Pasture Genetics is committed to research, select, market and distribute the most innovative and productive forage seed technology for a sustainable world.

It is the largest fully independent and Australian owned forage seed company, and it grew to this position in less than two decades. Pasture Genetics is the result of the merger of seed sales, marketing and logistical distribution company Seed Distributors Pty Ltd, founded in 1997, and its sister science-based intellectual property and product development company Pasture Genetics Pty Ltd, established in 1999.

It strives to produce the finest quality, technologically driven, modern forage seed products that surpass industry standards and reflect the highest degree of excellence in agriculture, creating prosperity and opportunity to providers and producers globally.

Pasture Genetics exports its premium pasture seed to over 30 countries: from Canada in North America to Brazil and Argentina in South America; France, Italy, Portugal and Turkey in Europe; throughout Africa including Morocco and South Africa; Saudi Arabia in the Middle East; and Japan and Korea in Asia.

Pasture Genetics is a family-founded and operated company built on Australian innovation, leadership and bold future thinking.

Pasture Genetics products are suited to a range of farming enterprises and practices, including:

- Small to medium cattle farming
- Large corporate beef cattle enterprise
- Sheep and dairy farming
- Silage, hay, and chaff production
- Turf production and supply
- Viticulture and horticultural operations and
- Equine facilities
In Australian viticulture and horticulture the importance of cover crops and interrow management cannot be over emphasised.

Cover crops help increase organic matter and nutrient content in soils, build soil structure, suppress weeds, increase soil aeration and water infiltration.

This guide is for farmers wanting to increase their production and the quality of that production, whilst improving their soil health and structure for the long term.

Following a step by step management approach through the 9 Best Management Practices for Cover Crops, see page 6, will lead to great success with annual, self regenerating and permanent cover crops in the viticultural and horticultural industries.

This guide also covers the agronomy and management of species, cultivars and SOWsmart® Blends utilised for cover crops and break crops specific to Australian viticulture and horticulture.
At Pasture Genetics we are so confident in our seed genetics and the quality of our proprietary products, we will replace seed at half the original purchase price if it fails to establish satisfactorily.

Unfortunately establishment failures can occur, so Pasture Genetics’ Establishment Guarantee™ programme* is available for the vital 30 day period after planting, and provides growers with substantial savings should they need to replant their paddocks.

Pasture Genetics is the only forage company in Australia to offer Establishment Guarantee™. Plant with peace of mind and the support of Pasture Genetics.

Register at pasturegenetics.com within 30 days of planting to participate in the programme.

* Terms and Conditions apply.
Current industry constraints with viticulture and horticulture

- Poor soil structure
- Poor soil fertility – not being able to maintain nutrients in the root zone
- Lack of financial return due to nutrient loss through soil leaching
- Lower water use efficiency
- Decreased water infiltration
- Soil organic carbon levels are very low
- Soil erosion due to excessive soil conditioning
- Limited access to interrows, especially over the winter period
- Increased compaction leading to hard pan soils
- Poor water use efficiency contributing to water and soil salinity
- Weed populations hosting and increasing problem pests
- Crop growth reduction due to incidence of nematodes
- Increased temperatures in the vine canopy

Benefits of permanent grass swards between rows

- Reduces weed populations, therefore financial savings on chemical inputs
- Removal of flowering weeds such as Capeweed, will increase beneficial pollination of fruit and vines from bee activity. This needs to be used in conjunction with the SOWsmart® All Grass Row Blend that does not contain flowering legumes
- Improved water penetration reduce run off and surface pooling
- Soil compaction is reduced due to permanent sward
- Grass based swards are able to be mown at a lower height. This reduces crop cover for hosting vermin such as mice, rabbits and snakes
- Increased access to orchard or vineyards all year round by foot or machinery
- Long term soil conditioning by increasing organic matter in soil structure
- Aids in reducing soil erosion caused by wind and rain
- Grass swards are able to help to reduce excess nitrogen issues from previous crops. This will help to control unwanted vine growth late in the season
- Stable ground cover helps to alleviate soil temperature spikes over the summer period

Poor soil control leads to lower potential soil conditioning benefits, hosting problem pests and reducing on farm returns.

Poor soil cover leads to increasing soil temperatures over the summer period.

Permanent grass sward mown short to give weed control and stable ground cover.
Benefits of intensive interrow and break crops

- Increase the organic matter in soil to help improve structure
- Improve water infiltration from natural rainfall and irrigation
- Reduces water run-off and erosion during irrigation and storms; therefore greater water use efficiency
- Help build soil cation exchange capacity
- Increased retention of nutrients otherwise lost to leaching, especially in sandy soil types
- Interrow crops help with soil compaction by root aeration. This therefore reduces poor root growth from major fruit or vegetable crops
- Improved foot and vehicle access to rows at all times; increases ability to spray crops, e.g. Downy mildew during wet periods
- Limits the germination and production of weeds (e.g. Wireweed, Caltrop, Innocent Weed, Capeweed, Oxalis, Fat Hen, etc.), this will lead to financial on farm savings, by lowering the use of in crop herbicides and machinery
- Interrow and cover crops will help to reduce issues with dust, therefore improving workplace safety and conditions
- Reduced soil conditioning using rotary hoe or similar to control weeds, this allows increased soil moisture holding capacity, rather than moisture being lost due to evaporation. Lowering reflected radiation from bare soil over the summer period, will also reduce the damage to fruit and vine crops via sunburn
- Substantial savings on machinery and fuel costs can be made by reducing the need to cultivate on a regular basis
- Cover crops can significantly reduce soil moisture loss, by reducing the ground temperature by up to 5 degrees Celsius during daylight hours
- Increased organic matter levels lead to greater worm interaction and increasing microbial populations
- The use of Forage Sorghums for wind breaks will protect young vines and tree crops from wind blast damage

Root systems breaking down help to increase soil organic matter. Incorporating the residue of the crop will help with this process.

Building organic matter allows soil to hold nutrients in usable plant root zone for crops.

Smart Radish used as a soil conditioning tool to break open hard pan soils.

Interrow crops allow for improved conditions for spraying equipment.
Key questions to target the correct product for your operation

1. What level of moisture do you have for your new sowing?
   - Irrigation/overhead sprinklers/flood
   - Dryland 500mm +
   - Dryland 200mm +

2. What lifespan do you require from your rotation?
   - Annual (1 year)
   - Annual with opportunity to seed down and regenerate the following season (2-4 years)
   - Permanent (4 years +)

These key questions dictate the selection of pasture species or blend to be utilised in the paddock.

Your options

OPTION 1
To sow down each year for maximum bulk and nitrogen fixation plant SOWsmart® Green Manure Row Blend or the new WINS Row Blend. (Weed control, Interrow, Nitrogen fixation, Soil conditioning)

OPTION 2
To sow down once with the ability for it to reseed each year - Use SOWsmart® Regen Row Blend (annual grass and hard seeded early pasture legumes), that will offer ground cover and regenerate each year

OPTION 3
Permanent blend that has the ability to offer ground cover all year round – dependent on moisture – This will be Fescue, Cocksfoot and Perennial Ryegrass blends that have legumes in them.

Bounty forage sorghum used as windbreak to protect young establishing almond trees.
The 9 best management practices for cover crops

1. SOIL TEST - STARTING POINT

- We recommend you obtain a complete soil test before you start on any new improvement programme, as your soils are the key to your success. Please see your local agronomist or rural supply outlet about a soil test. This will provide you and your agronomist a benchmark to work from and fine tune a programme suited to your property’s needs.

2. HERBICIDE CARRY OVER

- Please be mindful if you are going into an improvement programme in the future as some herbicides have a very long plant back period of over 9 months, but this can be up to 18 months on some paddocks. This includes Simazine at least 9 months and Glean is 18 months.

3. WEED CONTROL

- Weed control is an important element in establishing cover crop options. You want to reduce the weed burden as much as possible up front to help with good plant establishment.

- A knockdown spray (e.g. glyphosate) will be required prior to sowing as this will help to reduce large numbers of the weed population early. Remember that in most fruit and vine based crops the ability to use in-crop herbicides such as hormone based products will be severely reduced.

- Please consult with your agronomist regarding crop safety solution to reduce damage to fruit and vine crops.

4. SEED QUALITY

- Always purchase high quality seed from a known seed company such as Pasture Genetics from your local rural supplier or grain merchant. Many crops have failed due to the owner using poor quality, low germination seed. For maximum establishment, it is recommended you have your seed protected with XLR8™ treatment, see page 12, which provides faster growth and protection from insect damage in the germination phase of your blends.

5. SEED BED PREPARATION

- The seed bed should be an even surface, this will allow for an accurate seed placement with good seed to soil contact.

- Minimum soil disturbance is desirable, as this will retain soil moisture and reduce secondary weed germination.
6. SOWING TECHNIQUES

- Direct drilling is the preferred method where possible, depending on soil type
- For both direct drilling and conventional sowing, ensure both seed and fertiliser are sown together and seed closer to the surface (around 0.5cm)

<table>
<thead>
<tr>
<th>Seed size</th>
<th>Species</th>
<th>Desired seeding depth (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Forage brassicas, clovers, medicas and pasture grasses</td>
<td>5 - 10mm</td>
</tr>
<tr>
<td>Medium</td>
<td>Vetch</td>
<td>15 - 20mm</td>
</tr>
<tr>
<td>Large</td>
<td>Forage barley, oats, wheat, triticale, beans and peas</td>
<td>20 - 35mm</td>
</tr>
</tbody>
</table>

- Incorporate seed that has been sown via broadcast, lightly with harrows, weldmesh or rolled to provide good seed to soil contact
- The investment that you make in your seed products can be lost by simple planter calibration for seeding depth and sowing rates. We recommend calibrating your planter before sowing to give you the best results for your enterprise

7. SEEDING AND FERTILISER RATES

**Suggested Covercrop/Interrow Sowing and Fertiliser Rates**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Fertiliser</th>
<th>Seed (kg/ha)</th>
<th>Fertiliser (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL GRASS ROW LR</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>35 - 40</td>
<td>80 - 150</td>
</tr>
<tr>
<td>ALL GRASS ROW HR</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>40 - 50</td>
<td>80 - 150</td>
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<tr>
<td>CEREALS</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>60 - 120</td>
<td>80 - 150</td>
</tr>
<tr>
<td>DRYLAND MEDIC ROW</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>35 - 40</td>
<td>80 - 150</td>
</tr>
<tr>
<td>DRYLAND SUB CLOVER ROW</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>35 - 40</td>
<td>80 - 150</td>
</tr>
<tr>
<td>FABA BEAN</td>
<td>Super Phosphate 0:9:0:11</td>
<td>120</td>
<td>150 - 200</td>
</tr>
<tr>
<td>FORAGE PEAS</td>
<td>Super Phosphate 0:9:0:11</td>
<td>100</td>
<td>150 - 200</td>
</tr>
<tr>
<td>GREEN MANURE ROW BLEND</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>140 - 160</td>
<td>80 - 150</td>
</tr>
<tr>
<td>IRRIGATED ROW BLEND</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>40 - 50</td>
<td>80 - 150</td>
</tr>
<tr>
<td>MEDICS</td>
<td>Super Phosphate 0:9:0:11</td>
<td>10 - 12</td>
<td>150 - 200</td>
</tr>
<tr>
<td>NEW MULTI SPECIES SOIL BUILDER</td>
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<tr>
<td>NEMCON BIOFUMIGATION</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>10 - 20</td>
<td>100 - 200</td>
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<tr>
<td>NEW POLLINATOR</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>40 - 60</td>
<td>80 - 150</td>
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<tr>
<td>REGEN ROW</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>35 - 40</td>
<td>80 - 150</td>
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<tr>
<td>NEW SMART RADISH</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>5 - 8</td>
<td>80 - 150</td>
</tr>
<tr>
<td>WINS ROW BLEND</td>
<td>Di-ammonium Phosphate (DAP) 18:20:0:1.5</td>
<td>80 - 160</td>
<td>80 - 150</td>
</tr>
</tbody>
</table>
7. SEEDING AND FERTILISER RATES (CONTINUED)

- Legume cover crops do not require nitrogen based fertilisers. They will nodulate and supply their own nitrogen source.
- For maximum nitrogen development it is recommended that legume seed be inoculated.
- Cereal crops and blends will require a nutrition package that incorporates all the major nutrients, a current soil test will provide a clearer picture on any major or minor nutrient deficiencies that can be targeted with an upfront fertiliser package. Additional fertiliser applications in spring will help to increase overall biomass for soil conditioning benefits.

* Please note fertiliser rates are approximate only as actual rates may vary in some areas due to soil types, crops, personal preference and other factors. It is best practice to get a soil test done prior to fertiliser application.

8. INSECT CONTROL

- The use of the XLR8™ Seed Treatment will protect your germinating cover crops from insect damage for up to 4 weeks, see page 12.
- We recommend the use of Chlorpyrifos insecticide; it can be applied to the soil in furrows at planting or spread over the soil surface after seeding.
- Monitor your newly establishing crops for insects. Pasture legumes and brassicas are very susceptible to insect pests at emergence. If Red Legged Earth Mite or Blue Oat Mite are present, an application of insecticide to control them is warranted.
- It is recommended you carry out a paddock inspection for insect damage on a regular basis. If you are unsure of what to look for or do, please contact your local agronomist.

9. MOWING/SLASHING

- It is recommended to mow any of the SOWsmart® range of grass blends, as soon as young plants are not easily pulled out of the ground by hand (e.g. approx. 125mm/5 inches in height), down to approximately 60-75mm (2-3 inches). This will encourage grass tillering and prevents the smothering of companion pasture legumes – clovers and medics.
- Slashing of cereal based blends will allow the control of early weeds, and promote plant tillering.
- When utilizing Smart Radish and Nemcon Biofumigation we recommend these products to be sprayed, slashed or incorporated on first flower. This will reduce seed set and regeneration in the following season.
SOWSmart® blend improves soil quality and weed control for premium wine maker

At premium Barossa Valley winery Torbreck, soil health is a key priority for Vineyard Manager, Nigel Blieschke.

When the winery’s soils started becoming old, over-worked and degrading in quality, Nigel harnessed his background and expertise in soil health to manage Torbreck’s vineyards with a “soil-up approach.”

“For many years we relied upon the natural fertility of our soils, without replacing anything that was removed,” Nigel said.

“These really old, over-worked soils were becoming degraded and we needed to take care of them.”

Since 2005, Nigel had added nitrogen and lifted organic content by using the SOWSmart® blend on his own vineyard at home. Climactically, there had been a range of seasons ranging from wet and cold to hot and dry.

“On my property at home, I managed to add nitrogen back into the soil, as well as lift the organic content to around 2.2 per cent from a starting point of 1.2 per cent,” he said.

“One thing I noticed was that irrespective of the season, we maintained consistent yields through dry seasons and reduced yield fluctuations since ceasing cultivation and adopting a mid-row culture.

“I wanted to replicate this performance at Torbreck.”

Last season at Torbreck Wines, Nigel implemented a blend to reduce irrigation requirements, amend soil nutrients, improve infiltration, reduce leaching and improve soil structure.

“We sowed a Tetrone Ryegrass based pasture that had Cavalier Spineless Burr Medic, Cobra Balansa Clover, Zulumax Arrowleaf Clover, SARDI Persian Clover and Dalsa Sub Clover.

“The idea was that something would take considering the varying soil type of the different blocks – and we’re pleased to report that the blend took off really well.

“There was a thick mat of Cavalier, Tetrone, Cobra and Zulumax.

“Having this blend is good for our diversity. It aids the soil, but also reduces the level of evaporation and radiated heat,” said Nigel.

With soils ranging in texture and nutrient concentration, Nigel said the SOWSmart® blend handled the different soil types very effectively.

“The SOWSmart® blend handled the different soil type really well, with each individual variety finding its prime.”

A by-product of improving soil quality was weed control from mid-row adoption.

“The regenerating pasture we now have is thick and competitive, and the weed population is near absent because the pasture has out competed everything.

“It has significantly saved our diesel costs by not having to spray regularly or cultivate.”

The approach taken at Torbreck Wines was not a quick fix, but a long-term approach to improve soil and grape quality.

“I’m more than happy with our SOWSmart® blend,” Nigel said. “We will continue to use it into the future with our long-term approach.”
Ready-to-sow proven blends.

SOWsmart® is Pasture Genetics’ ready-to-sow proven blend range. It is the product of ongoing research and development.

SOWsmart® aims to provide agronomically accurate blends of high-production seed, based within environmental and managerial constraints.

Pasture Genetics also offers custom blending for individual farmers or regions.

Green Manure Row

**Blend**  
Viticulture and Horticulture  
Min rainfall (mm)  400  
Seeding Rate  140–160 kg/ha

50% Outback Forage Oats  
20% Dunn Forage Peas  
20% Faba Beans  
10% Timok Forage Vetch

- This blend of highly productive annual species results in a green manure crop that produces maximum herbage biomass production.
- This adaptable blend should be incorporated into the soil prior to budburst in late winter or early spring.
- Improve soil nutrient status and physical properties, as well as management conditions while reducing your chemical input.

WINS Row

**Blend**  
Viticulture and Horticulture  
Min rainfall (mm)  350  
Seeding Rate  80–160 kg/ha

80% Moby Forage Barley  
17% Timok Forage Vetch  
3% Smart Radish

- WINS is an acronym for Weed control, Interrow, Nitrogen and Soil conditioning. Specifically for lower rainfall areas, the SOWsmart® WINS Row Blend provides fast forage production early in the season.
- The blend produces copious amounts of dry matter and aids in weed suppression.
- It also provides organic matter back into the soil.
- Excluded from Pasture Genetics’ Establishment Guarantee Programme.

Multi Species Soil Builder

**Blend**  
Viticulture and Horticulture  
Min rainfall (mm)  450  
Seeding Rate  50–65 kg/ha

50% Winteroo Oats  
20% Presto Vetch  
10% Tetrone Tetraploid Annual Italian Ryegrass  
4% Smart Radish  
4% Subzero Hybrid Forage Brassica  
4% White Cloud Crimson Clover  
4% White Quinoa  
2% Compass Chicory  
2% Ranger Plantain

- A blend that has been designed to repair and build soil organic matter.
- A great combination of high dry matter varieties and deep rooted species.

Pollinator

**Blend**  
Viticulture and Horticulture  
Min rainfall (mm)  350  
Seeding Rate  40–60 kg/ha

50% Presto Purple Vetch  
12.5% Bee-Ready Brassica  
12.5% Smart Radish  
12.5% Sumarai White Mustard  
12.5% White Cloud Crimson Clover

- Comprised meticulously of flowering varieties, the SOWsmart® Pollinator Blend is designed to stimulate bee activity.
- Its combination of flowering species exhibits, white, yellow and purple flowers boasting high nectar and pollen levels.
- Designed for pollination dependant enterprises.
- Utilised in midrow or exclusion areas for almonds, avocados, macadamias etc.
**Irrigated Row**

**Blend**
- **Viticulture and Horticulture**
- Min rainfall (mm) 700

**Seeding Rate** 40–50 kg/ha

- 60% Shootout Perennial Ryegrass
- 20% Convoy Continental Cocksfoot
- 15% Reisling White Clover
- 5% Palestine Strawberry Clover

- A combination of summer and winter active cultivars, this formulation of perennial grasses and clovers will be sure to produce a dense, green, permanent ground cover all year round with a prostrate growth habit to reduce mowing requirements.

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**All Grass Row HR**

**Blend**
- **Viticulture and Horticulture**
- Min rainfall (mm) 550

**Seeding Rate** 40–50 kg/ha

- 50% Drylander Diplod Perennial Ryegrass
- 30% Origin Winter Active Tall Fescue
- 20% Convoy Continental Cocksfoot

- This pest and disease resistant blend shows vigour and persistence to compete with the intense weed pressure associated with higher rainfall or irrigated environments.
- Another advantage is the broad spectrum of herbicides that can be applied over this dense ground cover.

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**All Grass Row LR**

**Blend**
- **Viticulture and Horticulture**
- Min rainfall (mm) 500

**Seeding Rate** 35–40 kg/ha

- 40% Wimmera Annual Ryegrass
- 40% Drylander Diplod Perennial Ryegrass
- 20% Currie Cocksfoot

- This blend negates issues of nematodes, Light Brown Apple Moth and excess nitrogen levels, providing a dense, weed-competitive ground cover.
- Only the most resilient annual and perennial grass varieties have been selected to achieve longevity.

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**Dryland Sub Clover Row**

**Blend**
- **Viticulture and Horticulture**
- Min rainfall (mm) 550

**Seeding Rate** 35–40 kg/ha

- 50% Drylander Diplod Perennial Ryegrass
- 20% Convoy Continental Cocksfoot
- 10% Cobra Balansa Clover
- 10% Clare 2 Sub Clover
- 10% Dalsa Sub Clover

- Specifically for dryer areas of neutral to acidic soils, this blend utilises some of the most resilient and productive varieties of grasses and clovers.
- This perennial blend performs in tough growing conditions, providing dense ground cover that assists in maintaining a weed-free row.

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**Dryland Medic Row**

**Blend**
- **Viticulture and Horticulture**
- Min rainfall (mm) 550

**Seeding Rate** 35–40 kg/ha

- 60% Drylander Diplod Perennial Ryegrass
- 20% Convoy Continental Cocksfoot
- 10% SARDI Rose Clover
- 10% Silver Snail Medic

- In neutral to high pH soils, this blend of perennial grasses and medics thrives producing solid ground cover.
- These cultivars provide vigour and persistence in a horticultural or viticultural application.

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**Regen Row**

**Blend**
- **Viticulture and Horticulture**
- Min rainfall (mm) 400

**Seeding Rate** 35–40 kg/ha

- 70% Wimmera Annual Ryegrass
- 10% Cavalier Spineless Burr Medic
- 10% Cobra Balansa Clover
- 10% Jaguar Strand Medic

- All components of this blend are capable of self-seeding and regenerating season to season.
- It is an excellent option for marginal rainfall zones that struggle to maintain perennial grasses like tall fescue and perennial ryegrasses.
- It is critical that you allow the plants to reach full maturity to utilise its regeneration trait.
At Pasture Genetics we are always looking to new technology – constantly striving to improve our offering – bringing the latest technology, with even better performance to our leading forage products.

**Goldstrike®**

Pasture Genetics Goldstrike® includes rhizobia inoculation, micronutrient package and Apron® XL fungicide (where available on label). Goldstrike® is comprised of the highest quality seed and coating technology and is the best establishment package for pasture legumes.

**Goldstrike LongLife®**

Goldstrike LongLife® offers extended rhizobia storage life on a range of species. Goldstrike LongLife® can provide up to six months storage life on medic and sub clover, and up to 12 months storage life on lucerne.

**XLR8™**

XLR8™ treatment is a film coat application of Poncho® Plus insecticide.

Poncho® Plus is a significant advancement in the seed treatment market. It is an innovative insecticidal seed treatment that has registration across a range of pasture species and forage crops. Poncho® Plus combines two robust compounds, imidacloprid and clothianidin, which increase the insect control spectrum above other seed treatment options. Poncho® Plus provides protection during establishment against a range of pests including Redlegged Earth Mite, Cutworm and Lucerne Flea. Poncho® Plus also offers added establishment vigour in the early growth stage of the plant.

The benefits from our XLR8™ seed treatment not only comes in the form of insect protection, but also shows long term benefit in assisting early seedling plant growth. This is demonstrated with greater root system development in seedlings, leading to higher overall pasture establishment and long-term pasture production.

Our XLR8™ seed treatment comes standard on all brassicas, herbs, and our premium proprietary lucerne varieties. Our XLR8™ seed treatment can be applied upon request to all seed products where registration is applicable.

<table>
<thead>
<tr>
<th>Poncho® Plus Comparison Chart</th>
<th>SEED TREATMENT</th>
<th>BARE SEED &amp; FOLIAR SPRAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldstrike®</td>
<td>Micro Nutrient</td>
<td>Rhizobia Inoculation</td>
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<tr>
<td>Goldstrike LongLife®</td>
<td></td>
<td>Apron® XL Fungicide*</td>
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<tr>
<td>Goldstrike LongLife® XLR8™</td>
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<td>LongLife tested**</td>
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<td>Goldstrike XLR8®</td>
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<td>Poncho® Plus Insecticide</td>
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<td>XLR8™</td>
<td></td>
<td>Gaucho® Insecticide</td>
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<tr>
<td>Poncho® Plus</td>
<td></td>
<td>Film coat only</td>
</tr>
<tr>
<td><strong>Registered Claims Benefits</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Moby

Forage Barley
Hordeum vulgare

Range          XtraLeaf®
Maturity       Early
Min Rainfall (mm)  350

Seeding Rate kg/ha
Dryland        30-50
High Rainfall/Irrigation  50-80

- Moby Forage Barley is an early maturing, six-row, white seeded awnless barley; with rapid establishment and excellent winter growth. Leaf size is more comparable with oat varieties than traditional barley types.
- Moby Forage Barley offers an extended sowing window, with the ability to be sown from late April, through to July. Moby Forage Barley will offer multiple grazing opportunities until the development of the first node.
- Disease resistance appears typical of other commercial barley cultivars, with good net blotch resistance, adequate field leaf scald and spot blotch resistance.
- Very fast establishing variety.
- Exhibits good cold tolerance.
- Excellent winter growth.
- Slightly earlier than Dictator.
## Outback

**Forage Oats**  
*Avena sativa*

- Range: XtraLeaf™  
- Maturity: Mid-Late  
- Min Rainfall (mm): 400

### Seeding Rate kg/ha

<table>
<thead>
<tr>
<th>Type</th>
<th>Rate</th>
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</thead>
<tbody>
<tr>
<td>Dryland</td>
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</tr>
<tr>
<td>High Rainfall/Irrigation</td>
<td>50-80</td>
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</tbody>
</table>

### Seed Treatment

- **Gaucho®**

- Outback Forage Oats provide higher yields of quality grazing throughout the critical autumn, winter, and early spring periods. Outback Forage Oats come Gaucho® treated. This protection aids in the early control of Aphid feeding damage and assists with management of Barley Yellow Dwarf. Early seedling growth responses from Gaucho® also allows for fast establishment.

- Outback Forage Oats are an excellent early plant option throughout many areas where late autumn and early winter feed is critical.

- Medium height, erect, specialist hay and grazing oat.

- Dark green broad leaves.

- Excellent seedling vigour results in rapid plant establishment.

Outback Forage Oats are a major backbone of the SOWsmart® Green Manure Row Blend. It offers high yields and length of season.

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Outback Forage Oats – large leaf trait for high biomass production.

The use of Outback Forage Oats in horticultural areas as a break crop has tremendous benefit with weed control and soil conditioning.

Territory Manager discussing the benefits of the SOWsmart® Green Manure Row Blend.
Presto Vetch has been trialled in Northern Victoria, with results displaying early maturity and high suitability for use as a break crop.

Presto Vetch showing good early vigour in an interrow blend situation, getting up and out of the ground faster than alternative vetches.

As Presto Vetch nodulates, it fixes high levels of nitrogen to the soil. Also showing great root depth.

Presto Vetch features in the SOWsmart® Pollinator Blend designed to stimulate bee activity.

**Presto**

**Vetch**

*Vicia benghalensis*

- Range: XtraLeaftm
- Maturity: 95-105 days
- Min Rainfall (mm): 300
- Flower Colour: Purple
- Hard Seed Level: Low

<table>
<thead>
<tr>
<th>Seeding Rate</th>
<th>kg/ha</th>
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<tbody>
<tr>
<td>Cereal Mixes</td>
<td>10-25</td>
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<tr>
<td>Dryland</td>
<td>30-45</td>
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<tr>
<td>Pasture Mixes</td>
<td>15-35</td>
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- An ideal vetch variety for low rainfall areas.
- Produces excellent dry matter even when sown late.
- Good cold and frost tolerance.
- Low levels of hard seed.
- Good resistance to Rust and Chocolate Spot (Botrytis) but is susceptible to Ascochyta (Phama raidei) and Downy Mildew (Peronospora viciae).
- Nearly a month earlier than Popany.
A densely tillered ryegrass will out compete many broadleaf weeds and offer excellent ground cover to reduce sunburn to crops over summer.

Drylander Diploid Perennial Ryegrass is the backbone of the SOWsmart® All Grass Row HR Blend. It will provide a dense sward to offer cooler soil temperatures over the summer period and dust control.

Drylander Diploid Perennial Ryegrass has been utilised in many of the SOWsmart® Blends with annual pasture legumes, to offer full season cover in good rainfall zones.

SOWsmart® All Grass Row HR Blend consists of Drylander Diploid Perennial Ryegrass, Origin Winter Active Tall Fescue and Convoy Continental Cocksfoot. This enables selective broadleaf herbicides to be used in-crop.

Drylander Diploid Perennial Ryegrass

*Diploid Perennial Ryegrass*

*Lolium perenne*

**Heading Date**  -7 days

**Life Span**  7-10 yrs

**Min Rainfall (mm)**  550

**Maturity**  Early

**Seeding Rate**  kg/ha

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<tr>
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<th>Dryland</th>
<th>High Rainfall/Irrigation</th>
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<td>8-14</td>
<td>20-25</td>
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- High winter activity/summer dormant.
- A leafy and well tillered derivative of Victorian Perennial Ryegrass germplasm.
- Drylander Diploid Perennial Ryegrass responds quickly to autumn rain, is frost tolerant and with its excellent early cool season growth, provides good winter feed.
- Suitable for fringe areas of perennial ryegrass usage.
- Extremely vigorous winter and early spring production.
- Maintains a high level of persistence in pastures.
- Drylander Diploid Perennial Ryegrass seed is produced and harvested only from dryland production seed crops to maintain its dryland survivability integrity.
Deep rooted perennial grasses like tall fescue, have the ability to send roots down in excess of a metre. This gives the plant extreme summer toughness when moisture is limiting. In many interrow situations this robust nature allows for good ground cover over the entire year. This helps to maintain firm soil for foot and machine traffic, rather than interrows that can pug or be damaged by tractors.

Origin Winter Active Tall Fescue and Hatrik Sub Clover in acid soils, Hunter Valley NSW.

Stand alone Origin Winter Active Tall Fescue used as long term grass based interrow.

Vineyard row blend Origin Winter Active Tall Fescue and Cavalier Spineless Burr Medic at Nuriootpa SA.
Nemcon Biofumigation Brassica

*N. napus*

Lifespan (months) <9
Min Rainfall (mm) 350

Seeding Rate kg/ha
Dryland 10-15
High Rainfall/Irrigation 25

• Nemcon (Brassica napus) is a naturally occurring tetraploid cross of two other common brassica species (Brassica oleracea (Kale/ Cabbage species) and Brassica rapa (Turnip). As part of their natural make-up, the plant tissue of the Brassica family contain high levels of a chemical called glucosinolates (GL's). This is the chemical which gives mustard its hot tangy taste.

• The use of these naturally occurring chemical compounds for the control of soil borne pests and diseases is called biofumigation.

• An annual resown cover crop which comprises a specific cultivar of Brassica napus selected for its glucosolinate profile/ concentration and its potential biofumigation benefit.

• Nemcon targets root knot nematode (Meloidogyne spp.) and root lesion nematode.

• Biofumigation is conducted by isothiocyanates (ITC's), a result of the breakdown of the GLs. The enzyme myrosinase is a key part of this breakdown process. Nemcon targets root knot nematode (Meloidogyne spp.) and root lesion nematode. Both are microscopic, soil dwelling, worm like organisms that feed on roots, causing small lumps or galls (Meloidogyne spp) or the rotting of feeder roots (Pratylenchus spp). Infected plants gradually decline in vigour, particularly on sandy and sandy loam soils, and are sensitive to stress. The nematodes may be present in the soil at planting time or may be introduced with soil on implements, in dust, in seepage, or in run-off water from contaminated areas. They can also be present on roots of other introduced plants. Nematodes complete their life cycle (eggs to larvae to adults) in the soil and/or in the roots of plants. They can infect a wide range of fruit trees, vegetables, crops and pasture species. For an effective control of these organisms the key is to maximise GL production then create an environment for an efficient conversion to ITC's.

• Sowing of Nemcon is critical given the small seed size (295,000 /kg). If sown below 1cm, germination will be compromised. This product should be sown into a well prepared seedbed. Sowing rates for broad acre applications should be 20 kg/ha. If the product is used for interrows the sowing rate can be reduced to 10 kg/ha.

• It is important to keep sowing rates at these levels to ensure, effective competition against weeds, maximum biomass production and finally to ensure each individual plant produces thin stems to aid incorporation.

• Nemcon is very responsive to Nitrogen and Sulphur. These two elements along with Carbon and Hydrogen are essential in the formation of both GL's and ITC's. As in all situations a soil test should be conducted to ensure adequate soil nutrient levels. A standard recommendation of fertiliser can include up to 100 kg/ha of Nitrogen split over several applications.

• A standard recommendation would include approximately 60 kg/ha of DAP and 60 kg/ha of SOA broad cast and incorporated within 1 week prior to sowing. Nemcon will be responsive to extra applications of fertiliser particularly at the bolting stage, post emergence.

• The final stage of the process is incorporation. This should be done when the crop is approaching flowering. This will ensure maximum yield but negate the potential of volunteer plants in following crops. As mentioned earlier myrosinase is the enzyme that aids the breakdown of GLs to ITC's. Myrosinase activity is greatly enhanced by mechanical damage to cells. Thus when incorporating Nemcon into the soil, rotary hoeing should be used in preference to cultivation. After incorporation immediate irrigation is required. Isothiocyanates are inherently a very volatile compound. The volatility is reduced by the irrigation and the moisture also aids in the speed of the breakdown process.

Nemcon Biofumigation Brassica at the 6 week stage after seeding. The crop is very vigorous early to give complete ground cover.

Vegetable crop rotation, targeting nematode control with Nemcon Biofumigation Brassica.

The increased use of Nemcon Biofumigation Brassica as a biofumigant crop, helps to deliver benefits to long term root structure such as vines and citrus trees.
The impressive bulb size of Smart Radish assists in breaking up the soil and allows water and air permeation.

Showing “pull-down” trait of Smart Radish – with the majority of the bulb below the surface.

As impressive as Smart Radish is below the ground, it's ability to produce great quantities of dry matter is notable.

- Can be grazed from six to eight weeks.
- Smart Radish will reach canopy closure a full month before oat and rye cover crop aiding in weed suppression and moisture retention for the duration of the season.
- Smart Radish has an aggressive root system that aids in busting open hard pan soil types that are common in interrows and broadacre paddocks.
- Smart Radish produces more root mass than mustard crops or oil seed radish and has two to four times the number of roots as cereal or grasses.
- Best practise to be grazed or sprayed out on first flower.
- Soft seeded type.

Smart Radish
*Raphanus sativus L*

<table>
<thead>
<tr>
<th>Hard Seed Level</th>
<th>7</th>
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<tbody>
<tr>
<td>Min Rainfall (mm)</td>
<td>350</td>
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Seeding Rate kg/ha

Dryland 5-8
The use of forage sorghum as break crops between vegetables has been a very popular practice. It allows for large volumes of biomass to be incorporated back into the soil over the summer period for soil conditioning.

Bounty Forage Sorghum
Sorghum bicolor x sudanese
Life Span 9 mths
Min Rainfall (mm) 500

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<tr>
<td>High Rainfall/Irrigation</td>
<td>25</td>
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</table>

• Early to mid maturing, Sorghum/Sudan grass hybrid.
• Good cool soil tolerance.
• Excellent early vigour with prolific tillering characteristics.
• Suitable for sheep and cattle grazing enterprises.
• Makes good quality silage and hay.
• Low prussic acid potential.
• Plant on 16 degrees Celcius and rising soil temperature.
• Offers a new package with improved cold tolerance, early vigour, and prolific tillering characteristics. Bounty Forage Sorghum is a good all round forage option for grazing, silage, or hay.
• During the breeding process, Bounty Forage Sorghum was selected for its accelerated time to first grazing.
• Aggressive tillering after grazing, results in an overall increase in dry matter production.
• Spring option only.

We recommend slashing Bounty Forage Sorghum once it reaches its initial 500mm in height.
This forces the new development of crown tillers, which in turn will make a bulkier larger wind break.

Over the winter period the crop will go dormant and brown off.
If required it can be mown down and will reshoot coming into the summer season again.
On many farms this excess forage can be disced into the soil to aid in soil conditioning.

Bounty Forage Sorghum reaches heights of 2 to 2.5m to help protect fruiting trees. In winter the plant goes dormant, but still retains its structure.