



APPLICATIONS UNDER EXAMINATION

OAT

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(*Avena sativa*)

Proposed denomination: 'AAC Banner'
Application number: 17-9269
Application date: 2017/07/11
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Lacombe, Alberta
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

Varieties used for comparison: 'AAC Nicolas' and 'Leggett'

Summary: *At the 5 to 9 tiller stage, the juvenile growth habit of 'AAC Banner' is intermediate between semi-erect and semi-prostrate whereas that of 'Leggett' is semi-erect. At booting, the pubescence of the margin on the leaf below the flag leaf is of medium density for 'AAC Banner' whereas the pubescence is absent to very sparse on the margin of 'AAC Nicolas'. The flag leaf of 'AAC Banner' is longer and wider than that of 'Leggett'. 'AAC Banner' heads earlier than 'AAC Nicolas'. At the green stage, the panicle density of 'AAC Banner' is lax whereas it is of medium density for 'AAC Nicolas'. The panicle of 'AAC Banner' is longer than that of 'Leggett'. The attitude of the panicle branches of 'AAC Banner' is horizontal whereas that of 'AAC Nicolas' is semi-erect and that of 'Leggett' is drooping. The tendency of the lemmas to be awned on 'AAC Banner' is absent to very weak whereas the lemmas on 'AAC Nicolas' have a medium tendency to be awned.*

Description:

PLANT: spring hulled type, juvenile growth habit is intermediate between semi-erect and semi-prostrate, sparse pubescence on lower leaf sheath and blade, medium frequency of plants with recurved flag leaves at booting

STEM (AT MATURITY): absent to very sparse pubescence above and below upper culm node at booting

LEAF: medium intensity of glaucosity at green stage, medium green, medium density of pubescence of margin

FLAG LEAF: medium length and width

PANICLE: medium length, equilateral/symmetrical orientation, lax, horizontal attitude of branches, 30 to 45 degree angle between dominant side branch and rachis, absent or very few hairs or spines on lowest node

GLUME: medium glaucosity, medium length and width

SPIKELET: semi-abscission separation, semi-nodding attitude, 2 grains

RACHILLA: medium length between primary and secondary floret, absent or very short length of grooves, sparse pubescence

LEMMA: medium glaucosity, small extent of lateral overlap on palea, white at maturity, medium density of pubescence on lateral and dorsal surface, absent to very weak tendency to be awned

KERNEL: medium size, medium to long, medium to wide, basal hairs absent, cream with light brown at base

GROAT: medium density of pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: fair resistance to lodging

DISEASE REACTIONS: resistant to Crown rust (*Puccinia coronata*)

Origin and Breeding: 'AAC Banner' (experimental designation OA1367-3) originated from the cross made between 'Prescott' (female parent) and 'Leggett' (male parent) at the Agriculture and Agri-Food Canada Ottawa Research and Development Centre in Ottawa, Ontario in January of 2007. Developed using a modified single seed descent method, it was advanced to the F4 generation in the greenhouses from 2007 to 2008. About 600 seeds were planted into cones in each generation. In 2009, 188 panicle-hills were grown in the field. Of the 29 lines selected and tested in the 2010 Observation Nursery, 10 of these lines were advanced to the 2011 Ottawa Research and Development Centre Home Test conducted at three locations in Eastern Canada. 6 of the 10 lines were advanced to the preliminary nationwide trials in 2012 whereas 3 of

the 6 lines were advanced to the Ottawa Research and Development Centre trials in 2013. A single line, designated as OA1367-3, was further tested in the Ottawa Research and Development Centre oat registration trials in 2014 and 2016. Selection criteria included yield, rust resistance, kernel weight, test weight, lodging resistance; groat, oil and protein content.

Tests and Trials: The comparative trials for ‘AAC Banner’ were conducted during the 2016 and 2017 growing seasons at the Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario. The plots consisted of 4 replicates per variety consisting of 6 rows measuring 3.8 metres long with a row spacing of 18 cm. The planting density was 330 plants per metre square. For each variety, the measurements were based on a minimum of 20 measurements per year. The mean differences are significant at the 5% probability level based on a paired Student’s T-test.

Comparison table for ‘AAC Banner’

	‘AAC Banner’	‘AAC Nicolas’*	‘Leggett’*
<i>Flag leaf length (cm)</i>			
mean 2016	22.8	25.2	15.4
std. deviation 2016	3.5	4.6	2.8
mean 2017	18.1	15.7	12.4
std. deviation 2017	3.7	2.5	2.2
<i>Flag leaf width (mm)</i>			
mean 2016	14.5	13.5	11.3
std. deviation 2016	2.2	3.4	2.6
mean 2017	15.0	10.8	10.8
std. deviation 2017	1.7	1.3	1.5
<i>Days to heading (when 50% of panicles are fully emerged)</i>			
mean 2016	59	61	58
mean 2017	59	61	58
<i>Panicle length (cm)</i>			
mean 2016	17.0	18.2	14.9
std. deviation 2016	1.6	2.9	1.4
mean 2017	18.4	16.9	15.0
std. deviation 2017	1.9	1.9	1.4
*reference varieties			



Oat: 'AAC Banner' (left) with reference varieties 'AAC Nicolas' (centre) and 'Leggett' (right)