



NORTHERN VICTORIA FORAGE VALUE INDEX 2021

ITALIAN RYEGRASS



The Forage Value Index (FVI) is a tool that helps Australian dairy farmers and their advisors to make more informed decisions when selecting ryegrass cultivars. It provides an accurate, reliable and independent assessment of the potential economic value of ryegrass cultivars in different dairy regions of southeast Australia. The FVI was initially launched in 2017 for perennial ryegrass only, and in 2021 has been expanded to include two additional species of ryegrass - Annual and Italian ryegrass.

How it is calculated

The FVI is calculated by multiplying the Performance Value of each cultivar (i.e. total kilograms dry matter produced per hectare per "FVI" season) by its Economic Value (i.e. the estimated value of this extra production per "FVI" season). There are five FVI seasons and these are outlined in more detail on page 4.

Performance Values are determined by industry assessed trial data. To be included in the FVI database, each cultivar must have data from at least three trials that have been conducted using strict industry protocols. The trials vary in duration depending on the species (three years for perennial cultivars, one year minimum for annual and Italian cultivars).

Reference cultivar

The Performance Value is expressed as a percentage change relative to a reference cultivar of ryegrass (a widely recognised cultivar by the industry), which differs for each species. The reference cultivar will always have an overall FVI of 0. In the Italian ryegrass FVI, the reference cultivar is Crusader.

Economic values

Economic Values (EVs) are determined by assessing the economic value of extra pasture grown during the respective seasons through an economic analysis of 'case study' farms in four different dairying regions in southeast Australia. For 2021, EVs currently only exist for the three Victorian dairy regions plus Tasmania, as these were the regions used for the perennial ryegrass FVI initially launched in 2017. From 2022 onwards, EVs will be developed and published for other regions of Australia where annual and Italian ryegrass are also widely used.

Information in the FVI tables

The FVI for each cultivar is expressed both individually as a number, and in collective groups as a colour, whereby those cultivars with the same colour are not significantly different to each other. The green colour indicates those cultivars that have performed the best in each region and have the most potential to contribute to operating profit. The FVI information allows users to rank cultivars according to their region and user nominated attributes (e.g. seasonal yields, ploidy, heading date, endophyte). The number of trials in which the cultivar has been tested is also included in the table. A cultivar needs to be included in at least three trials to qualify for inclusion in the FVI and the more trials it is included in – the more reliable the ranking is for that cultivar.

Future developments and improvements

Currently the FVI rankings are based on yield only, from independent trials run by the Pasture Trial Network. In the coming years, nutritive value data will be collected for each cultivar and included in the FVI tables and calculations for all species, as well as persistence for perennial ryegrass. Whilst we acknowledge that yield is not the only trait affecting the relative profitability of one cultivar over another, the FVI in its current form still provides a valuable independent indicator of the relative difference between cultivars and will continue to evolve and improve as it is updated with more trial data and new traits in the coming years.



Northern Victoria: Forage Value Index 2021 – ITALIAN RYEGRASS

Cultivar	FVI Nth Vic	Autumn	Winter	Early spring	Late spring	Summer	Endophyte	Ploidy	Heading date	Marketer	No. of trials	No of Trial (N. Vic)
Tempo	146	120	109	104	102	103	Nil	D	Late	Barenbrug	10	5
Aston	70	124	105	100	101	99	Nil	T	Late	Barenbrug	8	4
Feast II	51	119	103	98	101	101	Nil	T	Late	PGG Wrightson Seeds	9	5
Arise	41	100	104	101	101	101	Nil	T	Late	Barenbrug	7	4
Mohaka AR37	39	117	101	100	100	101	AR37	T	Late	Agricom	3	1
Jackpot	29	97	104	102	100	99	Nil	D	Late	DLF Seeds	10	5
SF Emmerson	23	112	97	99	101	102	Nil	T	Late	Seed Force	3	1
Concord II	22	97	103	102	100	101	Nil	D	Late	PGG Wrightson Seeds	10	5
Echo	9	104	100	100	101	100	Nil	T	Mid	Tas Global Seeds	3	2
SF Accelerate	8	93	100	100	102	100	Nil	D	Late	Seed Force	3	1
Amass	6	98	100	99	101	102	Nil	T	Mid	Valley Seeds	6	3
Lush AR37	4	100	100	99	100	101	AR37	T	Late	PGG Wrightson Seeds	6	4
Mona	3	100	100	98	102	100	Nil	T	Late	DLF Seeds	10	5
Asset AR37	2	95	103	100	100	100	AR37	D	Late	Agricom	4	1
Crusader	0	100	100	100	100	100	Nil	D	Late	Agricom	5	3
Nourish	0	100	102	98	100	101	Nil	T	Late	PGG Wrightson Seeds	6	4
Thumpa	-15	101	100	98	100	99	Nil	T	Late	Agricom	10	5
Knight	-25	96	105	99	98	99	Nil	D	Late	Agricom	10	5
Sonik	-41	92	100	98	100	99	Nil	D	Late	Cropmark Seeds	4	2
Maverick GII	-46	79	101	100	100	98	Nil	D	Mid	PGG Wrightson Seeds	4	1
Blade	-65	81	98	98	100	98	Nil	D	Late	Cropmark Seeds/Smyth Seeds	4	2

Notes

- 1 Crusader was chosen as the reference cultivar for the Italian ryegrass FVI, due to its relative performance being more widely known by the dairy industry compared to the other options. Unlike the Perennial and Annual FVI's where the reference cultivars used were towards the bottom of the FVI tables, Crusader is still a mid-ranking cultivar in the Italian ryegrass FVI despite being commercially available for many years. Therefore several cultivars in the Italian FVI have a negative FVI relative to Crusader. The reference cultivar in the FVI is always zero, and the FVI for all other cultivars in the list are measured against this line.
- 2 Data to create the performance values for each cultivar was taken from ten Italian ryegrass trials. The trials were located in the following regions and were measured at various stages between 2015 and 2019 – Leongatha, Terang, Howlong (x3), Kiewa Valley, Shepparton, Taree and Aberdeen (x2). Next years update to the Annual FVI will include more trials from Victoria, NSW and also Tasmania.
- 3 The FVI's for each cultivar are based on a combination of trials across several sites as described above, with the no of trials in each region column included to provide an indication of the amount of actual trial data in that region that contributed to the FVI for that particular cultivar.
- 4 Individual data from trials that have been published is available on the Pasture Trial Network website at tools.mla.com.au/ptn/#/home

Legend

Heading	Description
Cultivar	A plant variety that has been produced by selective breeding. Cultivars are as listed as on the Australian Seed Federation Pasture Seed Database
Colour bars	Cultivars with the same colour are not significantly different from each other.
FVI	The rating is based on the outcome of economic and performance values for each cultivar.
Seasonal performance	A performance value is based on the difference in dry matter production between an Italian ryegrass cultivar's seasonal performance and that of Crusader. This is a percentage ranking – percent better or worse than Crusader. For example, Crusader is always 100 for each FVI season. A cultivar that is 110 means that it produced 110 per cent of the dry matter produced by Crusader in that particular FVI season. A cultivar that is 97 means it produced 97 per cent of the dry matter produced by Crusader in that particular FVI season.
Autumn	March/April/May
Winter	June/July
Early spring	August/September
Late spring	October/November
Summer	December/January/February
Endophyte	A fungus which protects plants from a range of insect pests. Different types of endophytes affect persistence, dry matter production, insect pest species and nutritive value in different ways.
Ploidy	The number of chromosomes per cell in the plant. A diploid ryegrass has two, while a tetraploid has four.
Heading date	The date when 50 per cent of the plants of a variety have emerged seed heads in a typical year. Heading dates are listed on the Australian Seed Federation Pasture Seed Database.
Marketer	The company marketing the cultivar as per the Australian Seed Federation Pasture Seed Database.
No. of trials	To be included in the Italian Ryegrass FVI, each cultivar must have data from at least three, one-year trials.

New Economic values for 2021 release

The 2021 updated FVI tables is accompanied by updated economic values for the value of an additional kilogram of ryegrass within each of the five FVI seasons in the four regions. The values were updated to reflect greater volatility in the hay and grain market over the last few years and are based on a five-year rolling average of hay and grain prices within each of the four regions. The new economic values used are presented in the following table:

Region	Autumn (\$)	Winter (\$)	Early Spring (\$)	Late Spring (\$)	Summer (\$)
South West Victoria	0.34	0.36	0.24	0.30	0.41
Northern Victoria	0.36	0.42	0.46	0.42	0.33
Gippsland	0.44	0.58	0.49	0.29	0.45
Tasmania	0.35	0.37	0.38	0.11	0.18

Northern Victoria Autumn seasonal performance – ITALIAN RYEGRASS

Cultivar	Autumn	Winter	Early Spring	Late Spring	Summer	FVI Nth Vic	Endophyte	Ploidy	Heading Date	Marketer	No. of trials
Aston	124	105	100	101	99	70	Nil	T	Late	Barenbrug	8
Tempo	120	109	104	102	103	146	Nil	D	Late	Barenbrug	10
Feast II	119	103	98	101	101	51	Nil	T	Late	PGG Wrightson Seeds	9
Mohaka AR37	117	101	100	100	101	39	AR37	T	Late	Agricom	3
SF Emmerson	112	97	99	101	102	23	Nil	T	Late	Seed Force	3
Echo	104	100	100	101	100	9	Nil	T	Mid	Tas Global Seeds	3
Thumpa	101	100	98	100	99	-15	Nil	T	Late	Agricom	10
Arise	100	104	101	101	101	41	Nil	T	Late	Barenbrug	7
Nourish	100	102	98	100	101	0	Nil	T	Late	PGG Wrightson Seeds	6
Lush AR37	100	100	99	100	101	4	AR37	T	Late	PGG Wrightson Seeds	6
Crusader	100	100	100	100	100	0	Nil	D	Late	Agricom	5
Mona	100	100	98	102	100	3	Nil	T	Late	DLF Seeds	10
Amass	98	100	99	101	102	6	Nil	T	Mid	Valley Seeds	6
Jackpot	97	104	102	100	99	29	Nil	D	Late	DLF Seeds	10
Concord II	97	103	102	100	101	22	Nil	D	Late	PGG Wrightson Seeds	10
Knight	96	105	99	98	99	-25	Nil	D	Late	Agricom	10
Asset AR37	95	103	100	100	100	2	AR37	D	Late	Agricom	4
SF Accelerate	93	100	100	102	100	8	Nil	D	Late	Seed Force	3
Sonik	92	100	98	100	99	-41	Nil	D	Late	Cropmark Seeds	4
Blade	81	98	98	100	98	-65	Nil	D	Late	Cropmark Seeds/Smyth Seeds	4
Maverick GII	79	101	100	100	98	-46	Nil	D	Mid	PGG Wrightson Seeds	4

Northern Victoria Winter seasonal performance – ITALIAN RYEGRASS

Cultivar		Winter	Early Spring	Late Spring	Summer	Autumn	FVI Nth Vic	Endophyte	Ploidy	Heading Date	Marketer	No. of trials
Tempo	■	109	104	102	103	120	146	Nil	D	Late	Barenbrug	10
Aston	■ ■	105	100	101	99	124	70	Nil	T	Late	Barenbrug	8
Knight	■ ■	105	99	98	99	96	-25	Nil	D	Late	Agricom	10
Jackpot	■ ■	104	102	100	99	97	29	Nil	D	Late	DLF Seeds	10
Arise	■ ■ ■	104	101	101	101	100	41	Nil	T	Late	Barenbrug	7
Concord II	■ ■ ■	103	102	100	101	97	22	Nil	D	Late	PGG Wrightson Seeds	10
Asset AR37	■ ■ ■	103	100	100	100	95	2	AR37	D	Late	Agricom	4
Feast II	■ ■ ■	103	98	101	101	119	51	Nil	T	Late	PGG Wrightson Seeds	9
Nourish	■ ■ ■	102	98	100	101	100	0	Nil	T	Late	PGG Wrightson Seeds	6
Mohaka AR37	■ ■ ■	101	100	100	101	117	39	AR37	T	Late	Agricom	3
Maverick GII	■ ■ ■	101	100	100	98	79	-46	Nil	D	Mid	PGG Wrightson Seeds	4
Thumpa	■ ■ ■	100	98	100	99	101	-15	Nil	T	Late	Agricom	10
Lush AR37	■ ■ ■	100	99	100	101	100	4	AR37	T	Late	PGG Wrightson Seeds	6
Sonik	■ ■ ■	100	98	100	99	92	-41	Nil	D	Late	Cropmark Seeds	4
Mona	■ ■ ■	100	98	102	100	100	3	Nil	T	Late	DLF Seeds	10
Crusader	■ ■ ■	100	100	100	100	100	0	Nil	D	Late	Agricom	5
Amass	■ ■ ■	100	99	101	102	98	6	Nil	T	Mid	Valley Seeds	6
SF Accelerate	■ ■ ■	100	100	102	100	93	8	Nil	D	Late	Seed Force	3
Echo	■ ■ ■	100	100	101	100	104	9	Nil	T	Mid	Tas Global Seeds	3
Blade	■ ■ ■	98	98	100	98	81	-65	Nil	D	Late	Cropmark Seeds/Smyth Seeds	4
SF Emmerson	■ ■ ■	97	99	101	102	112	23	Nil	T	Late	Seed Force	3

Northern Victoria early Spring seasonal performance – ITALIAN RYEGRASS

Cultivar		Early Spring	Late Spring	Summer	Autumn	Winter	FVI Nth Vic	Endophyte	Ploidy	Heading Date	Marketer	No. of trials
Tempo	■	104	102	103	120	109	146	Nil	D	Late	Barenbrug	10
Jackpot	■ ■	102	100	99	97	104	29	Nil	D	Late	DLF Seeds	10
Concord II	■ ■ ■	102	100	101	97	103	22	Nil	D	Late	PGG Wrightson Seeds	10
Arise	■ ■ ■ ■	101	101	101	100	104	41	Nil	T	Late	Barenbrug	7
Aston	■ ■ ■ ■	100	101	99	124	105	70	Nil	T	Late	Barenbrug	8
Asset AR37	■ ■ ■ ■	100	100	100	95	103	2	AR37	D	Late	Agricom	4
SF Accelerate	■ ■ ■ ■	100	102	100	93	100	8	Nil	D	Late	Seed Force	3
Maverick GII	■ ■ ■ ■	100	100	98	79	101	-46	Nil	D	Mid	PGG Wrightson Seeds	4
Crusader	■ ■ ■ ■	100	100	100	100	100	0	Nil	D	Late	Agricom	5
Echo	■ ■ ■ ■	100	101	100	104	100	9	Nil	T	Mid	Tas Global Seeds	3
Mohaka AR37	■ ■ ■ ■	100	100	101	117	101	39	AR37	T	Late	Agricom	3
Lush AR37	■ ■ ■ ■	99	100	101	100	100	4	AR37	T	Late	PGG Wrightson Seeds	6
SF Emmerson	■ ■ ■ ■	99	101	102	112	97	23	Nil	T	Late	Seed Force	3
Knight	■ ■ ■ ■	99	98	99	96	105	-25	Nil	D	Late	Agricom	10
Amass	■ ■ ■ ■	99	101	102	98	100	6	Nil	T	Mid	Valley Seeds	6
Blade	■ ■ ■ ■	98	100	98	81	98	-65	Nil	D	Late	Cropmark Seeds/Smyth Seeds	4
Sonik	■ ■ ■ ■	98	100	99	92	100	-41	Nil	D	Late	Cropmark Seeds	4
Nourish	■ ■ ■ ■	98	100	101	100	102	0	Nil	T	Late	PGG Wrightson Seeds	6
Mona	■ ■ ■ ■	98	102	100	100	100	3	Nil	T	Late	DLF Seeds	10
Thumpa	■ ■ ■ ■	98	100	99	101	100	-15	Nil	T	Late	Agricom	10
Feast II	■ ■ ■ ■	98	101	101	119	103	51	Nil	T	Late	PGG Wrightson Seeds	9

Northern Victoria late Spring seasonal performance – ITALIAN RYEGRASS

Cultivar		Late Spring	Summer	Autumn	Winter	Early Spring	FVI Nth Vic	Endophyte	Ploidy	Heading Date	Marketer	No. of trials
Mona	■	102	100	100	100	98	3	Nil	T	Late	DLF Seeds	10
Tempo	■	102	103	120	109	104	146	Nil	D	Late	Barenbrug	10
SF Accelerate	■	102	100	93	100	100	8	Nil	D	Late	Seed Force	3
Feast II	■	101	101	119	103	98	51	Nil	T	Late	PGG Wrightson Seeds	9
Arise	■	101	101	100	104	101	41	Nil	T	Late	Barenbrug	7
SF Emmerson	■	101	102	112	97	99	23	Nil	T	Late	Seed Force	3
Amass	■	101	102	98	100	99	6	Nil	T	Mid	Valley Seeds	6
Aston	■	101	99	124	105	100	70	Nil	T	Late	Barenbrug	8
Echo	■ ■	101	100	104	100	100	9	Nil	T	Mid	Tas Global Seeds	3
Jackpot	■ ■	100	99	97	104	102	29	Nil	D	Late	DLF Seeds	10
Lush AR37	■ ■	100	101	100	100	99	4	AR37	T	Late	PGG Wrightson Seeds	6
Blade	■ ■	100	98	81	98	98	-65	Nil	D	Late	Cropmark Seeds/Smyth Seeds	4
Thumpa	■ ■	100	99	101	100	98	-15	Nil	T	Late	Agricom	10
Mohaka AR37	■ ■	100	101	117	101	100	39	AR37	T	Late	Agricom	3
Crusader	■ ■	100	100	100	100	100	0	Nil	D	Late	Agricom	5
Nourish	■ ■	100	101	100	102	98	0	Nil	T	Late	PGG Wrightson Seeds	6
Maverick GII	■ ■	100	98	79	101	100	-46	Nil	D	Mid	PGG Wrightson Seeds	4
Asset AR37	■ ■	100	100	95	103	100	2	AR37	D	Late	Agricom	4
Concord II	■ ■	100	101	97	103	102	22	Nil	D	Late	PGG Wrightson Seeds	10
Sonik	■ ■	100	99	92	100	98	-41	Nil	D	Late	Cropmark Seeds	4
Knight	■ ■	98	99	96	105	99	-25	Nil	D	Late	Agricom	10

Northern Victoria Summer seasonal performance – ITALIAN RYEGRASS

Cultivar	Summer	Autumn	Winter	E.Spring	L.Spring	FVI Nth Vic	Endophyte	Ploidy	Heading Date	Marketer	No. of trials
Tempo	103	120	109	104	102	146	Nil	D	Late	Barenbrug	10
SF Emmerson	102	112	97	99	101	23	Nil	T	Late	Seed Force	3
Amass	102	98	100	99	101	6	Nil	T	Mid	Valley Seeds	6
Nourish	101	100	102	98	100	0	Nil	T	Late	PGG Wrightson Seeds	6
Feast II	101	119	103	98	101	51	Nil	T	Late	PGG Wrightson Seeds	9
Arise	101	100	104	101	101	41	Nil	T	Late	Barenbrug	7
Lush AR37	101	100	100	99	100	4	AR37	T	Late	PGG Wrightson Seeds	6
Mohaka AR37	101	117	101	100	100	39	AR37	T	Late	Agricom	3
Concord II	101	97	103	102	100	22	Nil	D	Late	PGG Wrightson Seeds	10
SF Accelerate	100	93	100	100	102	8	Nil	D	Late	Seed Force	3
Crusader	100	100	100	100	100	0	Nil	D	Late	Agricom	5
Asset AR37	100	95	103	100	100	2	AR37	D	Late	Agricom	4
Mona	100	100	100	98	102	3	Nil	T	Late	DLF Seeds	10
Echo	100	104	100	100	101	9	Nil	T	Mid	Tas Global Seeds	3
Thumpa	99	101	100	98	100	-15	Nil	T	Late	Agricom	10
Aston	99	124	105	100	101	70	Nil	T	Late	Barenbrug	8
Sonik	99	92	100	98	100	-41	Nil	D	Late	Cropmark Seeds	4
Knight	99	96	105	99	98	-25	Nil	D	Late	Agricom	10
Jackpot	99	97	104	102	100	29	Nil	D	Late	DLF Seeds	10
Maverick GII	98	79	101	100	100	-46	Nil	D	Mid	PGG Wrightson Seeds	4
Blade	98	81	98	98	100	-65	Nil	D	Late	Cropmark Seeds/Smyth Seeds	4

Disclaimer

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