



APPLICATIONS UNDER EXAMINATION

OAT

OAT

(*Avena sativa*)

Proposed denomination: 'Alka'
Application number: 20-10191
Application date: 2020/05/07
Applicant: Lantmännen ek för, Stockholm, Sweden
Agent in Canada: La Coop fédérée, Saint-Hyacinthe, Quebec
Breeder: Alf Ceplitis, Lantmännen ek för, Svalöv, Sweden

Varieties used for comparison: 'Kalio' and 'Kyron'

Summary: *At the 5 to 9 tiller stage, the juvenile growth habit of 'Alka' is semi-erect whereas the juvenile growth habit of 'Kyron' is intermediate between semi-erect and semi-prostrate. At booting, the leaf of 'Alka' is dark green whereas that of 'Kalio' is medium green. The flag leaf of 'Alka' is longer and wider than that of 'Kalio'. At the green stage, there is a medium overlap of the lemma onto the palea for 'Alka' whereas the overlap is small for 'Kalio'. At maturity, the attitude of the branches on the panicle of 'Alka' is horizontal whereas it is semi-erect for the reference varieties. The kernel of 'Alka' is shorter than the reference varieties and wider than that of 'Kyron'.*

Description:

PLANT: spring hulled type, semi-erect juvenile growth habit at 5 to 9 tiller stage, medium to high 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

LEAF: dark green at booting, absent or very sparse pubescence of margin of leaf below flag leaf, medium glaucosity

PANICLE: intermediate orientation, medium density, horizontal attitude of branches

GLUME: weak glaucosity

SPIKELET: nodding attitude

RACHILLA: medium length between primary and secondary floret, sparse pubescence

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

Origin and Breeding: 'Alka' (experimental designations C3M16081, CFA1502 and SW12-1660) was developed using the pedigree breeding method by Lantmännen ek för in Stockholm, Sweden. The original cross between proprietary lines took place in 2009 Svalöv, Sweden. The variety originates from a single plant selection in the F4 generation with subsequent selections in the F5 to F9 generations. Breeder seed was established from one line selected at the F8 generation. Selection criteria were based on yield, maturity and grain quality.

Tests and Trials: The comparative trials for 'Alka' were conducted at the La Coop Fédérée Research Farm in Saint-Hyacinthe, Quebec in 2019 and 2021. There were 4 replicates arranged in a RCB design. In 2019, the size of the plots were 6 square metres and consisted of seven 5 m long rows spaced 0.18 m apart. In 2021, the size of the plots were 5 square metres and consisted of seven 4.5 m long rows spaced 0.18 m apart. The seeding density was 375 seeds per metre squared resulting in a minimum of 6750 plants per variety per year. The measured characteristics were based on a minimum of 20 measurements. The mean differences were significant at the 5% probability level based on a Tukey test.

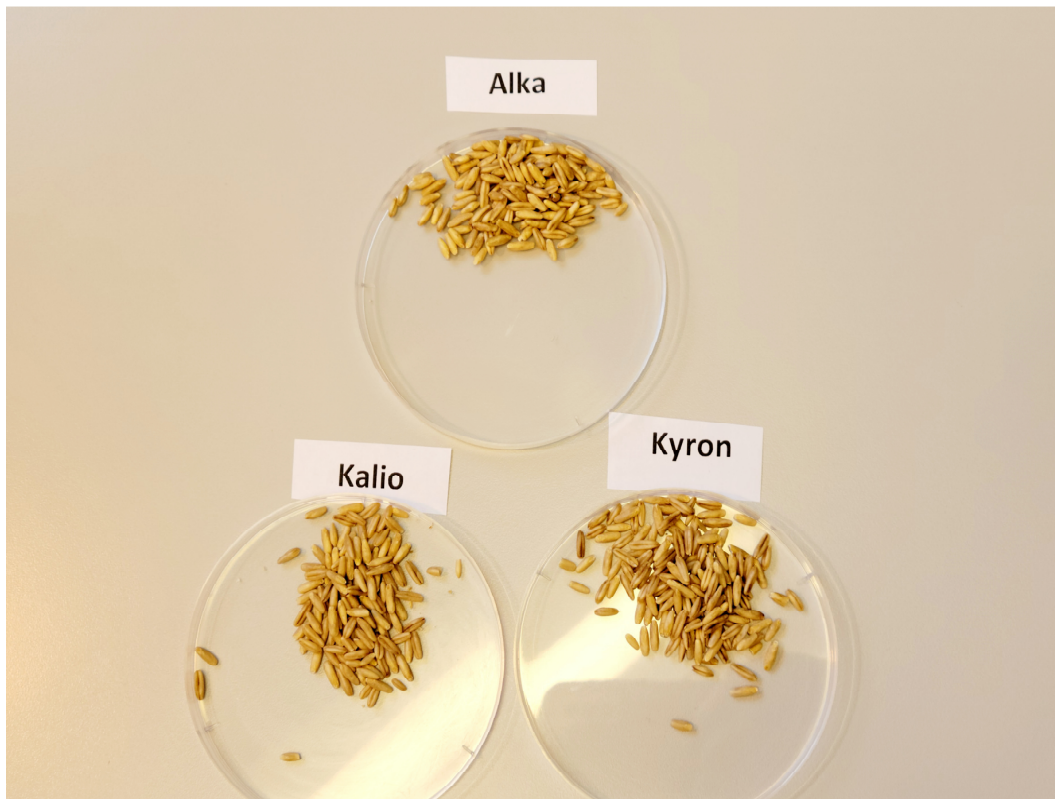
Comparison table for 'Alka'

	'Alka'	'Kalio'*	'Kyron'*
<i>Flag leaf width (mm)</i>			
mean 2019	15.7	14.2	15.2
std. deviation 2019	1.3	1.2	1.9
mean 2021	12.5	10.2	10.7
std. deviation 2021	1.9	1.5	1.3
<i>Flag leaf length (cm)</i>			
mean 2019	22.1	20.0	21.7
std. deviation 2019	2.5	2.1	2.7
mean 2021	15.3	13.0	14.5
std. deviation 2021	1.9	1.6	1.2
<i>Kernel width (primary grain) (mm)</i>			
mean 2019	3.14	3.13	2.91
std. deviation 2019	0.09	0.13	0.17
mean 2021	3.13	3.01	2.96
std. deviation 2021	0.15	0.12	0.14
<i>Kernel length (primary grain) (mm)</i>			
mean 2019	10.47	11.75	11.96
std. deviation 2019	0.57	0.81	0.45
mean 2021	12.49	13.79	13.40
std. deviation 2021	0.62	1.10	0.95

*reference varieties



Oat: 'Alka' (left) with reference varieties 'Kalio' (centre) and 'Kyron' (right)



Oat: 'Alka' (top) with reference varieties 'Kalio' (bottom left), 'Kyron' (bottom right)

Proposed denomination: 'Kalio'
Application number: 18-9658
Application date: 2018/12/07
Applicant: Lantmännen SW Seed AB, Svalöv, Sweden
Agent in Canada: La Coop fédérée, Saint-Hyacinthe, Quebec
Breeder: Alf Ceplitis, Lantmännen SW Seed AB, Svalöv, Sweden

Varieties used for comparison: 'Domingo', 'Kara' and 'Triactor'

Summary: *At the 5 to 9 tiller stage, the juvenile growth habit of 'Kalio' is semi-erect whereas the juvenile growth habit of 'Kara' is erect. At booting, the leaf of 'Kalio' is medium green whereas that of 'Domingo' is yellow green and those of 'Kara' and 'Triactor' are dark green. The frequency of plants with recurved flag leaves of 'Kalio' is low to medium whereas it is high to very high for 'Domingo' and absent or very low to low for 'Kara'. The flag leaf of 'Kalio' is shorter than that of 'Domingo' and narrower than that of 'Kara'. At the green stage, the panicle orientation of 'Kalio' is intermediate whereas it is equilateral for 'Domingo'. The panicle density of 'Kalio' is lax whereas it is of medium density for the reference varieties. The glaucosity on the glume of 'Kalio' is weak whereas it is strong for 'Kara' and medium for 'Triactor'. The tendency of the lemmas to be awned on 'Kalio' is absent to very weak to weak whereas the tendency to be awned is weak to medium on 'Kara' and strong on 'Triactor'.*

Description:

PLANT: spring hulled type, semi-erect juvenile growth habit at 5 to 9 tiller stage, low to 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

LEAF: medium green at booting, absent or very sparse pubescence of margin of leaf below flag leaf, weak to medium glaucosity

PANICLE: intermediate orientation, lax density, semi-erect attitude of branches

GLUME: weak glaucosity

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

LEMMA: weak glaucosity, small to 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

Origin and Breeding: ‘Kalio’ (experimental designation C3M16082) was developed using the pedigree breeding method by Lantmännen SW Seed AB in Svalöv, Sweden. The original cross between proprietary lines took place in 2009. The variety originates from a single plant selection in the F4 generation with subsequent selections in the F5 to F8 generations. Breeder seed was established at the F7 generation. Selection criteria were based on yield, agronomic characteristics, grain quality and resistance to foliar diseases.

Tests and Trials: The comparative trials for ‘Kalio’ were conducted at the La Coop Fédérée Research Farm in Saint-Hyacinthe, Quebec in 2019 and 2021. There were 4 replicates arranged in a RCB design. In 2019, the size of the plots were 6 square metres and consisted of seven 5 m long rows spaced 0.18 m apart. In 2021, the size of the plots were 5 square metres and consisted of seven 4.5 m long rows spaced 0.18 m apart. The seeding density was 375 seeds per metre squared resulting in a minimum of 6750 plants per variety per year. The measured characteristics were based on a minimum of 20 measurements. The mean differences were significant at the 5% probability level based on a Tukey test.

Comparison table for ‘Kalio’

	‘Kalio’	‘Domingo’*	‘Kara’*	‘Triactor’*
<i>Flag leaf width (mm)</i>				
mean 2019	14.6	15.5	18.1	15.4
std. deviation 2019	1.3	1.3	2.1	1.5
mean 2021	10.2	13.0	12.3	12.2
std. deviation 2021	1.0	1.8	2.0	1.5
<i>Flag leaf length (cm)</i>				
mean 2019	19.6	22.1	18.3	20.9
std. deviation 2019	2.0	2.0	2.5	2.1
mean 2021	12.4	15.6	13.4	15.4
std. deviation 2021	1.2	1.8	1.6	1.8

*reference varieties



Oat: 'Kalio' (left) with reference varieties 'Kara' (centre left), 'Domingo' (centre right) and 'Triactor' (right)



Oat: 'Kalio' (bottom left) with reference varieties 'Kara' (top left), 'Domingo' (top right) and 'Triactor' (bottom right)

Proposed denomination: 'Katana'
Application number: 20-10266
Application date: 2020/06/16
Applicant: La Coop fédérée, Saint-Hyacinthe, Quebec
Breeder: Christian Azar, La Coop fédérée, Saint-Hyacinthe, Quebec

Varieties used for comparison: 'AAC Kolosse', 'Bolina' and 'Dieter'

Summary: *At the 5 to 9 tiller stage, the juvenile growth habit of 'Katana' is intermediate between semi-erect and semi-prostrate whereas the juvenile growth habit of 'AAC Kolosse' and 'Bolina' is semi-erect. At booting, the leaf of 'Katana' is yellow green whereas the leaf is medium green for 'AAC Kolosse' and 'Bolina'. The pubescence on the stem above and below the upper culm node of 'Katana' is medium to dense whereas the pubescence is absent or very sparse to sparse for 'AAC Kolosse'. After heading at the green stage, the plants of 'Katana' are taller than the plants of 'Bolina'. The glaucosity on the glume of 'Katana' is weak whereas 'AAC Kolosse' and 'Bolina' have a medium degree of glaucosity. The attitude of the branches on the panicle of 'Katana' is semi-erect whereas that of 'Bolina' is horizontal. At maturity, the lemma is white for 'Katana' whereas the lemma of 'AAC Kolosse' is yellow. The tendency of the lemmas to be awned on 'Katana' is medium whereas the tendency to be awned is absent to very weak on 'Dieter' and weak on 'AAC Kolosse' and 'Bolina'. There are no basal hairs on the kernel of 'Katana' whereas there are on 'Bolina'. The kernel weight of 'Katana' is greater than that of 'Bolina'. 'Katana' has a longer kernel than that of 'Bolina'.*

Description:

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

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

LOWER LEAF: medium pubescence on sheath, absent to very sparse pubescence on blade

LEAF: yellow green at booting, absent or very sparse pubescence on margin of leaf below flag leaf, weak glaucosity

PANICLE: equilateral/symmetrical orientation, medium density, semi-erect attitude of branches

GLUME: weak glaucosity

RACHILLA: medium length between primary and secondary floret, sparse pubescence

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

KERNEL: basal hairs absent

Origin and Breeding: 'Katana' (experimental designations C3M18274 et CFA1802) originated from a cross made in 2012 between QO.621.28 (female parent) and P973A38-9-3-27 (male parent) in Saint-Hyacinthe, Québec. Using a modified pedigree method of breeding, the variety originated from a single plant selection from the F4 generation in 2014. In 2018, one hundred panicles were selected from the F8 generation. Row plots were then selected during the winter of 2019 in Puerto Rico with breeder seed derived from 50 selected lines in St-Simon-de-Bagot, Quebec during the summer 2019. Selection criteria included tolerances to leaf and stem diseases, lodging resistance, white colour of the lemma, yield, specific weight, thousand kernel weight, reduced tendency to be awned, few tertiary kernels and grain quality.

Tests and Trials: The comparative trials for 'Katana' were conducted at the La Coop Fédérée Research Farm in Saint-Hyacinthe, Quebec in 2020 and 2021. There were 4 replicates arranged in a RCB design. In 2020, the size of the plots were 6 square metres and consisted of seven 5 m long rows spaced 0.18 m apart. In 2021, the size of the plots were 5 square metres and consisted of seven 4.5 m long rows spaced 0.18 m apart. The seeding density was 375 seeds per metre squared resulting in a minimum of 6750 plants per variety per year. The measured characteristics were based on a minimum of 20 measurements except for the primary kernel length, which is based on a minimum of 17 measurements in 2020 and for the thousand kernel weight, which was based on 3 and 10 measurements in 2020 and 2021, respectively. The mean differences were significant at the 5% probability level based on a Tukey test.

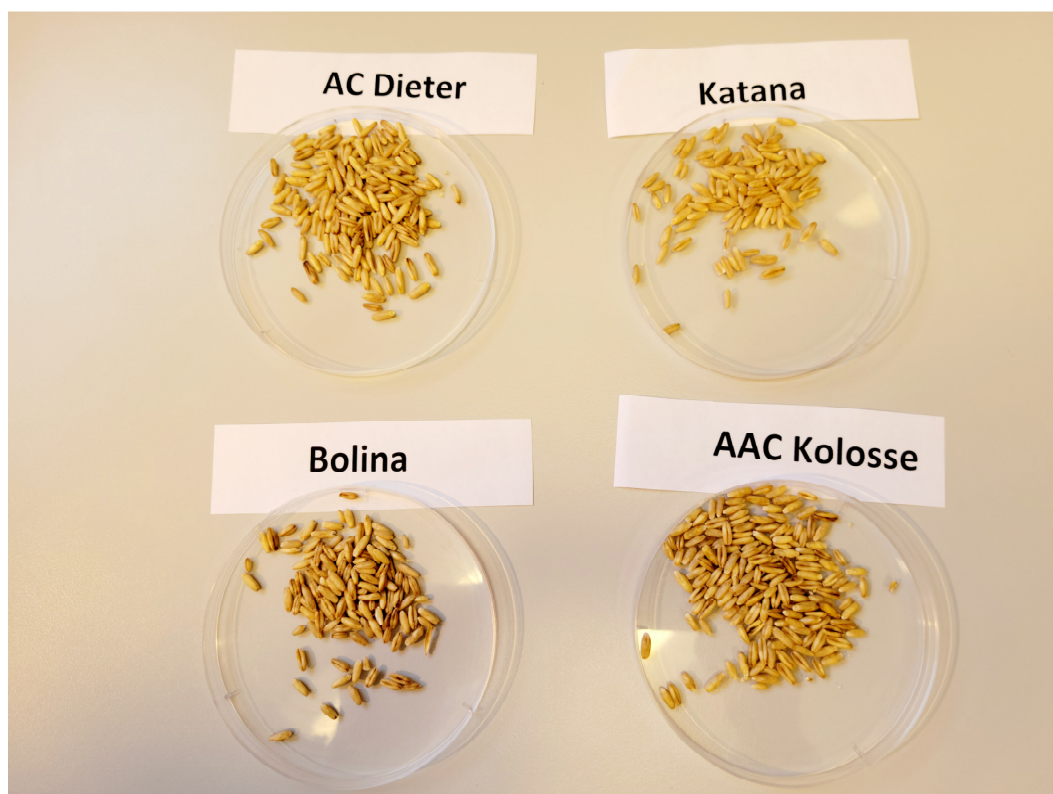
Comparison table for 'Katana'

	'Katana'	'AAC Kolosse' ^{**}	'Bolina' ^{**}	'Dieter' ^{**}
<i>Plant height (culm plus panicle) (cm)</i>				
mean 2020	54.7	51.2	40.6	58.0
std. deviation 2020	4.4	3.2	4.7	6.8
mean 2021	85.3	74.1	61.9	80.9
std. deviation 2021	5.5	3.8	3.3	4.2
<i>Kernel weight (grams per 1000 kernels) (g)</i>				
mean 2020	33.87	31.80	27.33	34.47
std. deviation 2020	0.31	0.20	0.31	0.31
mean 2021	34.97	34.22	31.07	38.60
std. deviation 2021	2.46	3.23	3.44	2.10
<i>Kernel length (primary grain) (mm)</i>				
mean 2020	12.00	11.50	10.58	11.71
std. deviation 2020	1.65	1.67	1.07	1.57
mean 2021	12.21	12.83	11.46	12.91
std. deviation 2021	0.91	0.75	0.71	0.93

*reference varieties



Oat: 'Katana' (left) with reference varieties 'Bolina' (centre left), 'AAC Kolosse' (centre right) and 'Dieter' (right)



Oat: 'Katana' (top right) with reference varieties 'AAC Kolosse' (bottom right), 'Bolina' (bottom left) and 'Dieter' (top left)