BARLEY
(Hordeum vulgare)

Proposed denomination: **'Sirish'**
Application number: 16-8923
Application date: 2016/05/12
Applicant: Syngenta Participations AG, Basel, Switzerland
Agent in Canada: Syngenta Canada, Inc., Portage La Prairie, Manitoba
Breeder: Syngenta Participations AG, Basel, Switzerland

Varieties used for comparison: 'AAC Synergy' and 'AC Metcalfe'

Summary: *At tillering, the growth habit for 'Sirish' is semi-prostrate whereas the growth habit is erect to semi-erect for the reference varieties. At booting, 'Sirish' has a medium intensity of anthocyanin colouration of the auricles whereas it is weak for 'AC Metcalfe'. The flag leaves of 'Sirish' are shorter and narrower than those of the reference varieties. At the beginning of ripening, the plant height, which includes the awns, of 'Sirish' is shorter than that of the reference varieties. The curvature of the first segment of the rachis of 'Sirish' is weak whereas it is strong on 'AAC Synergy'. The spiculation of the inner lateral nerves of the dorsal side of the kernel lemma on 'Sirish' is absent or very weak whereas it is of medium intensity on the reference varieties.*

Description:
PLANT: two row, spring malting-type barley, medium frequency of plants with recurved flag leaves
YOUNG PLANT: semi-prostrate growth habit at tillering, absent or very sparse pubescence on lower leaf sheath

FLAG LEAF BLADE (AT BOOTING): sparse pubescence
FLAG LEAF SHEATH: medium glaucosity at booting, sparse pubescence
AURICLE: medium intensity of anthocyanin colouration, sparse pubescence on margins

SPIKE: mid-season emergence, medium intensity of glaucosity at end of anthesis, erect attitude, platform shaped collar, parallel sided shape, lax density, sterile spikelet attitude is parallel to weakly divergent, glume and awn of median spikelet are equal to length of grain
FIRST SEGMENT OF RACHIS: medium length, weak curvature
LEMMA AWNS: absent or very weak intensity of anthocyanin colouration of tips, longer than length of spike, rough spiculations on margins

KERNEL: absent or very weak anthocyanin colouration of nerves of lemma at early to soft dough stage, yellowish aleurone layer, long rachilla hairs, husk present, absent or very weak degree of spiculation of inner lateral nerves of dorsal side of lemma, glabrous ventral furrow, clasping disposition of lodicules, horseshoe shape basal marking, medium length, narrow to medium width

AGRONOMIC CHARACTERISTICS: good resistance to lodging, good malting quality

DISEASE REACTIONS: moderately resistant to Scald (*Rhynchosporium secalis*) and Common Root Rot (*Cochliobolus sativus*, *Fusarium* sp.); moderately resistant to moderately susceptible to Fusarium Head Blight (*Fusarium graminearum*) and Spot Blotch (*Cochliobolus sativus*); moderately susceptible to Net Blotch spot-form (*Pyrenophora teres*); susceptible to Stem Rust (*Puccinia graminis*)

Origin and Breeding: 'Sirish' (experimental designations TR14928 and SY411-292) originated from the cross between SY409-209 and NFS 4789 made in 2009 at Syngenta UK Ltd in Market Stainton, Lincolnshire, United Kingdom. It was developed using a standard pedigree selection system. In 2010, initial plant selections were made from the F1 generation grown in Market Stainton, United Kingdom and the F2 generations grown in Rolleston, New Zealand. In the spring of 2010, single F3 head rows were then grown in Market Stainton, UK with head row selections based on a visual assessment and selection made for Powdery mildew (*Erysiphe graminis*) resistance, heading date, plant height, lodging resistance, visual

yield prediction and ripening data. In the spring of 2010 and 2011, F4 plants were grown and selected in contra nursery plots in Rolleston, New Zealand based on the same criteria. F5 selections were done in replicated yield trials and nurseries in France and the United Kingdom in 2011. Malting quality assessments were performed on harvested material from 1 location in France and 2 locations in the United Kingdom. Further pre-registration selections were made in single locations in France, United Kingdom, Germany, Denmark and Ireland based on yield, disease resistance, agronomic and grain quality. The variety designated as the line SY411-292 was identified at the F6 generation whereas breeder seed was established at the F8 generation. Further testing was done in Canada. The line designated as TR14928 was further tested in the Western Cooperative Two-row Barley Registration Trial in 2014 and 2015 as well as the Collaborative Malting Barley Trials.

Tests and Trials: The comparative trials for 'Sirish' were conducted during the 2016 and 2018 growing seasons. Plots consisted of 7 rows with a row length of 3 metres and a row spacing of 18 cm. There were 3 replicates arranged in an RCB design. Measured characteristics were based on 20 measurements per variety per year. Mean differences were significant at the 5% probability level based on LSD values. Disease ratings were provided through the Disease Evaluation team of the Prairie Recommending Committee for Oat and Barley.

Comparison table for 'Sirish'

	'Sirish'	'AAC Synergy'*	'AC Metcalfe'*
Flag leaf length (cm)			
mean 2016 (LSD=0.95)	11.1	12.5	15.8
std. deviation 2016	2.1	1.8	1.4
mean 2018 (LSD=1.67)	9.5	11.5	11.9
std. deviation 2018	1.4	2.5	2.6
Flag leaf width (mm)			
mean 2016 (LSD=0.52)	7.7	9.8	9.1
std. deviation 2016	1.2	0.7	1.0
mean 2018 (LSD=1.12)	7.1	8.6	9.7
std. deviation 2018	1.0	1.5	2.0
Plant height (including awns) (cm)			
mean 2016 (LSD=1.2)	67.2	77.2	79.2
std. deviation 2016	2.4	3.2	4.4
mean 2018 (LSD=0.75)	65.1	74.9	77.4
std. deviation 2018	1.4	2.1	3.2

*reference varieties

Barley: 'Sirish' (centre) with reference varieties 'AAC Synergy' (left) and 'AC Metcalfe' (right)