



APPLICATIONS UNDER EXAMINATION

BARLEY

BARLEY (*Hordeum vulgare*)

Proposed denomination: 'Ariber'
Application number: 20-10394
Application date: 2020/12/10
Applicant: Céréla inc., St-Hugues, Quebec
Breeder: Annie Archambault, Céréla inc., St-Hugues, Quebec

Varieties used for comparison: 'Waterloo', 'AAC Mirabel', 'Richer' and 'Sagamie'

Summary: *At booting, the auricles on the flag leaf of 'Ariber' have no anthocyanin colouration whereas the auricles on the flag leaf of 'Richer' have weak anthocyanin colouration. The flag leaf of 'Ariber' is longer than that of 'AAC Mirabel'. The lemma awns of 'Ariber' have a very weak to weak intensity of anthocyanin colouration on the tips while the lemma awns of 'Waterloo' have a weak to medium intensity of anthocyanin colouration on the tips. The spike of 'Ariber' has an erect to semi-erect attitude whereas that of 'Waterloo' is horizontal. At the beginning of ripening, the plants of 'Ariber' are shorter than the plants of 'Waterloo' and 'Richer'. Excluding the awns, the spike of 'Ariber' is longer than that of 'Waterloo' and 'AAC Mirabel'. The length of the first segment of the rachis is short to medium for 'Ariber' whereas the first segment of the rachis is medium to long for 'Waterloo'. The 1000 kernel weight of 'Ariber' is greater than that of 'AAC Mirabel', 'Richer' and 'Sagamie'.*

Description:

PPLANT: six row, spring feed barley, spike emergence occurs early in the-season

FLAG LEAF (AT BOOTING): low frequency of plants with recurved flag leaves

AURICLES: absent anthocyanin colouration, absent or very sparse pubescence on margins

SPIKE: medium glaucosity at the end of anthesis, erect to semi-erect attitude, cup shaped collar, parallel shape, medium to dense, glume and awn of the median spikelet are longer than the grain

LEMMA AWNS: very weak to weak intensity of anthocyanin colouration of tips, longer than length of spike, rough spiculations on margins

FIRST SEGMENT OF RACHIS: short to medium length, weak curvature

KERNEL: medium intensity of anthocyanin colouration of nerves of lemma at beginning of ripening, whitish aleurone layer, long rachilla hairs, husk present, hairiness of ventral furrow present

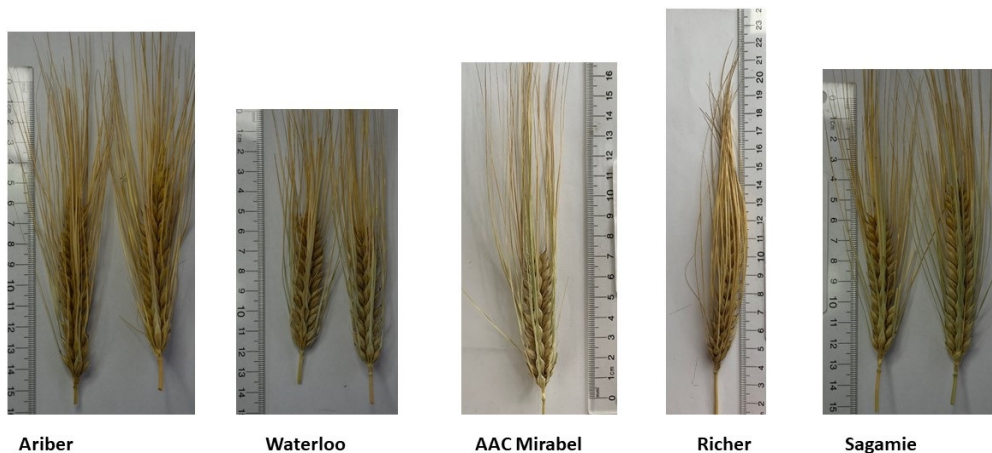
Origin and Breeding: 'Ariber' (experimental designation OS14-10,29) originated from a cross conducted in Sainte-Rosalie, Quebec between the varieties 'Synasolis' (female parent) and 'Synabelle' (male parent) in 2007, with the resulting progeny coded as 'SO07-5'. The F1 to F3 generations were mass cultivated in Ste. Rosalie Quebec from 2008 to 2010 where seed selections were made based on grain density at each generation. In 2011, spikes were selected from the F4 plants based on their apparent disease resistance and lodging resistance. From 2012 to 2016, the line designated as OS14-10,29 was evaluated in agronomic trials with further selections based on yield, volumetric kernel weight, thousand kernel weight and Fusarium head blight resistance. Additional controlled inoculation trials with *Fusarium* sp. were also conducted in 2015 and 2016 to assess the Fusarium head blight resistance. OS14-10,29 was then advanced into the registration trials conducted by the Quebec Recommending Committee for Cereals in 2017 to 2019.

Tests and Trials: The comparative trials for 'Ariber' were conducted at Céréla Inc. in St-Hugues, Quebec, during the 2020 and 2021 growing seasons. Each trial was arranged in a RCB design with 2 replicates. Each replicate was 4.5 metres squared and consisted of five, 5 metre long, rows with 0.19 metre inter-row spacing. The seeding density was 375 seeds per squared metre resulting in a minimum of 3375 plants per variety in each year. Measured characteristics were based on 20 measurements per variety per year. Mean differences were significant at the 5% probability level based on paired Student's t-tests.

Comparison table for 'Ariber'

	'Ariber'	'Waterloo'*	'AAC Mirabel'*	'Richer'*	'Sagamie'*
<i>Flag leaf length (cm)</i>					
mean 2020	9.10	10.20	6.30	10.10	9.60
std. deviation 2020	1.94	2.61	1.26	1.57	1.57
mean 2021	12.35	12.49	9.17	13.70	10.90
std. deviation 2021	2.88	1.71	1.65	2.73	2.23
<i>Plant height at the beginning of kernel ripening (stem plus spike including awns) (cm)</i>					
mean 2020	75.20	79.60	78.20	81.60	77.00
std. deviation 2020	5.02	5.51	3.46	5.98	5.92
mean 2021	78.55	85.50	80.05	84.00	82.50
std. deviation 2021	3.59	3.44	2.86	4.01	4.20
<i>Spike length (excluding awns) (cm)</i>					
mean 2020	7.66	6.82	7.17	7.76	7.67
std. deviation 2020	0.57	0.67	0.56	0.66	0.71
mean 2021	9.01	8.02	7.58	8.00	9.43
std. deviation 2021	0.96	0.84	0.93	1.14	0.96
<i>Kernel weight (grams per 1000 kernels) (g)</i>					
mean 2020	50.58	48.26	46.17	48.68	47.47
std. deviation 2020	0.93	0.57	0.84	1.16	0.60
mean 2021	53.83	53.10	48.90	50.63	51.2
std. deviation 2021	1.70	0.58	0.44	1.05	0.40

*reference varieties



Barley: 'Ariber' (left) with reference varieties 'Waterloo' (centre left), 'AAC Mirabel' (centre), 'Richer' (centre right) and 'Sagamie' (right)



Aribier

Waterloo

AAC Mirabel

Richer

Sagamie

Barley: 'Aribier' (left) with reference varieties 'Waterloo' (centre left), 'AAC Mirabel' (centre), 'Richer' (centre right) and 'Sagamie' (right)
