PGG Wrightson Seeds

Grass | Phalaris

Confederate

phalaris

performance bred®

Ultrastrike® film coat seed recommended

USES: BEEF | DAIRY | SHEEP | HAY | SILAGE

0.5-4kg/ha — SOWING RATE

500mm pa — RAINFALL / IRRIGATION

Confederate is the first phalaris bred by PGG Wrightson Seeds selected specifically for Australian producers

- Winter active with excellent dry matter production
- Semi-erect to erect growth habit with low summer dormancy
- Low levels of alkaloids implicated in the phalaris staggers syndrome
- Selected for disease resistance to maintain high quality feed
- Excellent companion with clovers to provide high quality pastures for dryland systems
- Can tolerate set stocking at certain times of the year, but performs best under a rotational grazing system

Description

Confederate phalaris has been bred in Australia by the Research & Development team of PGG Wrightson Seeds and is the first variety of phalaris to come from the PGG Wrightson Seeds dryland grass breeding program. Confederate phalaris has been trialled extensively at Ballarat (VIC), Lismore (VIC), Maryborough (VIC) and central to southern NSW alongside many of the commercially available phalaris varieties that many farmers have either utilised or have heard about. It has shown to be a solid performing winter active variety with excellent seasonal dry matter production, good persistence and the benefit of low tryptamine alkaloids – those associated with "phalaris staggers."

Confederate has been subjected to the variability and the harsh conditions of the Australian environment throughout the selection process and has come through as a variety that will offer real benefits to livestock producers looking for a new phalaris to form part of their perennial pasture base.

Confederate phalaris is better suited to 500mm+ rainfall zones and heavier soil types, with a similar growth habit to Sirosa and Holdfast. Confederate will perform best under rotational grazing management to ensure persistence and production in a typical phalaris based pasture system.

Image 1

The photo below shows the growth habit and broad leaf nature of Confederate (right) compared to Australian (left) which is a more summer active type phalaris. Confederate is not only expressing very different growth habits, but the value of being winter active so that feed is available when it is needed the most. This photo was taken on the 13th September 2014 and was of the 2012 Phalaris trial at Lismore, Victoria. This trial was sown on 8th May 2012.

Grazing management

Grazing management is important in the first year because if done correctly it will set up the newly sown phalaris plants for the long term. Special attention needs to be taken with grazing in the first year, the class of stock to graze with and the time period stock are allowed access to a first year paddock of phalaris. One of the things to avoid is grazing with heavy cattle if the ground is soft and wet. Ideally graze with sheep but if that is not possible use the lightest cattle on the property to avoid damage as this can cause long term setbacks. Once the Confederate is able to withstand pulling, grazing time should be short and the amount eaten doesn't need to be much. The aim of the first couple of grazings or "nip" is to put the seedling phalaris plants into a "short stressed phase" so that the plant puts extra effort into growth and development of the root system as well as increasing the number of tillers. By doing this, the phalaris plant will establish quicker, but more importantly will have greater ability to recover from grazing, handle drier conditions better and should ultimately persist for longer.

Like all plants and especially perennial species, the level of persistence and growth rates are correlated to the level of stored water soluble carbohydrates (WSC) in the root system. Adequate levels of WSC are needed for the plant to be able to recover from grazing and produce the first leaf. Once some leaf area is present, the plant then has the ability through photosynthesis to continue growing and start to replenish the WSC in the roots. If plants are continually grazed, commonly done when set stocked, the WSC levels are being continually used which results in the plant not being able to survive and therefore persistence is compromised. To achieve optimum levels of WSC being produced and stored, it is recommended to allow the phalaris plant to grow to four leaves on each tiller before introducing stock for grazing. The time required to achieve this can vary throughout the growing season, but it can be as long as 60-70 days in winter and as short as 20-30 days in spring.

Spring grazing management is an important time as this is when phalaris is at its peak growth rates, it has entered the reproductive cycle and as a result is trying to develop seed heads to complete its reproduction and it is also developing dormant buds at the base of each tiller. At this time it is important to avoid repeated or continuous heavy grazings or cutting, particularly with erect winter active types. Once the first node can be felt at the base of the stems through to seed head emergence, correct grazing management such as rotational grazing is important.

The development and management of dormant buds are important for the persistence of phalaris. Rotational grazing during the spring flush is a good compromise between feed utilisation and managing for persistence. If hay and or silage is more desirable, wait until seed heads are fully emerged before cutting the phalaris so that feed quality is still good, but the development of dormant buds is completed and therefore the persistence of the phalaris is not compromised.

Image 2

The photo below is showing the growth and quality of feed produced by Confederate (right) compared to Holdfast (left). This photo was taken on the 1st November and was of the 2012 phalaris trial at Leigh Creek, Victoria. This trial was sown on 20th May 2012.

Breeding

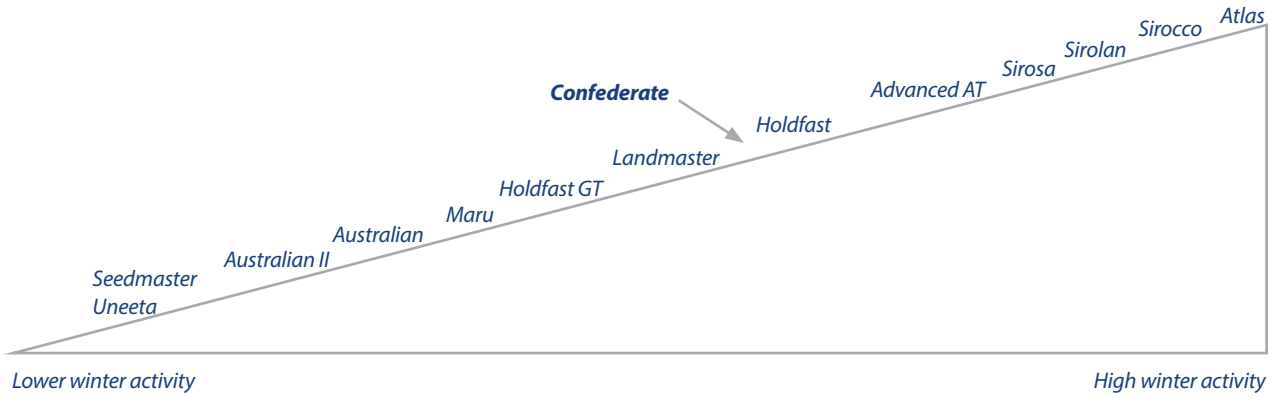
The breeding of Confederate phalaris has been achieved through the crossing of elite breeding lines with the aim of capturing key traits from each of those lines. The focus was to capture the best traits that would make Confederate a great phalaris for Australian farmers and as a replacement for the out-dated cultivar Maru. The selection criteria that was used included:

- Elite plants expressing high winter activity and semi-erect to erect growth habit
- Improved seedling vigour over the old cultivar Maru
- Solid seasonal dry matter yields, especially in autumn, winter and summer in favourable seasons
- Excellent disease resistance
- low alkaloid production (of the alkaloids known to cause phalaris staggers)
- Persistence in challenging conditions – low to medium rainfall regions
- Late-season spring and summer production in high rainfall environments or favourable seasons to lengthen the feed offering
- Seed retention

Image 3

The photo below is highlighting the late season yield and quality of Confederate (left) next to a similar winter active phalaris in Advance AT (right). Confederate is showing minimal seed heads which allows for quality of feed to be maintained at a high level. This was taken on the 28th of November, 2012 and it was from the 2010 phalaris trial at Leigh Creek, Victoria. This trial was sown on 3rd May 2010.

Phalaris "types" | Figure 1



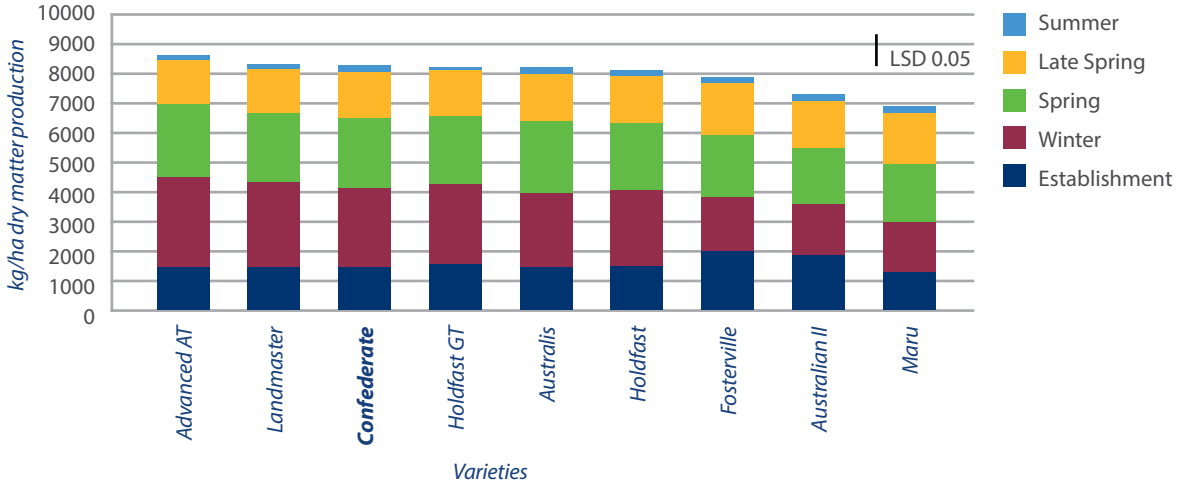
Pest and disease tolerance

Confederate is susceptible to common pasture pests such as blue oat mite and redlegged earth mite, so ensuring that the seed is Ultrastrike treated at the time of sowing will give a good level of protection during the establishment period. It is still critically important to monitor the emerging seedlings and if pest populations are starting to cause damage, then a foliar insecticide may be required to give an improved level of protection. Other pests that can cause damage to phalaris are slugs and snails, so be sure to use bait if you know that these could be a potential risk. Field crickets have also been known to cause damage, especially when establishing phalaris in heavier soils that are prone to cracking over the hot summer months.

Confederate has been selected for rust tolerance. Rust can affect feed quality in some environmental and seasonal conditions.

Trial data

2012 Stage 2 Phalaris Trail at Lismore, VIC | Graph 1



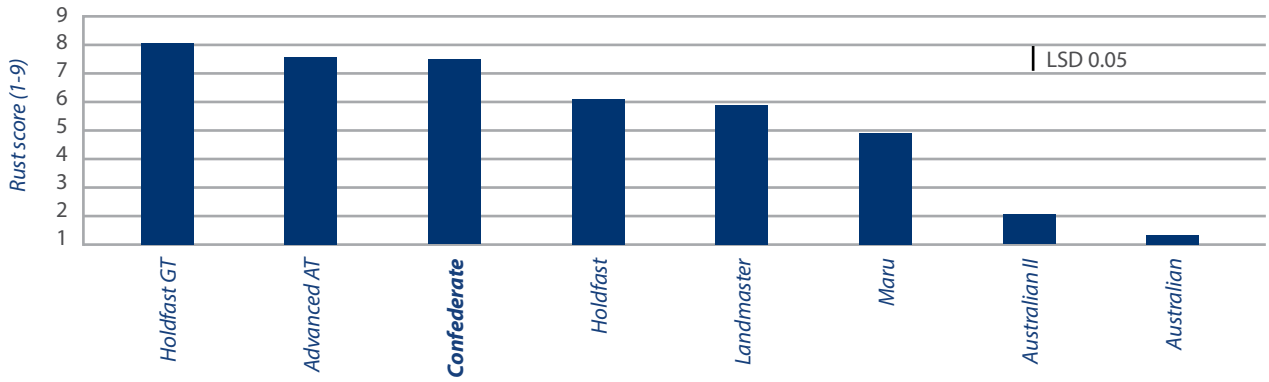
The above graph shows the seasonal dry matter production of Confederate compared to other commercial phalaris varieties at Lismore, south-west Victoria, sown in autumn 2012. The Lismore area has traditionally used phalaris as a base pasture for many livestock production systems.

2010 Phalaris Trial, Canberra, ACT | Graph 2

	YIELD – %Cntrl	Ratings – %Cntrl
Advance AT	111	119
Atlas	82	80
Australian II	72	104
Trial Line	81	92
Holdfast	100	100
Holdfast GT	94	117
Landmaster	83	97
Maru	80	107
Confederate	97	98
Trial Line	81	97
Sirosa	97	104

The data in the table above is from a phalaris trial conducted near Canberra. The trial was sown on the 10th of May, 2010. The table is showing the yield percentage against the control which was Holdfast phalaris over multiple harvests and the rating percentage are visual scores for both growth and survival over time of the phalaris compared to the control variety.

2010 Phalaris Trial, Leigh Creek, Ballarat, VIC | Graph 3



The above graph is showing leaf rust scores as an average over two years of Confederate compared to other commercial varieties. (1 = high rust present and 9 = no rust present).

Sowing and establishment

Phalaris is a species that does not compete well against other species, especially weeds. So planning and preparing a paddock with the intention to sow down a phalaris based pasture is important. Established phalaris plants can compete well for moisture and nutrients and hence why it is generally seen as a very persistent pasture species.

When planning to sow down a phalaris based pasture, it is important to know the weeds that are present in the paddock and their life cycle. A plan should be set around the time needed to clean up weeds prior to sowing phalaris as well as what weeds may still be present at the time of sowing the phalaris. Regardless of time taken and how successful any weed control measures have been during the clean-up phase, a selective herbicide option should always be budgeted for. This will ensure that any weeds that germinate after sowing can be targeted with the aim to give the phalaris and any other pasture species a chance to establish.

Phalaris is best suited to heavier soil types with good levels of fertility, but can also be sown into lighter soils with good fertility. Phalaris is generally sensitive to acidic soils, so lime applications may be necessary to correct soil pH prior to sowing. Sowing of phalaris with a plan and following some simple guidelines will ensure a higher level of success so that the investment made to a long term perennial pasture delivers a sound return. Phalaris is a small seeded temperate species and is sensitive to sowing depth. If it is sown too deep, the seedlings will either take a longer time to germinate or not germinate at all.

Some other factors to consider when sowing phalaris include:

- Minimise crop residue from previous cereals or short term pastures
- Prepare a firm, fine seed bed
- Try to achieve a knockdown spray of weeds just prior to sowing
- Sow into warm soils with adequate soil moisture
- Use a roller or press wheels to ensure good seed to soil contact
- Monitor for insect pests and weeds in the first 6-10 weeks

Confederate - Fast Facts

Class of Stock	Dairy, Beef, Sheep	***Treatment recommended***	Ultrastrike®
Sowing Rates	0.5-4kg/ha	***Flower Heading Dates***	n/a
When will feed be available	Autumn, Winter and Spring	***Ploidy***	n/a
How can it be used	Grazing, Silage, Hay	***Endophyte***	n/a
Rainfall guide	Minimum 500mm rainfall per annum unless irrigated		