



APPLICATIONS UNDER EXAMINATION

OAT

OAT

(*Avena sativa*)

Proposed denomination: 'Nika'
Application number: 22-10808
Application date: 2022/01/26
Applicant: Sollio Agriculture, Saint-Hyacinthe, Quebec
Breeder: Valerie Chabot, Sollio Agriculture, Saint-Hyacinthe, Quebec

Varieties used for comparison: 'CDC Orrin', 'Bia' and 'Stride'

Summary: *At the 5 to 9 tiller stage, the juvenile growth habit of 'Nika' is erect whereas the juvenile growth habit of 'CDC Orrin' and 'Stride' is semi-erect and that of 'Bia' is intermediate between semi-erect and semi-prostrate. The pubescence on the sheath of the lower leaves of the seedling of 'Nika' is sparse whereas it is absent or very sparse for 'CDC Orrin' and 'Bia' and medium for 'Stride'. At booting, the frequency of plants with recurved flag leaves is low for 'Nika' whereas it is medium for 'Stride' and high for 'CDC Orrin' and 'Bia'. The flag leaf of 'Nika' is wider than that of 'Bia' and shorter than that of 'CDC Orrin'. The pubescence above and below the upper culm node on the stem of 'Nika' is of medium density whereas it is dense for 'CDC Orrin' and 'Bia'. The plants of 'Nika' head later than the plants of 'CDC Orrin' and 'Bia'. The overlap of the lemma onto the palea for 'Nika' is of medium extent whereas it is small for 'Bia' and 'Stride' and high for 'CDC Orrin'. At maturity, the attitude of the panicle branches of 'Nika' is semi-erect whereas that of 'Stride' is horizontal. The tendency of the lemmas to be awned on 'Nika' is absent to very weak, whereas it is weak for 'Bia' and strong for 'Stride'. The primary kernel of 'Nika' is wider than that of 'Bia'.*

Description:

SEEDLING (5 to 9 tiller stage): erect growth habit, absent or sparse pubescence on blade of lower leaves, sparse pubescence on sheath of lower leaves

PLANT: spring hulled type, low frequency of plants with recurved flag leaves at booting

STEM: medium density of pubescence above and below upper culm node at booting

LEAF (at booting): dark green, leaf below flag leaf absent to very sparse pubescence along margin; medium glaucosity

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

SPIKELET: nodding, two grains

RACHILLA: medium length between primary and secondary floret; absent to very sparse pubescence

GLUME: medium glaucosity

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

KERNEL: cream coloured, basal hairs absent

SCUTELLUM: pointed tip, medium sized

GROAT: dense pubescence

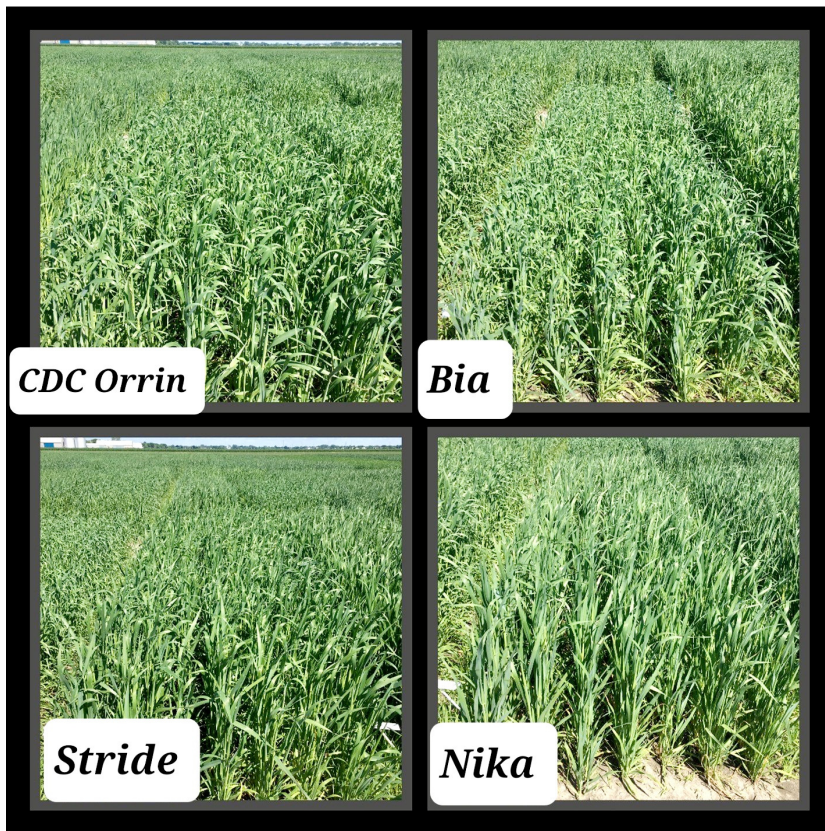
Origin and Breeding: 'Nika' (experimental designations C3M1809 and CFA1809) originated from a cross made between 'Stride' and 'Akina' in 2014 by Sollio Agriculture in Saint-Hyacinthe, Quebec, Canada. The variety was developed using a bulk pedigree method. In 2016, sixteen plants were selected from the F4 generation, then the seeds from each plant were sown in individual plots in Gorbea, Chile. The line designated as CFA1809, which became 'Nika', was assessed in yield trials from 2017 to 2018 in Saint-Hyacinthe, Quebec. The selection criteria were maturity, lodging resistance, disease resistance, grain yield, specific weight, thousand kernel weight and grain quality. The breeder seed was derived in 2018 from 200 panicles selected in the F7 generation. 'Nika' was advanced into registration trials of the Réseau Grande Culture du Québec from 2019 to 2020.

Tests and Trials: The comparative trials for 'Nika' were conducted in 2021 and 2022 at the Sollio Agriculture crop production research farm in Saint-Hyacinthe, Quebec. Each trial had 4 replicates arranged in a RCB design. Each plot measured 5 square metres and consisted of seven rows that were 4.5 metres in length with spacing of 0.18 metres between rows. The seeding density was approximately 333 seeds per square metre, for a total of a minimum of 5,994 plants per variety per year, except for the thousand kernel weight, which was based on 10 measurements per variety per year. Measurements per variety per year. Mean differences are significant at the 5% probability level based on a Tukey test.

Comparison table for 'Nika'

	'Nika'	'CDC Orrin'*	'Bia'*	'Stride**'
<i>Flag leaf width (mm)</i>				
mean (2021)	12.6	12.2	10.2	11.9
std. deviation (2021)	1.7	1.7	1.2	1.0
mean (2022)	18.0	15.7	14.0	18.3
std. deviation (2022)	1.9	2.3	1.1	2.1
<i>Flag leaf length (cm)</i>				
mean (2021)	13.5	15.7	14.2	14.9
std. deviation (2021)	2.0	2.2	2.1	1.8
mean (2022)	22.6	25.7	22.0	21.4
std. deviation (2022)	2.0	2.1	2.3	2.0
<i>Days to heading (number of days from planting to 50% of heads fully emerged)</i>				
mean (2021)	88	82	81	90
mean (2022)	64	62	59	59
<i>Primary kernel width (mm)</i>				
mean (2021)	3.1	3.2	2.7	3.1
std. deviation (2021)	0.1	0.1	0.2	0.1
mean (2022)	2.9	3.0	2.6	2.8
std. deviation (2022)	0.2	0.3	0.3	0.2

*reference varieties



Oat: 'Nika' (bottom right) with reference varieties 'Stride' (bottom left), 'CDC Orrin' (top left) and 'Bia' (top right)



Oat: 'Nika' (left) with reference varieties 'Bia' (centre left), 'Stride' (centre right) and 'CDC Orrin' (right)



Oat: 'Nika' (right) with reference varieties 'Bia' (centre right), 'CDC Orrin' (centre left) and 'Stride' (left)