



APPLICATIONS UNDER EXAMINATION

RAPESEED

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(Brassica napus)

Proposed denomination: 'Mainstar'
Application number: 18-9587
Application date: 2018/07/23
Applicant: Forage Innovations Limited, Christchurch, New Zealand
Agent in Canada: Smart & Biggar LLP, Ottawa, Ontario
Breeder: Stuart Gowers, Lincoln, New Zealand

Varieties used for comparison: 'Swift Utility' and 'Redstart'

Summary: *The cotyledon of 'Mainstar' is wider than those of 'Swift Utility' and 'Redstart' and shorter than the cotyledon of 'Swift Utility'. The leaf of 'Mainstar' has a medium number of lobes, while the leaf of 'Swift Utility' has many lobes and that of 'Redstart' has many to very many lobes. The leaf margin of 'Mainstar' is rounded with shallow indentations, while the leaf margin of 'Swift Utility' is sharp with indentations of medium depth. The leaf of 'Mainstar' is larger than that of 'Swift Utility' and wider than that of 'Redstart'. The petiole of 'Mainstar' is longer than that of 'Swift Utility'. The density of hairs on the upper side of the leaf is absent or very weak for 'Mainstar' while it is of a medium density for 'Redstart'.*

Description:

PLANT: forage type, winter type

COTYLEDON: broad, medium in length

LEAF: medium green, medium number of lobes, long, medium to broad, absent or very weak density of hairs on upper side

LEAF MARGIN: rounded, medium density of shallow indentations

PETIOLE: medium to long

Origin and Breeding: 'Mainstar' originated from a cross conducted in 2000 between EMX4s5.3 and C95H41.7 in Lincoln, New Zealand. The initial cross was followed by a number of generations of self pollination of single selected plants with subsequent insect cage multiplication of the progeny. The variety was identified as X95LX5 in 2014 and subsequently multiplied in insect cages for nucleus production. 'Mainstar' was selected based on forage yield and leaf to stem ratio.

Tests and Trials: The comparative trial for 'Mainstar' was conducted during the 2021 growing season in Central Blissville, New Brunswick. As winter type rapeseed does not exhibit good survival rates under Canadian winter conditions, the trial was planted in the spring only allowing for the observance of vegetative characteristics. The field trial consisted of an 18 square meter plot per variety. Each plot contained a minimum of 300 plants with 0.5 meters between the plots. The measured characteristics were based on 30 measurements. Mean differences were significant at the 2% probability level based on LSD values. The results were supported by the official technical examination report BRA035, provided by the New Zealand Plant Variety Rights Office in Lincoln, New Zealand. The trials were conducted in Lincoln, New Zealand during the 2015-2016 and 2016-2017 growing seasons.

Comparison table for 'Mainstar'

	'Mainstar'	'Swift Utility'*	'Redstart**'
<i>Cotyledon width (mm)</i>			
mean (LSD=1.0)	12.1	10.8	9.2
std. deviation	1.8	1.1	1.2
<i>Cotyledon length (mm)</i>			
mean(LSD=0.61)	5.6	6.7	5.7
std. deviation	1.1	0.7	0.9

Leaf number of lobes (count)

mean (LSD=0.85)	4.7	6.1	6.9
std. deviation	1.1	1.4	1.7

Leaf length (cm)

mean (LSD=3.58)	50.8	41.6	48.6
std. deviation	4.3	7.0	5.9

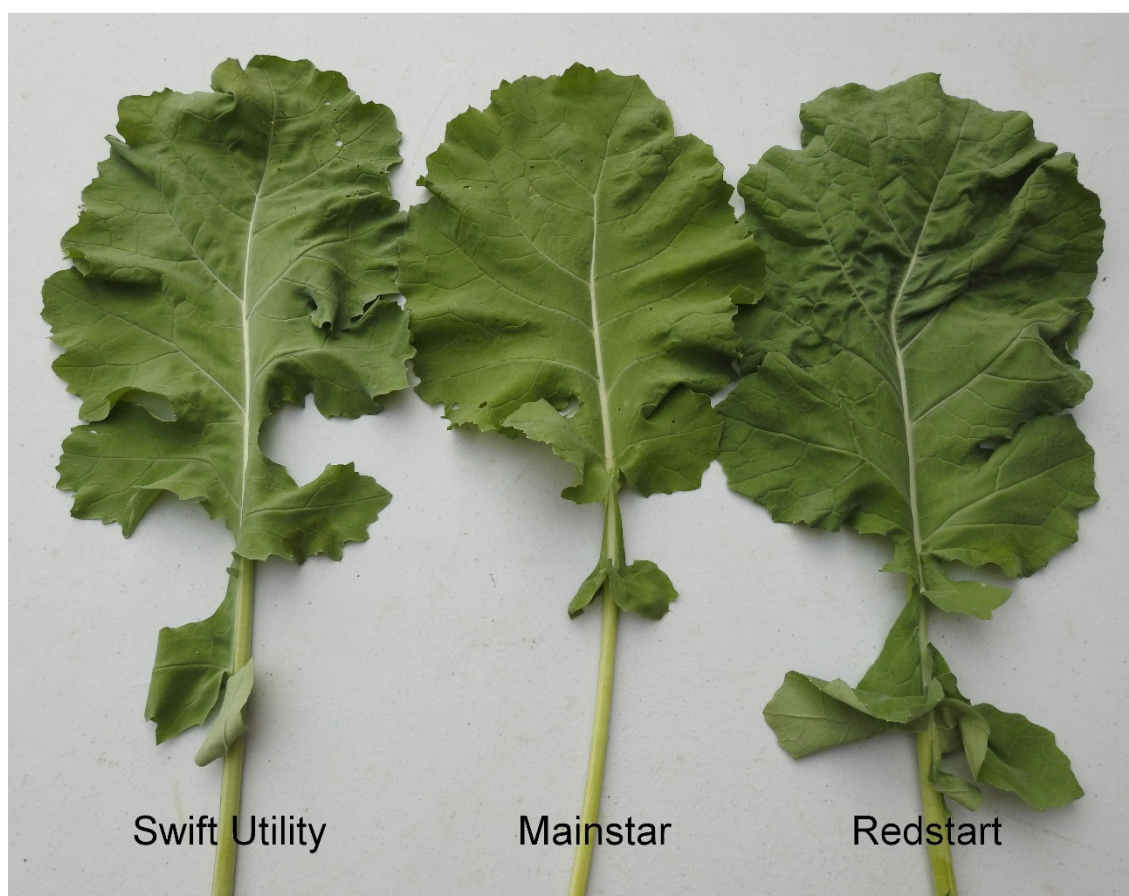
Leaf width (cm)

mean (LSD=1.11)	14.8	11.2	13.8
std. deviation	1.6	2.1	1.7

Petiole length (cm)

mean (LSD=2.95)	35.7	29.0	34.5
std. deviation	3.2	5.3	5.3

*reference varieties



Rapeseed: 'Mainstar' (centre) with reference varieties 'Swift Utility' (left) and 'Redstart' (right)



Rapeseed: 'Mainstar' (centre) with reference varieties 'Swift Utility' (left) and 'Redstart' (right)