



APPLICATIONS UNDER EXAMINATION

OAT

OAT

(*Avena sativa*)

Proposed denomination: 'CDC Anson'
Application number: 22-10887
Application date: 2022/04/19
Applicant: University of Saskatchewan, Saskatoon, Saskatchewan
Breeder: Aaron Beattie, University of Saskatchewan, Saskatoon, Saskatchewan

Varieties used for comparison: 'CDC Endure' and 'CS Camden'

Summary: *At booting, 'CDC Anson' has a high to very high frequency of plants with recurved flag leaves while 'CDC Endure' has a medium to high frequency of plants with recurved flag leaves and 'CS Camden' has a medium frequency of plants with recurved flag leaves. The flag leaf of 'CDC Anson' is narrower than that of 'CS Camden'. The pubescence on the stem above and below the upper culm node of 'CDC Anson' is of a sparse to medium density whereas it is absent or very sparse for the reference varieties. The plants of 'CDC Anson' head later than the plants of 'CDC Endure'. At the green stage, the plants of 'CDC Anson' are shorter than those of the reference varieties. The panicle of 'CDC Anson' is medium to dense while that of 'CDC Endure' is lax to a medium density and that of 'CS Camden' is of a medium density. The glume of 'CDC Anson' has weak glaucosity while the glume of 'CDC Endure' has medium glaucosity and that of 'CS Camden' has medium to strong glaucosity. The panicle of 'CDC Anson' is shorter than those of the reference varieties. At maturity, the lemma of 'CDC Anson' has a medium tendency to be awned while that of 'CDC Endure' has an absent or very weak tendency to be awned. The kernel of 'CDC Anson' is shorter than those of the reference varieties and narrower than that of 'CDC Endure'.*

Description:

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

STEM: sparse to medium density of 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 to dark green, absent or very sparse to sparse pubescence on margin of leaf below flag leaf, weak to medium glaucosity at green stage

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

LOWEST PANICLE NODE: many short hairs or spines

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

GLUME: weak glaucosity

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

LEMMA: weak glaucosity, medium to large 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: short basal hairs, cream coloured

GROAT: medium to dense pubescence

SCUTELLUM: pointed tip, medium size

AGRONOMIC CHARACTERISTICS: good resistance to lodging

Origin and Breeding: 'CDC Anson' (experimental designations OT3112 and SA162676) originated from a cross between the line OT3068 and the variety 'CS Camden' conducted under a glass greenhouse in the winter of 2012-2013 at the Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan, Canada. The F1 seed was grown in Saskatoon, Saskatchewan in 2013 with the resulting F2 and F3 seed grown as a bulk population in Leeston, New Zealand during the

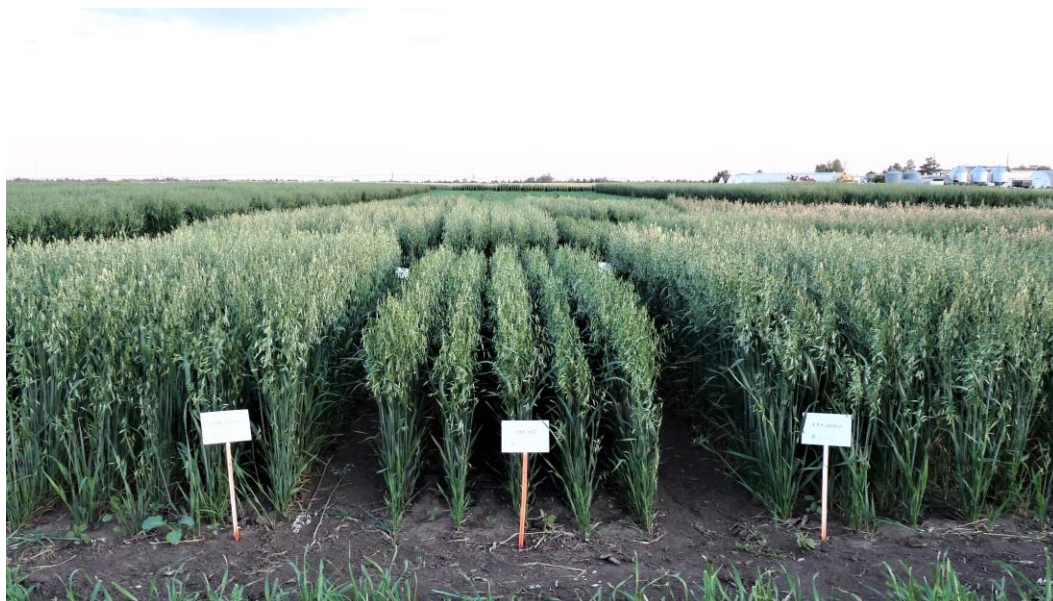
winter of 2013-2014 and in Saskatoon, Saskatchewan in the summer of 2014. The variety was advanced through the F4 and F5 generations as single seed derived lines in greenhouse facilities at the University of Saskatchewan during the winter of 2014-2015. The F6 generation was grown as single panicle hill plots in Saskatoon, Saskatchewan with one hill plot bulk harvested and designated SA162676 in 2015. The line was tested in yield trials at the University of Saskatchewan from 2016 to 2018 and was entered in the Western Canadian Oat Cooperative Registration Trials as OT3112 in 2019 and 2020. Selection criteria used in the development of 'CDC Anson' included kernel characteristics, maturity, yield, plant height and lodging resistance.

Tests and Trials: The comparative trials for 'CDC Anson' were conducted at the Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan in the 2021 and 2022 growing seasons. The trials were conducted using a RCB design consisting of 4 replications per variety. Each replicate consisted of 5 rows spaced 20 cm apart, with a row length of 3.66 metres. The planting density of 215 seeds per square metre resulted in approximately 5600 plants per variety per year. Measured characteristics were based on a minimum of 24 measurements per variety per year. Mean differences were significant at the 5% probability level based on LSD values.

Comparison table for 'CDC Anson'

	'CDC Anson'	'CDC Endure'*	'CS Camden**
<i>Flag leaf width (at booting) (mm)</i>			
mean 2021 (LSD=1.0)	15.6	15.9	17.4
std. deviation 2021	2.1	2.5	3.0
mean 2022 (LSD=0.6)	12.6	11.6	13.3
std. deviation 2022	1.3	1.9	1.6
<i>Days to heading (number of days from planting to when 50% of the panicles are fully emerged from boot)</i>			
mean 2021	60	58	60
mean 2022	55	53	54
<i>Plant height (at green stage)(cm)</i>			
mean 2021 (LSD=1.5)	64.7	77.6	73.2
std. deviation 2021	3.1	2.8	2.9
mean 2022 (LSD=1.8)	67.9	83.3	82.3
std. deviation 2022	4.1	3.0	3.3
<i>Panicle length (at green stage)(cm)</i>			
mean 2021 (LSD=0.6)	14.0	16.4	15.1
std. deviation 2021	1.5	2.0	1.1
mean 2022 (LSD=0.7)	13.0	14.5	14.0
std. deviation 2022	0.9	1.4	1.4
<i>Kernel length (mm)</i>			
mean 2021 (LSD=0.3)	11.1	11.5	11.5
std. deviation 2021	0.5	0.5	0.6
mean 2022 (LSD=0.3)	10.2	11.4	11.0
std. deviation 2022	0.6	0.6	0.5
<i>Kernel width (mm)</i>			
mean 2021 (LSD=0.08)	2.87	2.97	2.87
std. deviation 2021	0.08	0.20	0.09
mean 2022 (LSD=0.07)	2.86	3.06	2.98
std. deviation 2022	0.13	0.15	0.08

*reference varieties



Oat: 'CDC Anson' (centre) with reference varieties 'CDC Endure' (left) and 'CS Camden' (right)



Oat: 'CDC Anson' (centre) with reference varieties 'CDC Endure' (left) and 'CS Camden' (right)