

Inoculant Selector

Strain	Host Plant - Common Name	Seed Treated Per EasyRhiz Vial	EasyRhiz Protector Pack Required Per Vial
AL, "Lucerne"	Lucerne, Strand medic, Disc medic	100kg	100g
AM, "Medic"	Barrel medic, Burr medic, Snail medic, Sphere medic, Gama medic, Murex medic	200kg	250g
B, "White clover"	White clover, Red clover, Strawberry clover, Alsike clover, Berseem (Egyptian) clover, Cluster or Ball clover, Suckling clover	100kg	100g
C, "Sub clover"	Crimson clover, Cupped clover, Helmet clover, Purple clover, Rose clover, Sub clover	200kg	250g
	Arrowleaf clover, Balansa clover, Gland clover, Persian (Shaftal) clover	100kg	250g
E, "Pea"	Field pea, Grass Pea, Common vetch or Tare, Bitter vetch, Lathyrus, Purple vetch, Pea, Woolly pod vetch	500kg	250g
F, "Faba"	Faba, Tick or Broad bean	500kg	250g
	Lentil	250kg	250g
G, "Lupin"	All lupin	500kg	250g
H, "Soy"	Soybean	500kg	250g
I, "Mung Bean"	Cowpea, Mung bean, Moth bean, Dune bean, Rice bean, Snake bean, Creeping vigna	500kg	250g
J, "Lab Lab"	Dolichos lablab, Pigeon pea, Hyacinth bean, Perennial horse gram, (Axillaris)	500kg 250kg	250g 250g
M, "Siratro"	Butterfly pea, Atro, Tropical kudzu, Pueru, Glycine, Siratro, Jack bean, Calopo, Gambia pea, Phasey bean, Velvet bean, Banana bean, Wing bean or Goa, Wynn Cassia, Kudzu	100kg	250g
N, "Chickpea"	All Chickpea	500kg	250g
P, "Peanut"	Peanut or Groundnut	500kg	250g
S, Serradella	All Serradella	200kg	250g

Special Inoculants

5G1B	Adzuki bean	200kg	250g
WSM1497	Biserrula	50kg	100g
SU343	Birdsfoot trefoil (<i>Lotus corniculatus</i>)	25kg	100g
CB1717	Burgundy bean	100kg	100g
CC283b	Caucasian (Kura) clover	50kg	100g
CB1923	Centro, Centurion	200kg	250g
CB3126	Desmanthus	100kg	250g
	Leucaena	250kg	250g
CB627	Desmodium	50kg	100g
SU277	Fenugreek	200kg	250g
CC511	French or Common bean, Navy, Kidney, Dry, Lima beans	250kg	250g
CB3035	Guar or Cluster bean	250kg	250g
CB2312	Jointvetch, Aeschynomene	100kg	100g
CB782	Kenya white clover (<i>Trifolium semipilosum</i>)	50kg	100g
CB376	Lotononis	25kg	100g
CC829 (Lotus)	Lotus, Lotus pedunculatus	25kg	100g
CIAT3101	Pinto peanut	250kg	250g
CC1099	Sainfoin	100kg	100g
CB1650	Stylo - Caribbean stylo (<i>Stylosanthes hamata</i>)	50kg	100g
CB3481	Stylo - Caatinga stylo (<i>Stylosanthes seabrana</i>)	50kg	100g
CB82	Stylo - All other Stylo (Fine stem, Shrubby, Townsville)	50kg	100g
WSM 1592	Sulla	100kg	100g
CC1502	Tree lucerne or Tagasaste	25kg	100g



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EasyRhiz Legume Inoculant is suitable for coating seed prior to sowing or direct liquid injection during sowing.

EasyRhiz is supplied as two parts:

- A glass vial of freeze-dried *Rhizobium* bacteria.
- 100g or 250g pack of EasyRhiz Protecting Agent.

EasyRhiz Protector

EasyRhiz Protector provides a protective film around the bacteria as well as assisting suspension during application.

EasyRhiz Application

Liquid Injection

1. Add cold water to EasyRhiz Inoculant in the glass vial and shake to dissolve powder.
 2. Mix vial contents and EasyRhiz Protector with water and spray or dribble around the seed as it is sown.
- The rate of water is not critical (20 -200 litres/ha) however it should be evenly distributed and in close proximity to the germinating seed. Preferably the seed is sprayed by the inoculant as it passes out the sowing tyne.

Seed Coating

1. Add cold water to EasyRhiz Inoculant in the glass vial and shake to dissolve powder.
2. Add one 250g pack of EasyRhiz Protector to 2.5 litres of water to coat 500kg of seed. Mix the two solutions together.
3. Mix this solution evenly over the seed. Plant inoculated seed within 5 hours of application.

Do not use EasyRhiz in hot dry conditions or plant treated seed into dry soil.

Shelf Life and Storage

EasyRhiz Legume Inoculant has a minimum shelf life of 2 years when stored at 4°C to 10°C. It will survive short periods at 30°C. Keep out of direct sunlight. EasyRhiz Protector does not require refrigeration for long term storage.

Product of Australia

EasyRhiz

Soluble Legume Inoculant

- ◆ Easy to apply - water soluble
- ◆ Easy to mix - stays in suspension
- ◆ Available for all grain legumes
- ◆ Long shelf life
- ◆ Little storage space
- ◆ ALIRU (NSW-DPI) tested



“Get the **Nitrogen** gain without the **Peat** pain.”

Delivering high numbers of live rhizobia to legume seed prior to planting is always a challenge for farmers.

Traditional peat-based rhizobia carriers can be difficult to mix over seed, fall out of suspension in water and tend to block fine spray nozzles.

Now there is **EasyRhiz!**

EasyRhiz is a new formulation of legume inoculant that is convenient to transport, mixes with water, stays in suspension and passes through the finest spray nozzles.

EasyRhiz can be applied to seed prior to planting or sprayed onto seed as it passes out the combine or air-seeder sowing tyne (liquid inject).

Nitrogen Fixation

Legumes in association with *rhizobium* bacteria convert atmospheric nitrogen into soluble nitrogen for the plant. Legumes can vastly improve the soil nitrogen levels (estimates range from 30-200 kg N/ha/year: equivalent to 64 to 432 kg of urea).

Legumes fix nitrogen from the air by forming a symbiotic relationship with *rhizobium* bacteria. The bacteria infect the plant root system to form root nodules.

Each legume crop requires a specific strain of rhizobia to form nodules and fix nitrogen. The best strain for each legume has been selected by the NSW-DPI and CSIRO.

New Edge Microbials use only the most productive NSW-DPI approved strains. *Slattery & Pearce (ACIAR Proceedings 109c, 2002)* demonstrated that these strains significantly improve crop yield even when background soil populations of wild rhizobia were present.



Nitrogen fixing Nodules on Lupin plant ▶

When it comes to rhizobium bacteria, it's a the numbers game.

Rhizobium bacteria are introduced to the crop by inoculating the legume seed prior to sowing. The more rhizobia alive at germination around the seed, the greater the nodulation, and the greater the potential yield. (*Roughley et al. 1993*).

Rhizobium No. on seed	Nodule mass mg/plant	Dry matter kg/ha	Grain yield kg/ha
Day 1	Day 43	Day 197	Day 226
1,862,087	393	9037	2088
186,209	222	8673	1802
18,621	65	7759	1899
1,862	12	7184	1648
186	5	4754	1349
19	4	4774	1126
2	4	4663	1085

Sowing rate was 100kg/ha of Unicrop Lupins in 4 replicated randomized blocks. Trifluralin 1litre/ha & Double super 100kg/ha. Soil had no history of lupin. *Roughley et al 1993 Soil Biol. Biochem 25: 1453-1458*.



The Easy**Rhiz** Solution.

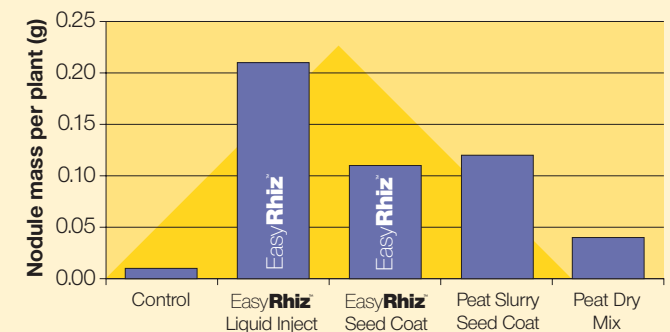
The most effective way to deliver more live rhizobia bacteria is to mix the inoculant in water and apply this water around the seed at planting.

This can now be easily achieved by the introduction of **EasyRhiz** soluble legume inoculant.

EasyRhiz is a water soluble culture enclosed in a glass vial under vacuum. The concentrated freeze dried culture will dissolve in water and contains no particulate matter allowing the product to pass through fine mesh screens.

Easy**Rhiz** Field Trials

Douglas et al (2005) reported on the effectiveness of different methods of application of Chickpea inoculant on nodulation. Liquid injection of live rhizobia around the seed at planting was far more effective than coating the seed prior to planting.



Above The nodule mass per plant at flowering caused by different methods of delivering *Rhizobium* to Chickpea seed at planting. *Douglas et. al Qld DPI 2005*

Easy**Rhiz** makes legume inoculation easy!