



APPLICATIONS UNDER EXAMINATION

MUSTARD

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(*Brassica carinata*)

Proposed denomination: 'M06'
Application number: 17-9190
Application date: 2017/04/21
Applicant: Agrisoma Biosciences Inc., Gatineau, Quebec
Breeder: Rick Bennett, Agrisoma Biosciences 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: 'HP11' (Avanza 641), 'AAC A120' and 'M01'

Summary: *The seedling stem for 'M06' has a weak to medium intensity of anthocyanin colouration while that of 'AAC A120' has a medium to strong intensity. The cotyledon for 'M06' is shorter and narrower than the cotyledon of 'AAC A120'. The leaf of 'M06' is wider than the leaf of 'HP11' and 'M01'. At flowering, the plant of 'M06' is taller than the plant of 'M01'.*

Description:

PLANT: open pollinated, allotetraploid, erect growth habit, medium height at flowering, flowers mid-season to late in the season

SEEDLING: weak to medium intensity of anthocyanin colouration on stem

STEM: medium thickness

LEAF: elliptic shape, medium green, medium to many lobes, intermediate to rounded apex, undulating to rounded margin, shallow to medium dentations of margin, medium degree of glaucosity, absent or very sparse pubescence

FLOWER STALK: medium branching

PETALS: yellow, medium length and width

SILIQUE : erect attitude, medium width, short to medium length, medium length beak, medium length pedicel

SEED: medium number per silique, medium sized, round, predominantly yellow brown

AGRONOMIC CHARACTERISTICS: good resistance to lodging and to shattering

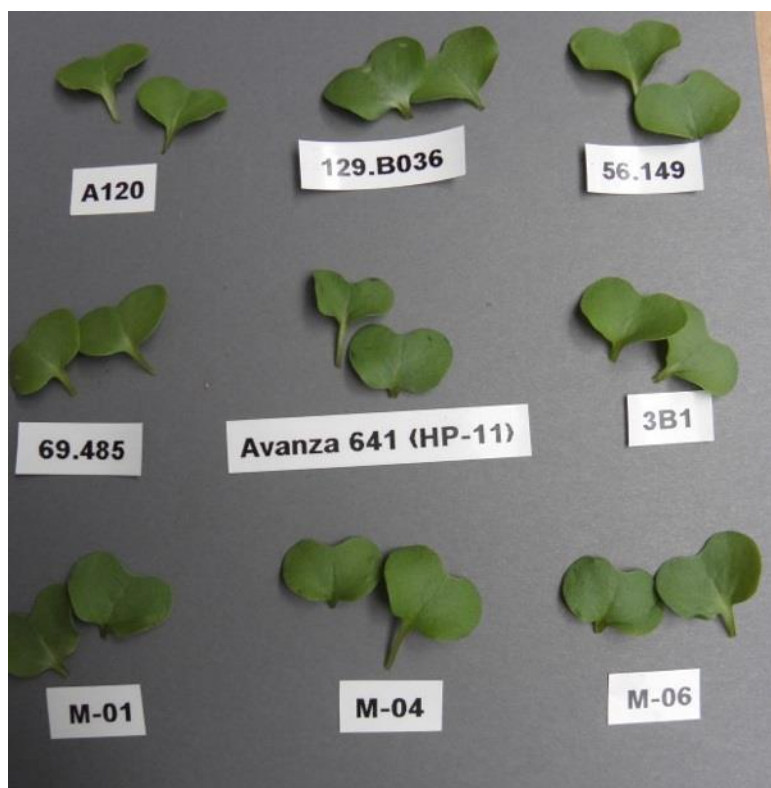
Origin and Breeding: 'M06' originated from Plant Gene Resources Canada Accession number CN101659. Seed from this accession was grown in the winter of 2011-2012 in a single row in a contra season nursery in Chile. A number of plant selections were performed from 2012 to 2013 based on seed oil content, glucosinate content, maturity and agronomic characteristics. Single plant selections were grown as single rows alternating between Swift Current, Saskatchewan, Canada and Chile from 2012 to 2013. In 2013, two plants were selected in Swift Current, Saskatchewan, based on high oil content and grown as single rows in Florida in 2013-2014. One row was selected for advancement on the basis of frost tolerance, and the seed was bulked for population development. Seed was selected from this bulk harvest on the basis of seed coat colour and grown in 2 isolation tents in Chile in 2014-2015 from which 500 plants were selected on the basis of seed coat colour and each grown in a single row in 2015. Fourteen rows were ultimately selected from these 500 rows based on agronomic appearance, seed colour and quality. Each of the 14 selections were grown in 2 field or tent isolation locations in Chile in 2015-2016 and were rogued to eliminate off-types. The seed harvested was colour sorted to remove brown seeds and formed the seed source for breeder seed plots.

Tests and Trials: The comparative trials for 'M06' were grown during the summers of 2016 and 2017 at AgQuest Farm, Saskatoon, Saskatchewan. Plots were arranged in a RCB design with 3 replicates for each variety each year. Each 8.0 metre squared plot consisted of 3 rows with a seeding density of 100 seeds per metre squared. The measured characteristics were based on 60 measurements per variety in 2016 and 30 measurements per variety in 2017. Mean differences were significant at the 2% probability level based on a Student's t-test.

Comparison table for 'M06'

	'M06'	'HP11'*	'AAC A120'*	'M01'*
<i>Cotyledon length (cm)</i>				
mean 2016	1.0	1.1	1.1	1.0
std. deviation 2016	0.09	0.12	0.15	0.11
mean 2017	1.1	1.1	1.2	1.1
std. deviation 2017	0.22	0.18	0.14	0.12
<i>Cotyledon width (cm)</i>				
mean 2016	1.7	1.8	1.8	1.7
std. deviation 2016	0.14	0.17	0.18	0.14
mean 2017	2.1	2.3	2.3	2.2
std. deviation 2017	0.22	0.43	0.26	0.20
<i>Leaf width (at widest point) (cm)</i>				
mean 2016	12.1	11.4	11.9	11.1
std. deviation 2016	1.39	1.56	1.44	1.17
mean 2017	10.8	9.9	10.2	8.8
std. deviation 2017	1.24	1.46	1.44	1.25
<i>Plant height at flowering (cm)</i>				
mean 2016	124.8	115.0	127.0	115.7
std. deviation 2016	12.2	14.1	16.5	15.2
mean 2017	90.7	82.2	93.9	79.3
std. deviation 2017	15.6	14.3	10.9	11.3

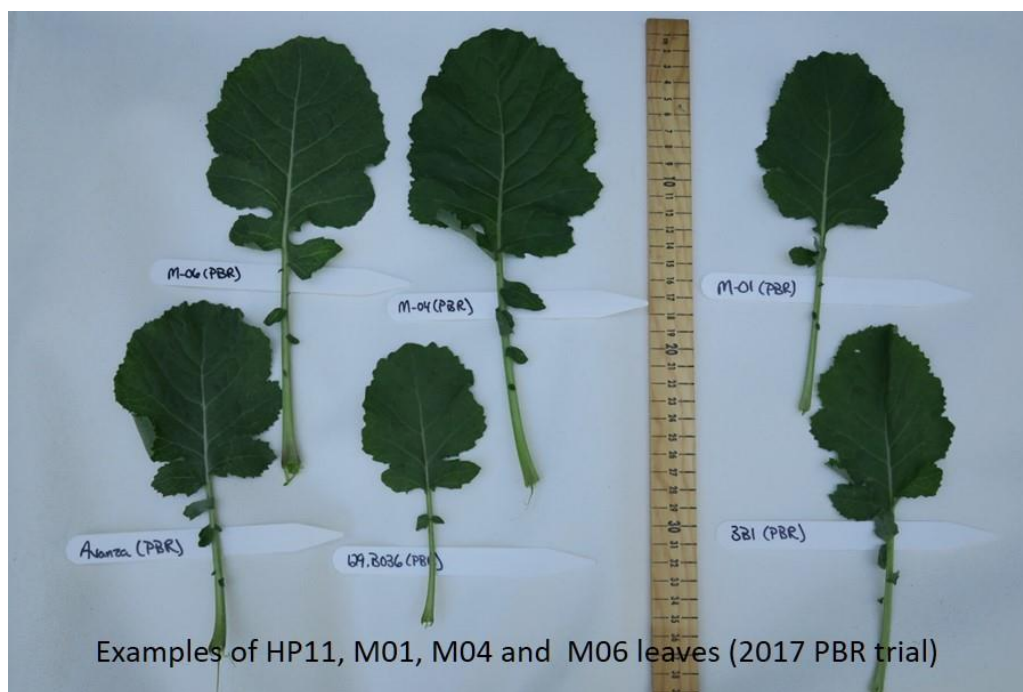
*reference varieties



Mustard: 'M06' (bottom right) with reference varieties 'HP11' (centre), 'AAC A120' (top left) and 'M01' (bottom left)



Mustard: 'M06' (far right) with reference varieties 'HP11' (3rd from left), 'AAC A120' (far left) and 'M01' (3rd from right)



Mustard: 'M06' (top left) with reference varieties 'HP11' (bottom left) and 'M01' (top right)