



APPLICATIONS UNDER EXAMINATION

PEA

PEA
(*Pisum sativum*)

Proposed denomination: 'AAC McMurphy'
Application number: 23-11334
Application date: 2023/05/03
Applicant: Agriculture & Agri-Food Canada, Lacombe, Alberta
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Deng-jin Bing, Agriculture & Agri-Food Canada, Lacombe, Alberta

Varieties used for comparison: 'AAC Lacombe' and 'CDC Golden'

Summary: *The stipule of 'AAC McMurphy' has a sparse to medium density of flecking while the stipule of 'CDC Golden' has medium to dense flecking. The petiole, from the axil to the first tendril, of 'AAC McMurphy' is longer than that of 'AAC Lacombe'. The maximum width of the standard on the flower of 'AAC McMurphy' is wider than that of 'CDC Golden'. The pod of 'AAC McMurphy' is longer than that of 'CDC Golden'. 'AAC McMurphy' has fewer ovules per pod than 'AAC Lacombe'. The one thousand seed weight for 'AAC McMurphy' is less than the one thousand seed weight of 'AAC Lacombe' and greater than that of 'CDC Golden'*

Description:

PLANT: field type, no anthocyanin colouration, no stem fasciation, green foliage, flowers mid-season

STEM: no anthocyanin colouration of axil, medium length, many to very many nodes up to and including the first fertile node

PETIOLE: medium to long

LEAF: leaflets absent

STIPULE: medium length and width, sparse to medium density of flecking

PEDUNCLE: medium to long from stem to first pod

FLOWER: maximum of two per node

STANDARD: medium width, level to moderately arched base

POD: medium length and width, entire parchment, blunt distal part, absent or very weak curvature, green, medium number of ovules

IMMATURE SEED: light green

SEED: ellipsoid, simple starch grains, yellow cotyledon, medium weight, matures mid to late season

HILUM: same colour as testa

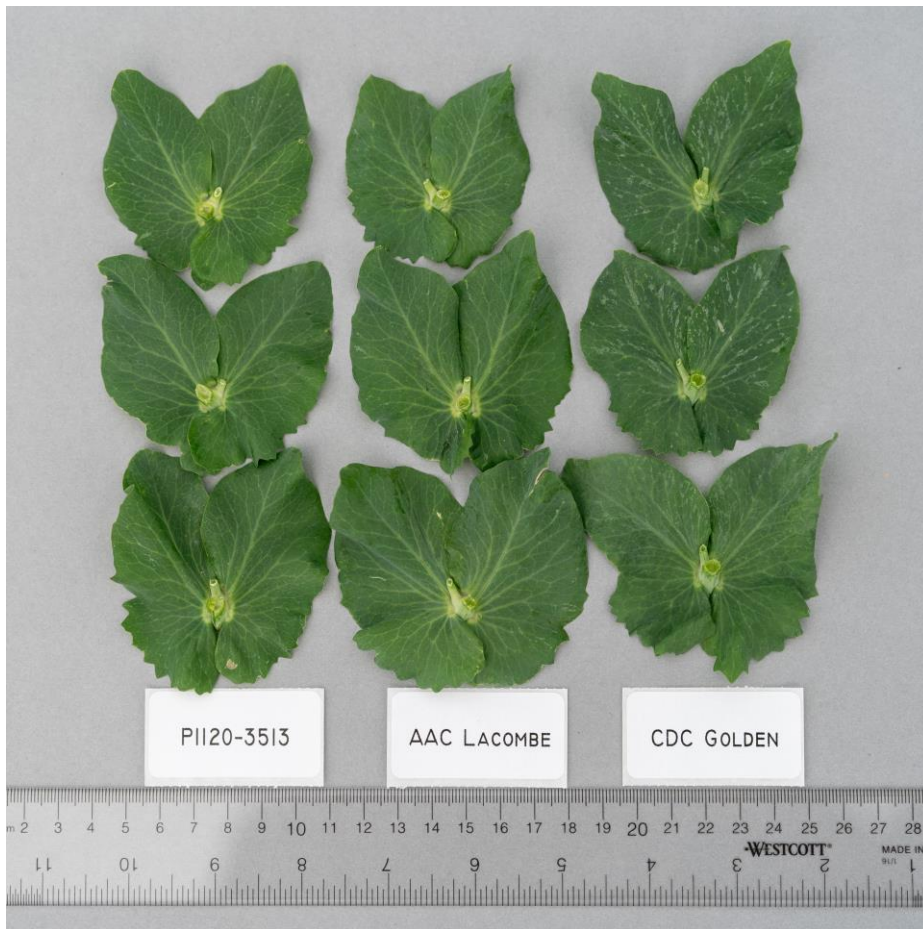
Origin and Breeding: 'AAC McMurphy' (experimental designation P1120-3513) originated from the cross between the lines MP1896 and CDC2351-3 conducted in 2011 at the Agriculture and Agri-Food Canada, Lacombe Research and Development Centre in Lacombe, Alberta. The variety was advanced from the F2 to F5 generation using a single seed decent method of plant breeding. One F7 line, selected based on lodging resistance, pod canopy, yield and maturity was designated P1120-3513 in 2017. The line was further assessed in multiple western Canada locations and entered in the Western Canada Field Pea Cooperative Registration Test B in 2020 and 2021. Breeder seed was established from a single F13 line in 2022.

Tests and Trials: The comparative tests and trials for 'AAC McMurphy' were conducted at the Agriculture and Agri-Food Canada, Lacombe Research and Development Centre, in Lacombe, Alberta, in 2022 and 2023. The trials consisted of 4 replicates in a RCB design. Each replicate consisted of 4 rows spaced 25 cm apart, with a row length of 5 metres and a planting density of 85 viable seeds per square metre. The measured characteristics were based on 20 measurements per variety per year. The mean differences were significant at the 5% confidence probability level based on a paired Student's t-test.

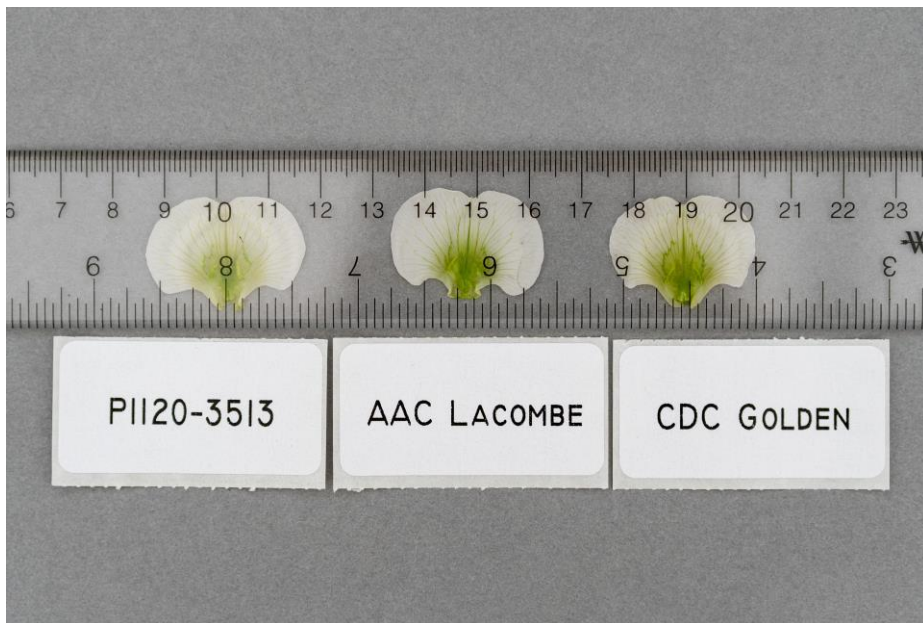
Comparison table for 'AAC McMurphy'

	'AAC McMurphy'	'AAC Lacombe'*	'CDC Golden'*
<i>Petiole length (length from first axil to the first leaflet or tendril) (cm)</i>			
mean (2022)	8.65	7.74	9.02
std. deviation (2022)	0.98	0.93	0.77
mean (2023)	10.25	9.11	10.53
std. deviation (2023)	1.18	0.61	1.17
<i>Maximum width of flower standard (cm)</i>			
mean (2022)	2.94	3.09	2.79
std. deviation (2022)	0.15	0.20	0.18
mean (2023)	3.18	3.25	2.93
std. deviation (2023)	0.34	0.16	0.17
<i>Pod length (at second fertile node) (cm)</i>			
mean (2022)	6.69	7.03	6.22
std. deviation (2022)	0.58	0.50	0.45
mean (2023)	6.84	7.74	6.40
std. deviation (2023)	0.39	0.50	0.40
<i>Number of ovules per pod (count)</i>			
mean (2022)	7.3	8.2	7.0
std. deviation (2022)	0.5	0.5	0.5
mean (2023)	7.9	8.7	7.4
std. deviation (2023)	0.5	0.5	0.7
<i>Seed weight (grams per 1000 seeds) (g)</i>			
mean (2022)	258	265	214
std. deviation (2022)	2.1	3.8	5.4
mean (2023)	252	278	216
std. deviation (2023)	2.5	1.2	2.9

*reference varieties



Pea: 'AAC McMurphy' (left) with reference varieties 'AAC Lacombe' (centre) and 'CDC Golden' (right)



Pea: 'AAC McMurphy' (left) with reference varieties 'AAC Lacombe' (centre) and 'CDC Golden' (right)