



APPLICATIONS UNDER EXAMINATION

OAT

OAT

(*Avena sativa*)

Proposed denomination: 'AAC Anthony'
Application number: 22-10911
Application date: 2022/05/05
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

Varieties used for comparison: 'AAC Nicolas' and 'CDC Orrin'

Summary: *The flag leaf of 'AAC Anthony' is shorter than the flag leaf of 'AAC Nicolas'. The plants of 'AAC Anthony' head later than the plants of 'CDC Orrin'. The glume of 'AAC Anthony' has a medium degree of glaucosity while that of 'AAC Nicolas' has weak glaucosity. At maturity, the 1000 kernel weight of 'AAC Anthony' is greater than that of 'AAC Nicolas'. The kernel of 'AAC Anthony' is longer and wider than that of 'AAC Nicolas'.*

Description:

PLANT: hulled spring type, intermediate growth habit at 5 to 9 tiller stage, medium frequency of plants with recurved flag leaves at booting

STEM: medium to dense pubescence above upper culm node, medium density of pubescence below upper culm node

LOWER LEAF: absent to very sparse pubescence on sheath and blade at the 5 to 9 tiller stage

LEAF (AT BOOTING): medium green, absent or very sparse pubescence on margin of leaf below flag leaf, medium glaucosity at green stage

PANICLE (SHORTLY AFTER HEADING): equilateral/symmetrical orientation of branches, medium density, semi-erect attitude of branches, less than 30 degree angle between rachis and dominant side branch

LOWEST PANICLE NODE: few hairs or spines

SPIKELET: semi-abscission type separation, semi-nodding attitude, two grains

GLUME: medium glaucosity

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

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

KERNEL: no basal hairs, white

GROAT: medium density of pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: fair lodging resistance

Origin and Breeding: 'AAC Anthony' (experimental designation OA1627-1) originated from a cross conducted between two lines designated SA100100 and OA1331-5-5 at the Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario on November 11, 2013. The line was advanced from the F1 to F4 generation in the greenhouse, and a population of 240 F4:5 panicles were grown as hill plots in 2015. After visual selection in 2015 and 2016 and yield trials in 2017-2018 and 2019-2020, an F5 line was designated as OA1627-1 in 2017. Selection criteria used in the development of 'AAC Anthony' were based on plant and seed characteristics, yield, agronomic and quality data. Breeder seed was established at the F5:10 generation in 2020.

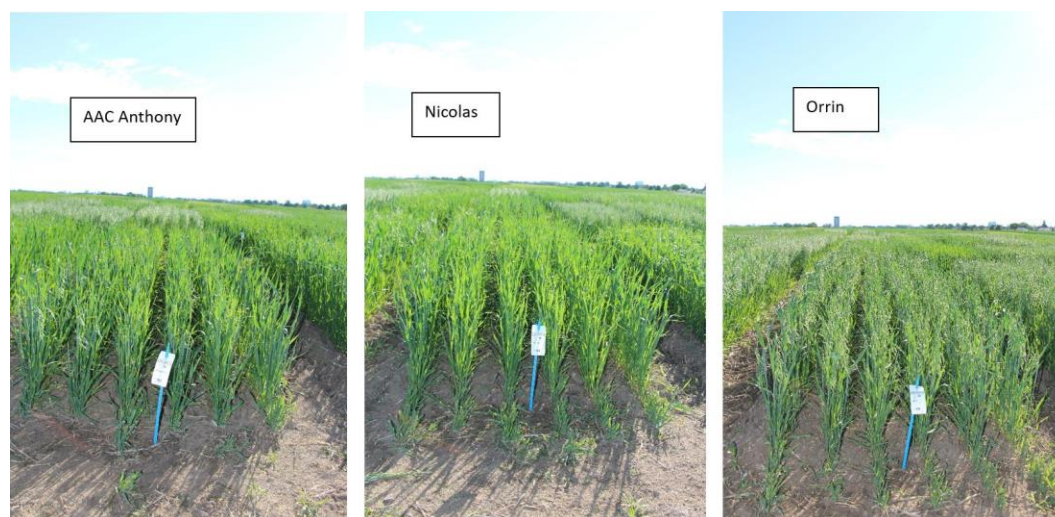
Tests and Trials: The comparative trials for 'AAC Anthony' were conducted at Agriculture and Agri-Food Canada, Central Experimental Farm in Ottawa Ontario in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each plot consisted of 6 rows spaced 18 cm apart, with a row length of 3.8 metres. The

planting density of 350 seeds per square metre resulted in approximately 5600 plants per variety per year. Measured characteristics were based on a minimum of 20 measurements per variety per year except for kernel weight which was based on a minimum of 4 measurements per variety per year. Mean differences were significant at the 5% probability level based on a paired Student's t-test.

Comparison table for 'AAC Anthony'

	'AAC Anthony'	'AAC Nicolas'*	'CDC Orrin'*
<i>Flag leaf length (at booting) (cm)</i>			
mean (2021)	15.3	18.4	16.2
std. deviation (2021)	2.3	3.4	2.5
mean (2022)	22.9	27.9	22.1
std. deviation (2022)	3.7	4.0	3.6
<i>Days to heading (number of days from planting to 50% of heads fully emerged)</i>			
mean (2021)	68	69	66
mean (2022)	61	60	59
<i>Kernel weight (grams per 1000 kernels) (g)</i>			
mean (2021)	38.1	30.4	37.7
std. deviation (2021)	1.3	0.6	0.4
mean (2022)	31.2	27.0	30.9
std. deviation (2022)	1.0	0.4	0.7
<i>Kernel length (primary grain) (mm)</i>			
mean (2021)	18.6	16.6	18.4
std. deviation (2021)	0.9	1.0	0.9
mean (2022)	15.5	14.8	15.2
std. deviation (2022)	1.1	0.7	0.9
<i>Kernel width (primary grain) (mm)</i>			
mean (2021)	3.9	3.5	3.7
std. deviation (2021)	0.4	0.5	0.5
mean (2022)	3.2	2.7	3.0
std. deviation (2022)	0.4	0.5	0.0

*reference varieties



Oat: 'AAC Anthony' (left) with reference varieties 'AAC Nicolas' (centre) and 'CDC Orrin' (right)



Oat: 'AAC Anthony' (left) with reference varieties 'AAC Nicolas' (centre) and 'CDC Orrin' (right)

Proposed denomination: 'AAC Basil'
Application number: 22-10912
Application date: 2022/05/05
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

Varieties used for comparison: 'AAC Nicolas', 'Akina' and 'AAC Wight'

Summary: *At the 5-9 tiller stage, the plants of 'AAC Basil' have an intermediate growth habit while the plants of 'Akina' have an erect growth habit. The leaf below the flag leaf of 'AAC Basil' has sparse pubescence on the margin while the leaf below the flag leaf of 'AAC Nicolas' has a medium density of pubescence on the margin and that of 'Akina' has absent or very sparse pubescence on the margin. 'AAC Basil' has a medium frequency of plants with recurved flag leaves while 'Akina' has a low frequency of plants with recurved flag leaves. The flag leaf of 'AAC Basil' is shorter than those of 'AAC Nicolas' and 'AAC Wight'. The pubescence on the stem above the upper culm node of 'AAC Basil' is absent or very sparse while it is dense for 'AAC Nicolas' and medium to dense for 'AAC Wight'. The pubescence on the stem below the upper culm node of 'AAC Basil' is absent or very sparse while it is of a medium density for 'AAC Nicolas' and 'AAC Wight'. The plants of 'AAC Basil' head earlier than the plants of 'AAC Nicolas' and 'AAC Wight'. The glume of 'AAC Basil' has a medium degree of glaucosity while that of 'AAC Nicolas' has weak glaucosity. The panicle of 'AAC Basil' is shorter than that of 'AAC Nicolas'. The branches on the panicle of 'AAC Basil' have an erect attitude while those of the reference varieties have a semi-erect attitude. At maturity, the lower glume of 'AAC Basil' is shorter than those of 'AAC Nicolas' and 'Akina'. At maturity, the lemma of 'AAC Basil' has a medium tendency to be awned while the lemma of 'AAC Wight' has an absent or very weak to weak tendency to be awned. The 1000 kernel weight of 'AAC Basil' is greater than that of 'AAC Nicholas'. At maturity, the kernel of 'AAC Basil' is shorter than the kernel of 'Akina'.*

Description:

PLANT: hulled spring type, intermediate growth habit at 5 to 9 tiller stage, medium frequency of plants with recurved flag leaves at booting

STEM: absent to very sparse pubescence above and below upper culm node

LOWER LEAF: absent to very sparse pubescence on sheath and blade at the 5 to 9 tiller stage

LEAF (AT BOOTING): medium green, sparse pubescence on margin of leaf below flag leaf, medium glaucosity at green stage

PANICLE (SHORTLY AFTER HEADING): equilateral/symmetrical orientation of branches, medium density, erect attitude of branches, less than 30 degree angle between rachis and dominant side branch

LOWEST PANICLE NODE: few hairs or spines

SPIKELET: semi-abscission type separation, semi-nodding attitude, two grains

GLUME: medium glaucosity

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

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

KERNEL: no basal hairs, white

GROAT: medium density of pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: fair lodging resistance

Origin and Breeding: ‘AAC Basil’ (experimental designation OA1644-13) originated from a three way cross conducted at the Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario. The first cross was conducted on November 16, 2013 between the varieties ‘Akina’ and ‘AAC Nicolas’. The resulting progeny were crossed with the line SA100217 on October 3, 2014, resulting in 180 hybrid seeds. The F1 plants were grown and harvested individually; 10 plants were grown for each F2 individual, leading to 1800 F2:3 plants. One panicle was harvested from each plant and seeded as hill plots in 2016. The F3 lines were visually selected in 2017 and entered in yield trials from 2018 to 2021. One of the selected F3 lines was designated OA1644-13 in 2018. Selection criteria used in the development of ‘AAC Basil’ were based on plant and seed appearance and yield..Breeder seed was established at the F10 generation in 2021.

Tests and Trials: The comparative trials for ‘AAC Basil’ were conducted at Agriculture and Agri-Food Canada, Central Experimental Farm in Ottawa Ontario in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each plot consisted of 6 rows spaced 18 cm apart, with a row length of 3.8 metres. The planting density of 350 seeds per square metre resulted in approximately 5600 plants per variety per year. Measured characteristics were based on a minimum of 20 measurements per variety per year except for kernel weight which was based on a minimum of 4 measurements per variety per year. Mean differences were significant at the 5% probability level based on a paired Student’s t-test.

Comparison table for ‘AAC Basil’

	‘AAC Basil’	‘AAC Nicolas’*	‘Akina’*	‘AAC Wight’*
<i>Flag leaf length (at booting) (cm)</i>				
mean (2021)	15.7	18.4	16.4	17.7
std. deviation (2021)	1.8	3.4	4.5	2.2
mean (2022)	21.9	27.9	23.5	25.0
std. deviation (2022)	3.0	4.0	4.0	3.3
<i>Days to heading (number of days from planting to 50% of heads fully emerged)</i>				
mean (2021)	63	69	62	66
mean (2022)	57	60	56	59
<i>Panicle length (at green stage) (cm)</i>				
mean (2021)	15.0	19.1	17.1	15.6
std. deviation (2021)	1.4	0.9	2.0	1.0
mean (2022)	19.5	22.6	21.1	19.5
std. deviation (2022)	1.2	4.0	4.0	1.3
<i>Lower glume length (primary grain) (mm)</i>				
mean (2021)	20.3	22.3	21.8	21.4
std. deviation (2021)	1.9	2.0	1.7	2.6
mean (2022)	21.8	23.0	24.0	24.0
std. deviation (2022)	1.3	1.5	1.6	0.7

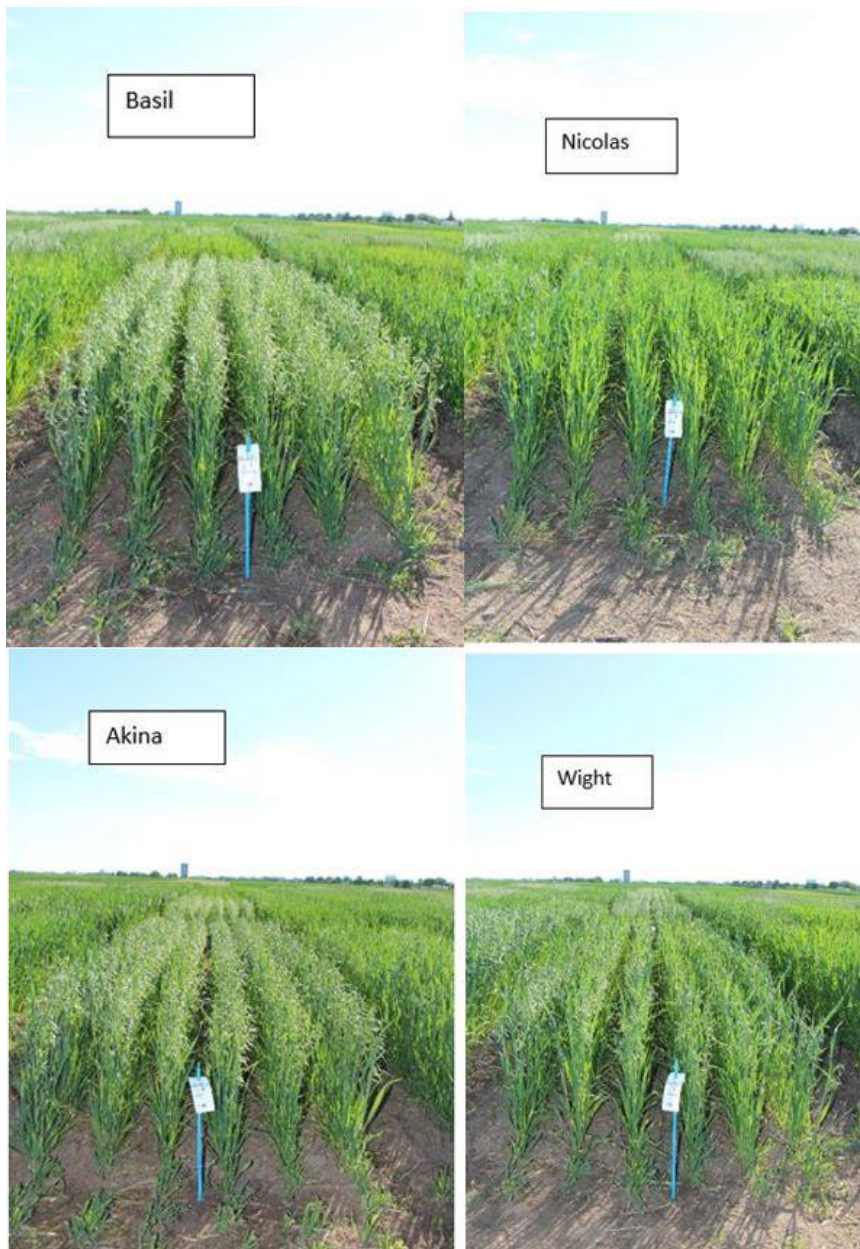
Kernel weight (grams per 1000 kernels) (g)

mean (2021)	35.5	30.5	34.9	35.2
std. deviation (2021)	0.8	0.6	1.2	0.6
mean (2022)	31.7	27.0	29.8	31.2
std. deviation (2022)	0.8	0.4	0.3	1.0

Kernel length (primary grain) (mm)

mean (2021)	16.9	16.6	18.8	16.4
std. deviation (2021)	1.3	1.0	0.7	0.7
mean (2022)	15.0	14.8	15.7	14.9
std. deviation (2022)	0.7	0.7	1.0	1.1

*reference varieties



Oat: 'AAC Basil' (top left) with reference varieties 'AAC Nicolas' (top right), 'Akina' (bottom left) and 'AAC Wight' (bottom right)



Oat: 'AAC Basil' (top left) with reference varieties 'AAC Nicolas' (top centre), 'Akina' (top right) and 'AAC Wight' (bottom left)

Proposed denomination: 'AAC Captain'
Application number: 22-10907
Application date: 2022/05/05
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

Varieties used for comparison: 'AAC Reid' and 'Hidalgo'

Summary: At booting, the leaf below the flag leaf of 'AAC Captain' has absent to very sparse pubescence on the margin while that of 'Hidalgo' has sparse pubescence on the margin. The stem above and below the upper culm node of 'AAC Captain' has absent to very sparse pubescence while the stem above and below the upper culm node of 'Hidalgo' has a medium density of pubescence. The branches on the panicle of 'AAC Captain' have a horizontal attitude while those of 'AAC Reid' and 'Hidalgo' have a semi-erect attitude. At the green stage, the angle between the rachis and dominant side branch on the panicle of 'AAC Captain' is 30 to 45 degrees while the angle is less than 30 degrees for 'AAC Reid' and 'Hidalgo'. At maturity, the lemma of 'AAC Captain' has an absent or very weak to weak tendency to be awned while that of 'AAC Reid' has a weak to medium tendency to be awned.

Description:

PLANT: hulled spring type, semi-erect growth habit at 5 to 9 tiller stage, medium frequency of plants with recurved flag leaves at booting

STEM: absent to very sparse pubescence above and below the upper culm node

LOWER LEAF: absent to very sparse pubescence on sheath and blade at the 5 to 9 tiller stage

LEAF (AT BOOTING): medium green, absent or very sparse pubescence on margin of leaf below flag leaf, medium glaucosity at green stage

PANICLE (SHORTLY AFTER HEADING): equilateral/symmetrical orientation of branches, medium density, horizontal attitude of branches, 30 to 45 degree angle between rachis and dominant side branch

LOWEST PANICLE NODE: few short hairs or spines

SPIKELET: fracture type separation, semi-nodding attitude, two grains

GLUME: weak glaucosity

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

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

KERNEL: short basal hairs, white

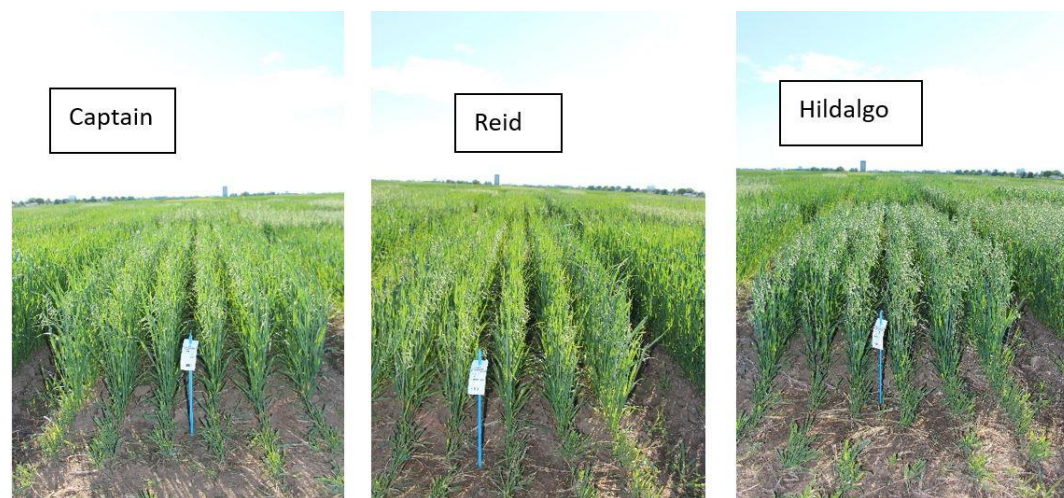
GROAT: medium density of pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: good resistance to lodging

Origin and Breeding: ‘AAC Captain’ (experimental designation OA1444-5-19) was developed using a modified single seed descent method followed by a pedigree method of plant breeding. ‘AAC Captain’ originated from a cross between the variety ‘Hidalgo’ and the line OA1271-3 conducted on November 8, 2010 at Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario. The line was advanced from F1 to F4 based on visual selection, followed by multi-location yield trials for three years. In 2017, one F7 line was designated as OA1444-5. Fifty F7 panicles were selected and grown as hill plots in 2018. A single F8 line was designated as OA1444-5-19 based on hull colour and crown rust resistance, and was tested in the 2018-2020 registration trials. Breeder seed was established at the F10 generation in 2023.

Tests and Trials: The comparative trials for ‘AAC Captain’ were conducted at Agriculture and Agri-Food Canada, Central Experimental Farm in Ottawa Ontario in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each plot consisted of 6 rows spaced 18 cm apart, with a row length of 3.8 metres. The planting density of 350 seeds per square metre resulted in approximately 5600 plants per variety per year.



Oat: ‘AAC Captain’ (left) with reference varieties ‘AAC Reid’ (centre) and ‘Hidalgo’ (right)



Oat: 'AAC Captain' (left) with reference varieties 'Hidalgo' (centre) and 'AAC Reid' (right)

Proposed denomination: 'AAC Loki'
Application number: 22-10908
Application date: 2022/05/05
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

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

Summary: *At booting, the leaf of 'AAC Loki' is narrower than the flag leaf of 'AAC Blake' and shorter than that of 'AAC Nicolas'. The glume and lemma of 'AAC Loki' have a medium degree of glaucosity while those of 'AAC Nicolas' have weak glaucosity. The 1000 kernel weight of 'AAC Loki' is greater than that of 'AAC Nicholas'. At maturity, the kernel of 'AAC Loki' is longer than those of the reference varieties.*

Description:

PLANT: hulled spring type, intermediate growth habit at 5 to 9 tiller stage, medium frequency of plants with recurved flag leaves at booting

STEM: medium to dense pubescence above upper culm node and sparse pubescence below upper culm node

LOWER LEAF: absent to very sparse pubescence on sheath and blade at the 5 to 9 tiller stage

LEAF (AT BOOTING): medium green, absent or very sparse pubescence on margin of leaf below flag leaf, absent or very weak to weak glaucosity at green stage

PANICLE (SHORTLY AFTER HEADING): equilateral/symmetrical orientation of branches, medium density, semi-erect attitude of branches, less than 30 degree angle between rachis and dominant side branch

LOWEST PANICLE NODE: few hairs or spines

SPIKELET: semi-abscission type separation, semi-nodding attitude, two grains

GLUME: medium glaucosity

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

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

KERNEL: no basal hairs, white
 GROAT: medium density of pubescence
 SCUTELLUM: pointed tip, medium size

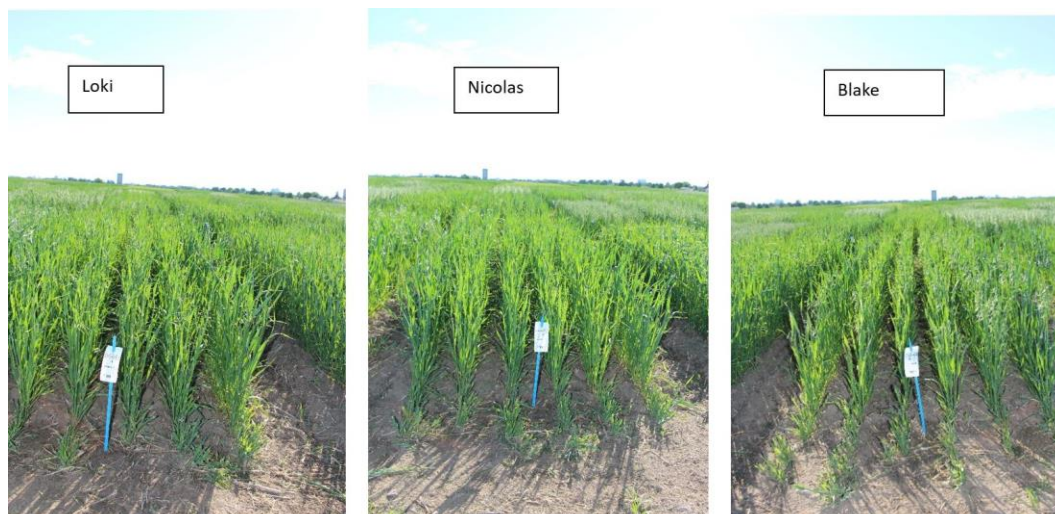
Origin and Breeding: ‘AAC Loki’ (experimental designation OA1609-7) was developed using a modified single seed descent method followed by a mixed selection method of plant breeding. ‘AAC Loki’ originated from a cross between the varieties ‘AAC Nicolas’ and ‘AAC Blake’ conducted on October 22, 2012 at Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario. The line was advanced from F1 to F4 generation in the greenhouse without intended selection. Morphological selection started with 183 F4:5 panicles grown as hill plots in 2014, followed by selection for yield and quality in yield trials from 2016 to 2019. An F4:7 line, designated as OA1609-7 in 2016, was selected based on yield, plant and seed characteristics. Breeder seed was established at the F7 generation in 2020.

Tests and Trials: The comparative trials for ‘AAC Loki’ were conducted at Agriculture and Agri-Food Canada, Central Experimental Farm in Ottawa Ontario in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each plot consisted of 6 rows spaced 18 cm apart, with a row length of 3.8 metres. The planting density of 350 seeds per square metre resulted in approximately 5600 plants per variety per year. Measured characteristics were based on a minimum of 20 measurements per variety per year except for kernel weight which was based on a minimum of 4 measurements per variety per year. Mean differences were significant at the 5% probability level based on a paired Student’s t-test.

Comparison table for ‘AAC Loki’

	‘AAC Loki’	‘AAC Nicolas’*	‘AAC Blake’*
<i>Flag leaf width (at booting) (mm)</i>			
mean (2021)	9.9	10.1	12.1
std. deviation (2021)	1.4	2.4	1.7
mean (2022)	11.2	14.8	15.3
std. deviation (2022)	1.8	2.7	2.0
<i>Flag leaf length (at booting) (cm)</i>			
mean (2021)	16.2	18.4	16.4
std. deviation (2021)	2.0	3.4	3.2
mean (2022)	22.7	27.9	22.3
std. deviation (2022)	3.2	4.0	2.4
<i>Kernel weight (grams per 1000 kernels) (g)</i>			
mean (2021)	32.6	30.4	34.9
std. deviation (2021)	0.2	0.6	0.8
mean (2022)	28.5	27.0	29.5
std. deviation (2022)	0.5	0.4	0.8
<i>Kernel length (primary grain) (mm)</i>			
mean (2021)	18.1	16.6	17.3
std. deviation (2021)	1.2	1.0	0.7
mean (2022)	16.8	14.8	14.8
std. deviation (2022)	0.8	0.7	0.6

*reference varieties



Oat: 'AAC Loki' (left) with reference varieties 'AAC Nicolas' (centre) and 'AAC Blake' (right)



Oat: 'AAC Loki' (left) with reference varieties 'AAC Nicolas' (centre) and 'AAC Blake' (right)

Proposed denomination: 'AAC Wallace'
Application number: 22-10909
Application date: 2022/05/05
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

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

Summary: *At the 5-9 tiller stage, the plants of 'AAC Wallace' have a semi-erect growth habit while the plants of 'AAC Nicolas' have an intermediate growth habit and those of 'Kara' have an erect growth habit. At booting, the leaf of 'AAC Wallace' is medium green while that of 'Kara' is dark green. The leaf below the flag leaf of 'AAC Wallace' has sparse pubescence on the margin while the leaf below the flag leaf of 'AAC Nicolas' has a medium density of pubescence on the margin and that of 'Kara' has absent or very sparse pubescence on the margin. The frequency of plants with recurved flag leaves is low for 'AAC Wallace' while it is medium for 'AAC Nicolas' and absent or very low for 'Kara'. The flag leaf of 'AAC Wallace' is longer than that of 'Kara'. The plants of 'AAC Wallace' head later than the plants of 'Kara'. The glume of 'AAC Wallace' has a medium degree of glaucosity while that of 'AAC Nicolas' has weak glaucosity. The panicle of 'AAC Wallace' is longer than that of 'Kara'. The 1000 kernel weight of 'AAC Wallace' is greater than the 1000 kernel weight of 'AAC Nicholas'.*

Description:

PLANT: hulled spring type, semi-erect growth habit at 5 to 9 tiller stage, low frequency of plants with recurved flag leaves at booting

STEM: ranging from absent to very sparse to dense pubescence above upper culm node, ranging from absent or very sparse to sparse pubescence below upper culm node

LOWER LEAF: absent to very sparse pubescence on sheath and blade at the 5 to 9 tiller stage

LEAF (AT BOOTING): medium green, sparse pubescence on margin of leaf below flag leaf, medium glaucosity at green stage

PANICLE (SHORTLY AFTER HEADING): equilateral/symmetrical orientation of branches, medium density, semi-erect attitude of branches, less than 30 degree angle between rachis and dominant side branch

LOWEST PANICLE NODE: few hairs or spines

SPIKELET: semi-abscission type separation, semi-nodding attitude, two grains

GLUME: medium glaucosity

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

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

KERNEL: no basal hairs, cream coloured

GROAT: medium density of pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: fair lodging resistance

Origin and Breeding: 'AAC Wallace' (experimental designation OA1613-5) was developed using a modified single seed descent method of plant breeding. 'AAC Wallace' originated from a cross between the varieties 'Kara' and 'AAC Nicolas' conducted on October 23, 2012 at Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario. The line was advanced from the F1 to F3 generation in the greenhouse and 200 selected F3:4 panicles were grown as hill plots in 2014. The line was further advanced based on visual assessment and yield with one F3:6 line designated as OA1613-5 and entered in the Preliminary Test in 2016. The line was further assessed for yield and was tested in the 2019-2021 registration trials. Breeder seed was established at the F3:9 generation in 2022.

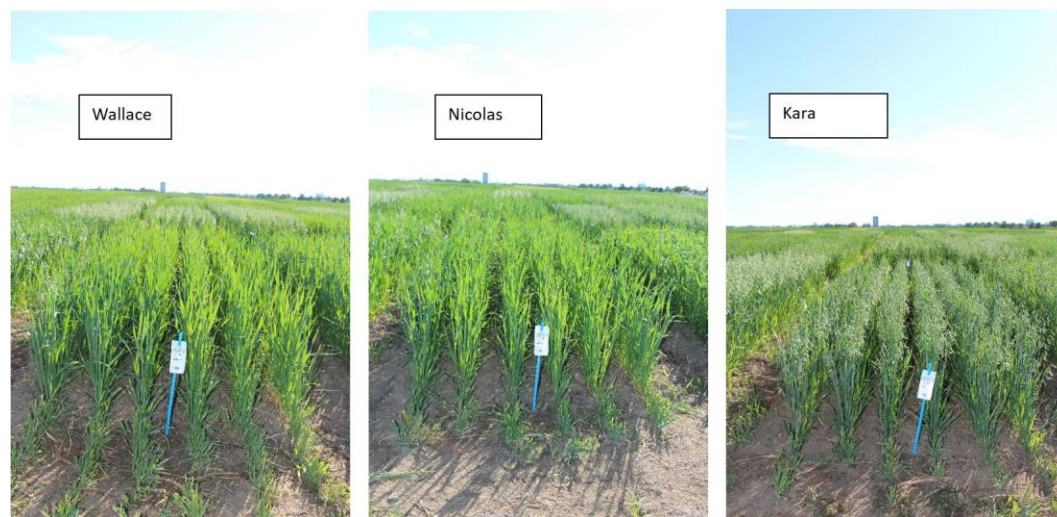
Tests and Trials: The comparative trials for 'AAC Wallace' were conducted at Agriculture and Agri-Food Canada, Central Experimental Farm in Ottawa Ontario in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each plot consisted of 6 rows spaced 18 cm apart, with a row length of 3.8 metres. The planting density of 350 seeds per square metre resulted in approximately 5600 plants per variety per year. Measured characteristics were based on a minimum of 20 measurements per variety per year except for kernel weight which was based

on a minimum of 4 measurements per variety per year. Mean differences were significant at the 5% probability level based on a paired Student's t-test.

Comparison table for 'AAC Wallace'

	'AAC Wallace'	'AAC Nicolas'*	'Kara'*
<i>Flag leaf length (at booting) (cm)</i>			
mean (2021)	17.2	18.4	14.6
std. deviation (2021)	3.1	3.4	2.3
mean (2022)	22.1	27.9	18.6
std. deviation (2022)	4.6	4.0	3.8
<i>Days to heading (number of days from planting to 50% of heads fully emerged)</i>			
mean (2021)	70	69	63
mean (2022)	64	60	57
<i>Panicle length (at green stage) (cm)</i>			
mean (2021)	19.0	19.1	17.1
std. deviation (2021)	1.2	0.9	2.0
mean (2022)	20.9	22.6	19.7
std. deviation (2022)	1.6	4.0	1.3
<i>Kernel weight (grams per 1000 kernels) (g)</i>			
mean (2021)	35.9	30.4	36.7
std. deviation (2021)	0.4	0.6	0.7
mean (2022)	30.0	27.0	31.4
std. deviation (2022)	1.1	0.4	1.0

*reference varieties



Oat: 'AAC Wallace' (left) with reference varieties 'AAC Nicolas' (centre) and 'Kara' (right)



Oat: 'AAC Wallace' (left) with reference varieties 'AAC Nicolas' (centre) and 'Kara' (right)

Proposed denomination: 'AAC Wight'
Application number: 22-10910
Application date: 2022/05/05
Applicant: Agriculture & Agri-Food Canada, Ottawa, Ontario
Agent in Canada: Agriculture & Agri-Food Canada, Saskatoon, Saskatchewan
Breeder: Weikai Yan, Agriculture & Agri-Food Canada, Ottawa, Ontario

Varieties used for comparison: 'AAC Nicolas', 'Akina' and 'AAC Basil'

Summary: *At the 5-9 tiller stage, the plants of 'AAC Wight' have an intermediate growth habit while the plants of 'Akina' have an erect growth habit. The leaf below the flag leaf of 'AAC Wight' has sparse pubescence on the margin while the leaf below the flag leaf of 'AAC Nicolas' has a medium density of pubescence on the margin and that of 'Akina' has absent or very sparse pubescence on the margin. 'AAC Wight' has a medium frequency of plants with recurved flag leaves while 'Akina' has a low frequency of plants with recurved flag leaves. The flag leaf of 'AAC Wight' is longer than that of 'AAC Basil'. The pubescence on the stem above the upper culm node of 'AAC Wight' is medium to dense while it is absent or very sparse for 'Akina' and 'AAC Basil'. The pubescence on the stem below the upper culm node of 'AAC Wight' is of a medium density while it is absent or very sparse for 'Akina' and 'AAC Basil'. The plants of 'AAC Wight' head later than the plants of 'Akina' and 'AAC Basil'. The glume of 'AAC Wight' has a medium degree of glaucosity while that of 'AAC Nicolas' has weak glaucosity. The panicle of 'AAC Wight' is shorter than that of 'AAC Nicolas'. At maturity, the lemma of 'AAC Wight' has an absent or very weak to weak tendency to be awned while the lemma of 'Akina' has a medium tendency to be awned and those of 'AAC Nicolas' and 'AAC Basil' have a weak to medium tendency to be awned. At maturity, the kernel of 'AAC Wight' is shorter than the kernel of 'Akina' and wider than that of 'AAC Nicolas'.*

Description:

PLANT: hulled spring type, intermediate growth habit at 5 to 9 tiller stage, medium frequency of plants with recurved flag leaves at booting

STEM: medium to dense pubescence above upper culm node and medium density of pubescence below upper culm node

LOWER LEAF: absent to very sparse pubescence on sheath and blade at the 5 to 9 tiller stage

LEAF (AT BOOTING): medium green, sparse pubescence on margin of leaf below flag leaf, medium glaucosity at green stage

PANICLE (SHORTLY AFTER HEADING): equilateral/symmetrical orientation of branches, medium density, semi-erect attitude of branches, less than 30 degree angle between rachis and dominant side branch

LOWEST PANICLE NODE: few hairs or spines

SPIKELET: semi-abscission type separation, semi-nodding attitude, two to three grains

GLUME: medium glaucosity

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

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

KERNEL: white

GROAT: medium density of pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: fair lodging resistance

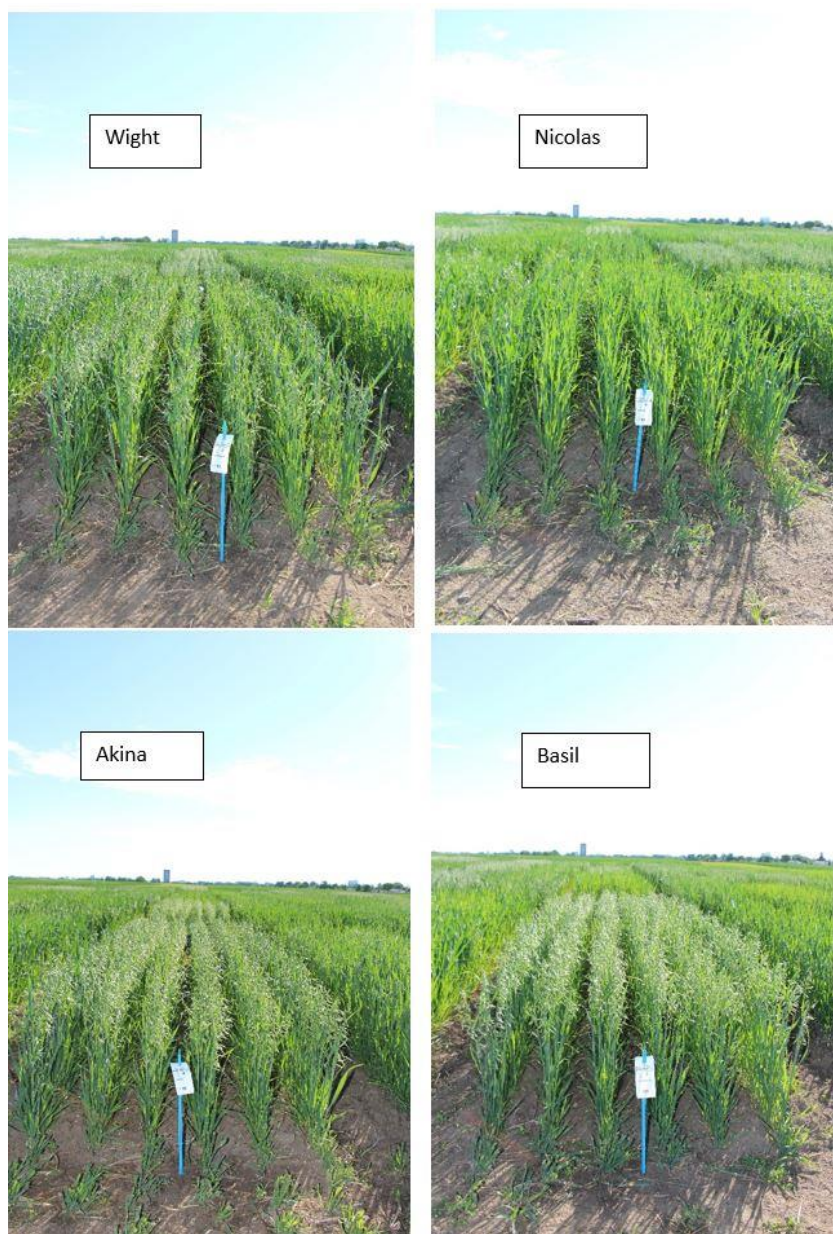
Origin and Breeding: ‘AAC Wight’ (experimental designation OA1623-5) was developed using a simplified single seed descent method of plant breeding. ‘AAC Wight’ originated from a cross between the variety ‘Akina’ and the line OA1331-5-5 conducted on November 16, 2013 at Agriculture and Agri-Food Canada, Ottawa Research and Development Centre in Ottawa, Ontario. The line was advanced from the F1 to F4 generation in the greenhouse with selections based on visual assessment, yield and quality characteristics made at the F4:5 and F4:6 generations respectively in 2016 and 2017. An F4:7 line was designated as OA1623-5 at the Preliminary Test stage in 2018 and was tested in the registration trials from 2019 to 2021. Breeder seed was established at the F4:10 generation in 2021.

Tests and Trials: The comparative trials for ‘AAC Wight’ were conducted at Agriculture and Agri-Food Canada, Central Experimental Farm in Ottawa Ontario in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each plot consisted of 6 rows spaced 18 cm apart, with a row length of 3.8 metres. The planting density of 350 seeds per square metre resulted in approximately 5600 plants per variety per year. Measured characteristics were based on a minimum of 20 measurements per variety per year. Mean differences were significant at the 5% probability level based on a paired Student’s t-test.

Comparison table for ‘AAC Wight’

	‘AAC Wight’	‘AAC Nicolas’*	‘Akina’*	‘AAC Basil’*
<i>Flag leaf length (at booting) (cm)</i>				
mean (2021)	17.7	18.4	16.4	15.7
std. deviation (2021)	2.2	3.4	4.5	1.8
mean (2022)	25.0	27.9	23.5	21.9
std. deviation (2022)	3.3	4.0	4.0	3.0
<i>Days to heading (number of days from planting to 50% of heads fully emerged)</i>				
mean (2021)	66	69	62	63
mean (2022)	59	60	56	57
<i>Panicle length (at green stage) (cm)</i>				
mean (2021)	15.6	19.1	17.1	14.9
std. deviation (2021)	1.0	0.9	2.0	1.4
mean (2022)	19.5	22.6	21.1	19.5
std. deviation (2022)	1.3	4.0	4.0	1.2
<i>Kernel length (primary grain) (mm)</i>				
mean (2021)	16.4	16.6	18.8	16.9
std. deviation (2021)	0.7	1.04	0.7	1.3
mean (2022)	14.9	14.8	15.7	15.0
std. deviation (2022)	1.1	0.7	1.0	0.7
<i>Kernel width (primary grain) (mm)</i>				
mean (2021)	3.8	3.5	3.8	3.8
std. deviation (2021)	0.4	0.5	0.4	0.4
mean (2022)	3.1	2.7	3.0	3.0
std. deviation (2022)	0.3	0.5	0.0	0.0

*reference varieties



Oat: 'AAC Wight' (top left) with reference varieties 'AAC Nicolas' (top right), 'Akina' (bottom left) and 'AAC Basil' (bottom right)



Oat: 'AAC Wight' (top left) with reference varieties 'AAC Nicolas' (top centre), 'Akina' (top left) and 'AAC Basil' (bottom left)