

CM142 Endophyte.

Going the distance for
Kiwi farmers.

GROWING CLOSER

A landscape photograph showing a vibrant green field in the foreground, leading up to a line of trees and a hillside. The sun is low on the horizon, creating a warm, golden glow and long shadows across the field. The sky is a clear, deep blue with a few wispy clouds near the horizon.

We searched the world for improved endophytes.

After screening thousands of samples we found an exciting new endophyte **CM142** from a dry, infertile semi-alpine region of Greece. It was during early research that our science team quickly recognised its high insect pest efficacy.

Thoroughly researched and tested on farm.

Once discovered, our science team embarked on years of research and on-farm trials to test the efficacy of this new novel endophyte - named by Cropmark Seeds as CM142.

Our R&D process included testing:

Commercial potential: CM142 showed the ability to be successfully transmitted into seed allowing vigorous testing to continue.

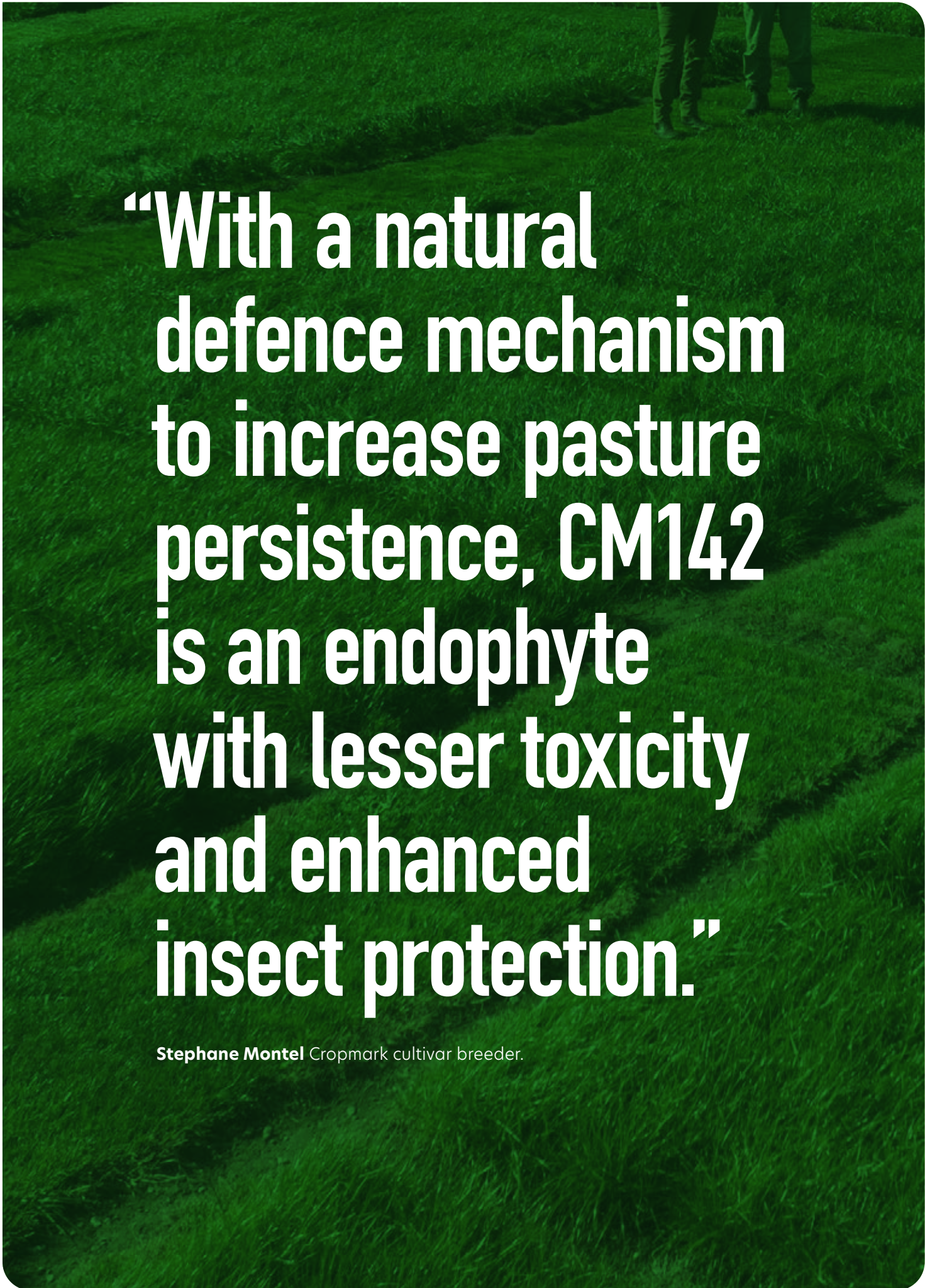
Insect tolerance: CM142 grasses have been tested by independent specialist entomologists in New Zealand and Australia, with results confirming its strong insect tolerance.

Cropmark compatibility check: CM142 was included in the Cropmark breeding programme to check its long-term compatibility and stability in ryegrass.

Safety trials: Animal safety is paramount. Five years of animal safety testing was carried out, confirming that the CM142 had enhanced animal safety.

Ground-breaking technology - patent pending.

With Plant Variety Rights granted and patent pending, CM142 is set to be an exciting new endophyte technology. In anticipation of its launch to market, ryegrass seed containing CM142 has been distributed to participating livestock farmers throughout the country to further assess its on-farm performance.



“With a natural defence mechanism to increase pasture persistence, CM142 is an endophyte with lesser toxicity and enhanced insect protection.”

Stephane Montel Cropmark cultivar breeder.

Benefits you can expect from CM142 endophyte.

With a different genetic background to other endophytes and lower levels of *epoxy-janthitrems* alkaloids, CM142 delivers performance and persistence for Kiwi farmers.

Safer for animals, hard on pests.

Animal toxicosis can come with a hefty price tag for farmers, therefore finding a balance between animal safety and alkaloid production for insect deterrence is key.

With CM142, there's an optimal concentration of the *epoxy-janthitrems* alkaloid, shown in trials to significantly reduce the frequency and severity of ryegrass staggers from animals consuming grass with CM142.

The pests in question.

Along with high animal safety results, rigorous trials have also shown that CM142 provides resistance against a range of destructive pasture pests, including:

- ▶ Argentine Stem Weevil
- ▶ Black Beetle
- ▶ Porina Caterpillar
- ▶ Root Aphid



CM142 delivers performance and persistence for Kiwi farmers.

Alkaloid production by some novel endophytes.

Taxon	Endophyte Strain	<i>Epoxy-janthitrems</i>	Lolitrems B	Ergovaline	Peramine	Lolines
	CM142	+	-	-	-	-
	AR1	-	-	-	+	-
	AR37	+	-	-	-	-
<i>Epichloë festucae</i> <i>var. lolii</i>	NEA2	-	+	+	+	-
	NEA3	-	-	+	+	-
	NEA12	+	-	-	-	-
	RGT18	+	-	-	-	-

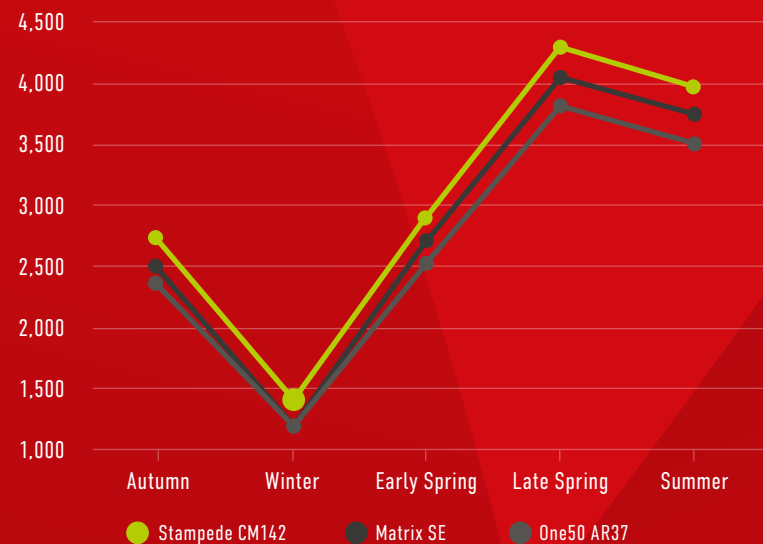
Key: + Alkaloid produced in planta, - Alkaloid not produced in planta

Stampede goes the distance.

We Kiwis know a thing or two about going the distance. It's our mix of persistence, toughness and high performance that mean we consistently stay the course and punch above our weight.

It's that same mix of qualities you'll find in our new Stampede perennial ryegrass with innovative CM142 endophyte. It's been specifically developed and extensively trialled in New Zealand to go the distance for Kiwi farmers.

Seasonal dry matter yield. (kgDM/ha)



STAMPEDE

DIPLOID PERENNIAL RYEGRASS

Stampede Perennial Ryegrass is a brand-new, New Zealand-bred diploid ryegrass derived from Matrix, One50 and Prospect, and with the innovative CM142 Endophyte.

It offers robust all-year growth, strong autumn rebound and high tiller density for exceptional dry matter production. With improved rust resistance, late heading, and a high leaf-to-stem ratio, Stampede is designed for yield persistence.



WHERE IT FITS

Suited to dairy, sheep and beef farming systems where performance and persistence are key.

Agronomic traits

- ✦ Ploidy: Diploid
- ✦ Heading date: Late +14 days
- ✦ Persistence: 5+ years*
- ✦ Endophyte: CM142, Nil
- ✦ Winter activity: High
- ✦ Rust resistance: 9**

Animal safety

CM142 endophyte:



Sowing information

- ✦ Sowing rate: 18-20kg/Ha
- ✦ Under-sowing: 8-15kg/Ha
- ✦ Sowing depth: 1-2cm
- ✦ Sowing season: Autumn and spring

*Subject to climate, insect pest pressure and management
**1 = Susceptible, 9 = Resistant



AVATAR

TETRAPLOID PERENNIAL RYEGRASS

The pinnacle of pasture performance. Avatar tetraploid perennial ryegrass, now containing innovative CM142 endophyte, ensures robust year-round growth, enhanced animal safety and insect tolerance. With impressive dry matter production, Avatar stands out for its high metabolisable energy and digestibility.

Avatar's late heading, maintains pasture quality well into spring, Avatar promotes higher livestock performance potential. Available in New Zealand only.



Growing closer

At Cropmark, closer is more than a physical proximity. It's a way of working that runs deep in our business. It's about forging relationships with highly innovative and professional breeding programmes around the world so we can continue to improve farming performance throughout Australasia. It's about taking the time to know how best to support our farmers, agronomists and retail partners, and always being available to help them deliver the very best solutions for their customers. It's actively listening to farmers, creating a personal connection, and delivering outcomes that meet their production and profitability goals. And it's about never letting the future out of our sight, so that we stay at the forefront of sustainable agriculture practice, always.

WHERE IT FITS

Dairy, sheep and beef farming systems where high yield, strong winter growth and high forage quality is required.

Agronomic traits

- ▶ Ploidy: Tetraploid
- ▶ Heading date: Late +22 days
- ▶ Persistence: 5+ years*
- ▶ Endophyte: CM142, Nil
- ▶ Winter activity: High
- ▶ Rust resistance: 9**

Animal safety

CM142 endophyte:



Sowing information

- ▶ Sowing rate: 25-30kg/Ha
- ▶ Under-sowing: 8-15kg/Ha
- ▶ Sowing depth: 1-2cm
- ▶ Sowing season: Autumn and spring

*Subject to climate, insect pest pressure and management
**1 = Susceptible, 9 = Resistant

Cropmark forage seeds
are available through
your local farm retailer.



Visit cropmarkseeds.com
to find out more.

0800 427 676



GROWING CLOSER