon characteristics, 30 for plant height and 60 plant parts for leaf, petiole, flower petal, silique, beak and pedicel characteristics. Differences are significant at the 2% probability level based on LSD values.

\*reference varieties



Rapeseed: 'PPS08-169 B-Line' (far left) with reference varieties 'PPS01-140 B-Line' (centre left), 'PPS02-144 B-Line' (centre right) and '5020' (far right)