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Background

Ceres *ONE⁵⁰* is a cross of elite New Zealand genetics and genetics of North West Spanish origin, producing a cultivar with exceptional leaf production through summer, and high dry matter production through autumn and winter.

ONE⁵⁰ is the latest generation of late-heading diploid perennial ryegrasses, and has outstanding dry matter production. Its yield potential will be best realised in fertile, productive conditions. The late-heading characteristic makes late-October and November pasture management easier as *ONE⁵⁰* maintains vegetative leaf production at this time. This contrasts with most of the mid-heading ryegrasses which require good grazing management at this time to control stem growth.

ONE⁵⁰ has been bred using individual plants that have been screened in the pest and rust-prone north of New Zealand. It has been a leading ryegrass in trials at a number of locations, and is included in a larger number in progress through the North and South Islands.

Characteristics

Perenniality	Leaf Size	Flowering Date	Suggested Sowing Rate (kg/ha)
100% Perennial	Medium	Late (+20)	18-20

Rust Tolerance	1000 Seed Weight	Endophyte	Ploidy
High	2.0 grams	AR1 or LE	Diploid

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Key Features

- ✓ Outstanding summer, autumn and winter production
- ✓ Very high total production
- ✓ Late-heading, good spring quality and summer leafiness
- ✓ A New Zealand-bred and adapted late-heading perennial ryegrass

Uses

Due to its production potential; *ONE⁵⁰* is best suited to intensive and productive farming systems. It is well suited to dairy, beef and lamb finishing systems in fertile conditions where its yield advantages can be best realised.

It is ideal to use in sheep-breeding farms, where the late-heading nature of *ONE⁵⁰* will help improve late-spring pasture quality and weaning weights. This heading date should be used in moderation in this farm system, as most late-heading cultivars are slow through the critical set-stock periods of September and early October relative to the best mid-heading ryegrasses.

It is adapted to most New Zealand environments, especially those with medium to high fertility, periodic summer moisture or irrigation, and good grazing management.



Production – North Island

**Table 1: Western Manawatu Perennial Ryegrass 2005 - 2008 Trial Summary
Ryegrass Seasonal and Total Relative Yield to Trial Mean**

Cultivar	Winter	Early Spring	Late Spring	Summer	Autumn	Annual
ONE50 HE	119	98	108	125	112	112
Revolution AR1	104	92	102	110	108	104
Extreme AR6	104	97	103	110	99	103
Bronsyn AR1	96	102	97	106	106	102
Matrix HE	104	96	98	107	102	101
Impact AR1	109	94	102	100	101	101
Samson AR1	106	102	101	99	100	101
Hillary AR1	86	100	99	97	100	98
Commando AR1	86	103	100	90	93	95
Cannon AR1	101	99	94	87	98	95
Horizon HE	93	115	99	84	86	94
RuaNui	90	102	97	85	96	94
LSD (5% Level)	12	10	7	19	10	8
Trial Mean (kgDM/ha)	1115	2278	4054	3189	3606	14242

Table 2: Manawatu – 2005-2008 Summary Ryegrass Relative Annual Yield

Cultivar	Year 1	Year 2	Year 3
ONE50 HE	113	111	112
Revolution AR1	105	103	103
Extreme AR6	106	99	102
Bronsyn AR1	102	105	99
Matrix HE	105	98	99
Impact AR1	103	98	100
Samson AR1	97	101	106
Hillary AR1	96	102	96
Commando AR1	95	97	94
Cannon AR1	93	96	96
Horizon HE	91	97	97
RuaNui	95	92	96
LSD (5% Level)	8	10	10
Trial Mean (kgDM/ha)	17917	13128	11680



Production - South Island

Figure 1: Canterbury NFVT® Trials 1991-2008 – Summer Yield

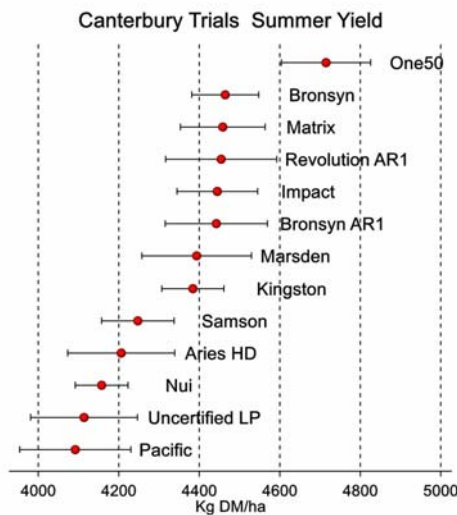
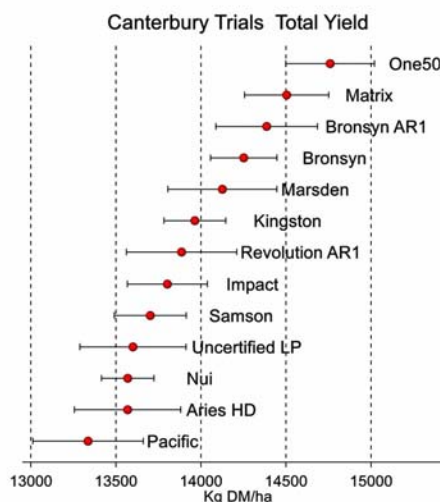


Figure 2: Canterbury NFVT® Trials 1991-2008– Total Yield



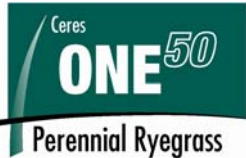


Table 3: Tapanui Perennial Ryegrass 2005 - 2008 Trial Summary
Ryegrass Relative Yield Divided Seasonally

Cultivar	Winter	Early Spring	Late Spring	Summer	Autumn	Total
One50	124	99	114	110	109	110
Nui	88	102	101	105	105	102
Supreme	106	102	102	97	95	99
Matrix	117	96	96	100	99	99
Aries	84	94	105	100	94	99
Cannon	93	104	98	98	100	99
Kingston	95	103	97	98	98	98
Samson	107	103	94	96	99	98
Bronsyn	85	98	94	96	100	96
LSD (5% level)	19	8	13	14	9	9
Trial Mean (kgDM/ha)	1018	2365	5543	6069	2888	17883

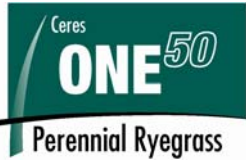
Table 4: Tapanui Perennial Ryegrass 2005 - 2008 Trial Summary
Ryegrass Annual Relative Yield to Trial Mean

Cultivar	Year 1	Year 2	Year 3
One50	113	107	106
Samson	97	96	104
Matrix	97	99	103
Nui	102	104	102
Cannon	99	99	98
Supreme	101	97	98
Kingston	96	104	98
Bronsyn	96	96	96
Aries	99	99	95
LSD (5% level)	10	13	10
Trial Mean (kgDM/ha)	23388	18112	11759

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Disease

ONE⁵⁰ is equal to the modern industry standards for rust tolerance, as seen from the results of the Waikato 2002-05 NFVT trial reported in Table 3.

Table 5: Waikato NFVT trial P202TEA Rust scores 2002-2005

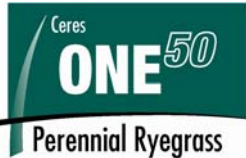
Cultivar	Rust Score		Rust Score		Rust Score	Average Rust Score
	26-Jan-04		18-Feb-04			
Alto	6	bc	7	ab	7	7 ab
Bronsyn	6	be	6	ac	7	6 bc
<i>ONE⁵⁰</i>	6	be	5	bf	8	6 bc
Arrow	6	bd	5	bf	7	6 bd
Impact	6	be	6	af	7	6 be
Matrix	5	de	5	df	7	5 df
Nui	5	ce	3	g	7	5 f
Significance	***		***		NS	***
CV%	11.6		14.8		8.2	7.2
LSD (5% Level)	1		2		1	1
Trial Mean (kgDM/ha)	6		5		7	6

Visually assessed on basis 9= no rust, 1 = very rusty
Averages followed by the same letter are not significantly different, P<0.05

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Suggested Mixes

Due to the productive nature of *ONE⁵⁰* perennial ryegrass, it is recommended for paddocks of medium to higher fertility or farming practices that will provide adequate seasonal fertiliser.

High-fertility dairy pastures

<i>ONE⁵⁰</i> perennial ryegrass	20 kg/ha
<i>Tribute</i> white clover (bare seed)	3 kg/ha
<i>Emerald</i> white clover (bare seed)	2 kg/ha
Total	25 kg/ha

High-performance finishing pasture

<i>ONE⁵⁰</i> perennial ryegrass	20 kg/ha
<i>Viking</i> timothy	2 kg/ha
<i>Tribute</i> white clover (bare seed)	4 kg/ha
<i>Colenso</i> red clover (bare seed)	4 kg/ha
<i>Choice</i> chicory	1 kg/ha
<i>Tonic</i> plantain	1 kg/ha
Total	32 kg/ha

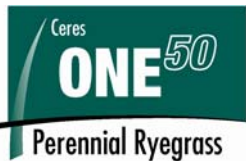
High performance pasture with spring lift (South Island only)

<i>ONE⁵⁰</i> perennial ryegrass	12 kg/ha
<i>Supreme^{PLUS}</i> long-rotation ryegrass	8 kg/ha
<i>Viking</i> timothy	2 kg/ha
<i>Tribute</i> white clover (bare seed)	4 kg/ha
<i>Colenso</i> red clover (bare seed)	4 kg/ha
<i>Choice</i> chicory	1 kg/ha
<i>Tonic</i> plantain	1 kg/ha
Total	32 kg/ha

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Late-Heading Perennial Mix (South Island)

<i>ONE</i> ⁵⁰ perennial ryegrass	18 kg/ha
<i>Tribute</i> white clover (bare seed)	4 kg/ha
<i>Sensation</i> red clover (bare seed)	4 kg/ha
<i>Choice</i> chicory (bare seed)	1.5 kg/ha
<i>Tonic</i> plantain	1 kg/ha
<i>Charlton</i> timothy	1 kg/ha
Total	29.5 kg/ha

Late-Heading Perennial Mix (North Island)

<i>ONE</i> ⁵⁰ perennial ryegrass	18 kg/ha
<i>Tribute</i> white clover (bare seed)	2 kg/ha
<i>Sensation</i> red clover (bare seed)	2 kg/ha
<i>Emerald</i> white clover (bare seed)	2 kg/ha
<i>Choice</i> chicory (bare seed)	1.5 kg/ha
<i>Tonic</i> plantain	1 kg/ha
Total	26.5 kg/ha