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Introduction

From everyone at Western AG, welcome to the April sowing edition of our newsletter.

Recent rainfall so far has been patchy across the Mallee, Wimmera and SW Victoria. Summer rainfall has generally been below average also and therefore the level of stored moisture is down. At the time of writing, there is not adequate moisture to germinate pastures and crops. Therefore, it is quite likely that pastures and crops will need to be sown dry. Dry sowing has been undertaken more and more over recent years and provided an appropriate pre emergent program is used in the case of crops has been very successful. One thing to keep in mind when dry sowing, you may choose to actually sow earlier than normal due to the obvious delay in emergence.

We hope you enjoy reading the articles in this edition and as always specific advice will be required for each situation, we are here to help and only a phone call away.

Celebrating 10 years in business

We are pleased to announce that Western AG is officially 10 years old this year. We started as a team of 3 people in early 2005 and, since that time, we have been able to grow into a group that includes the largest and most experienced agronomy team in Western Victoria with a similarly experienced team of animal health and merchandise specialists, branch managers and logistic personnel working across seven locations.

Our entire focus is based on advancing the farming business of our clients and our approach to service is to not to settle for average and to continuously strive to improve what we do.



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Our approach to agronomy services is not changing in that it is uncompromised, independent and can be provided on a fee for service arrangement or as a package with the supply of inputs. The feedback from clients has been that our "agronomy plus input supply" offer is great value in that agronomy is free of professional fees and that there is a guarantee on competitive input pricing, supply and product quality and performance.

So from us it is a big thank you for the support of our business over the last decade. As a still young team we are committed to further investing in client service initiatives, our people and our infrastructure and look forward to being of service to you over the next decade and beyond.

Wishing you the best for the 2015 season ahead.

The Western AG team.....

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Experience Counts With Agronomy (by Philip Hawker)

Intensive cropping operations has proven to be very profitable over recent seasons particularly where rainfall has not been too limiting, however the risk is increased due to the higher per hectare investment. Part of the planning process we conduct with clients is to review the enterprise mix and level of inputs being used; care always needs to be taken to avoid compromising profitability when trimming inputs. This is where experience and local knowledge counts.

A number of areas where it may be tempting to reduce costs are fertiliser and slug bait. For example, it can be too simplistic to cut sowing P level to 5kg/ha or less. Approximately 2.4kg/t of P is exported with every tonne of wheat, for barley its 2.9kg/t, faba bean 3.8kg/t and canola 6.5kg/t. Client experience is that reducing P rate at sowing even on high P test soils can lead to reduce early crop vigour and crop competitiveness. Under ideal conditions there may not be a yield response, introduce increased weed pressure and a dryer season the result can be different. Our view is that P rate used should be in line with at least the anticipated export.

We collect approximately 300 surface soil tests each summer for clients and we are available from now to collect deep soil samples for available nitrogen, sulphur and moisture.

Slug activity has been noted in paddocks and pressure is expected in crops and pastures this year in high rainfall areas. Meta at 7-10kg/ha is attractive on price and the number of bait points /m2. The problem is persistence and rain fast, our observations have been after 2 weeks and/or 10-15mm of rain it is rendered ineffective. Water proof baits deliver a higher amount of active ingredient and found to persist for up to 4 weeks (if they are not consumed by slugs). Interestingly, the number of baits /m2 is not everything. For example, observations by Dr Michael Nash SARDI is that each pellet of Metarex can kill 4 slugs, 3kg/ha delivers 18 bait points per m2 but can kill 72 slugs.

Our team of 12 agronomists have over 130 years combined experience; the majority of this experience has been accumulated by each individual in the area they work as agronomists working for a farming clientele. As a team we actively share information with each other and are committed to getting it right in the paddock.

2015 Knockdown & Pre-Em Strategies (by James Jess)

Following is a list of the common herbicide's used pre sowing to achieve the best possible start to the crop. It is very important that this stage of the program is done to the best of your ability as it's the platform for the entire season.

KNOCKDOWN STRATEGIES 2015

Ammonium Sulphate

After a long summer, the addition of ammonium sulphate needs to be considered to control stressed weeds. The addition of ammonium sulphate has a number of positive effects, including: • Buffering agent: improves water quality conditions, particularly in hard water.

• Improves pesticide activity in hard water.

- Slightly adjusts the pH, improving the
- performance of a range of pesticides.

• Acts as a buffering agent: Reduces the chemical antagonism in a range of herbicide mixtures

• Improves herbicide activity: increases the biological activity of the plant, leading to improved uptake

• Improved uptake of herbicides under less than ideal conditions, e.g. plant stress.

Weedmaster ARGO (540g/L Glyphosate) ARGO is Nufarm's premium 540g/L glyphosate best suited to achieving fast and efficient knockdowns prior to sowing. ARGO has excellent compatibility with all chemicals, and boasts a 20 minute commercial rainfast offer that is well suited to our typical weather patterns at sowing. ARGO's dual salt technology also means faster uptake and translocation resulting in a powerful knockdown.

Roundup Ultramax (570g/L Glyphosate) Roundup Ultramax is a premium high load glyphosate from Sinochem.

"Sequential Knock" Strategy

With glyphosate resistance becoming an alarming problem in many areas, the Sequential Knock program involves the spraving Paraguat (Gramoxone) followed by another application of Paraguat about 10 days apart. This strategy will ensure reducing the effects of any glyphosate resistance by achieving 100% control. It's very important to use this knockdown as a resistance management tool as it takes away any reliance on glyphosate to achieve a pre-sowing knockdown. Speak to your Western Ag agronomist regarding the timings around sequential knocks and their effectiveness in ryegrass control prior to sowing .

Estercide Xtra 680

Estercide Xtra 680 is best used to clean up any broadleaf weeds, typically thistle, which has made it through the summer months or germinated on opening rains. It can be mixed with Glyphosate to achieve an excellent clean up prior to sowing cereals. Keep in mind that Estercide Xtra 680 cannot be used prior to sowing canola if you plan to sow within 21 days of spraying.

Lontrel Advanced (600g/L Chlorpyralid)

If thistles are a problem in paddocks being planted to canola then Lontrel Advanced is an excellent way to spike your glyphosate to achieve solid results. There is a 1 week plant back which is significantly less than the 21 days that's required when using Estercide Xtra 680. If you are requiring a quicker plant back time robust rates of roundup will achieve good results on thistle.

Hammer (240g/L Carfentrazone-Ethyl)

Hammer is a contact herbicide that can be used as a quick brown out tool or for control of any marshmallow that has germinated over the summer months. Keep in mind that Hammer is a very quick acting herbicide and as a result may affect the results of harder to kill weeds such as phalaris or bent grass.

2015 Knockdown & Pre-Em Strategies continued.....

PRE-EM STRATEGIES 2015

Sakura

Sakura has been with us for the past two seasons and most growers have experience huge advancements in ryegrass control. Confidence is building and Sakura will dominate the wheat planting as the preferred pre-emergent in 2015. This is great news for pre-em chemistry such as Trifluralin which no longer has mounting pressure to perform in ever increasing ryegrass populations.

Sakura was only registered in wheat, and recently has gained registration in lupins, chickpeas and field peas as well. Sakura will always work better where there is no cultivation prior to sowing. Cultivation buries weed seeds well below the chemical band and is one of the main causes as to why Sakura, which is taken up through the roots, will fail. Incorporated by sowing (IBS) within 3 days of spraying is the recommended application for Sakura. Despite Sakura achieving good results being washed into the soil by rainfall, results over the past two seasons have proved that IBS treatment is best to ensure optimum ryegrass control.

Remember plant back limitations: Oats, Lucerne, medic, Annual ryegrass -21 months +550mm minimum interim rainfall. Sakura does have its limitations. It is not a silver bullet. If paddocks are at the point of extremely high ryegrass levels, consider what can be done to reduce numbers before relying on a pre-em to get you through a season.



Avadex Xtra (500g/L Triallate)

Avadex Xtra plays a key role in supporting both Trifluralin and Sakura in achieving the best weed control. Commonly used as a wild oat pre-em, Triallate is a fantastic addition to the improve control on wild oats as well as ryegrass & brome grass. It provides shoot uptake which is an excellent characteristic when combined with either Trifluralin or Sakura which are both root uptake.

Trifluralin (480g/L Trifluralin)

Trifluralin is a very important preemergent for the control of annual ryegrass in barley and canola. It's been widely used in wheat, canola and barley as the key ryegrass pre-emergent for many years. Sakura has given growers the flexibility to rotate the chemistry used on the wheat phase and help delay the onset of

résistance to Trifluralin.

Trifluralin has a lot less flexibility then Sakura in that it requires to be incorporated within 12-24hours of application. It also binds to stubble which means it is even more important to practice good stubble management (i.e. Burning to eliminate trash, bailing straw, inter-row sowing or windrow burning).

Rustler (500g/L Propyzamide)

Rustler is the only APVMA registered propyzamide herbicide for use pre-em in canola. It provides pre-em control of annual ryegrass, barley grass, canary grass & silver grass. This product is typically used in combination with Trifluralin incorporated by sowing (IBS) and provides another means for affective ryegrass control when moist soils are present with lengthy residual periods will be achieved.

Ryegrass is a fierce competitor of any crop and can reduce yields significantly. When it comes to grass weed control, it's all a numbers game. Remember that there needs to be consideration into whether or not your system really allows for an early sowing. If it is a "dirty" ryegrass paddock then do not jeopardise the benefits of a solid knockdown prior to sowing. On the flip side if the paddock is clean and you're confident that there will be moisture there to activate the pre-em chemistry, then the benefits of early sowing will shine through.



Kamba 500 (500g/L Dicamba)

Hogweed can be a real issue when looking to plant Canola, Oats or barley. Weedmaster ARGO and Kamba 500 provide acceptable control of hogweed when planting all three crop types. There is a 7 day plant back for cereals and a 10 day plant back for canola. If you are looking for a shorter plant back period, robust rates of Weedmaster ARGO combined with Companion will provide great results.



Associate (600g/kg Metsulfuron Methyl) Associate is a cheap mixing partner that is often used with Glyphosate for the control of hogweed, sorrel, whip thistle, and loosestrife prior to sowing wheat and barley. Do NOT use Associate if you are planning to sow canola, oats, or pulse crops into a paddock as the plant back is 9 months and beyond. Do NOT use Associate if you are planning to sow barley within 6 weeks of application due to plant back restrictions. There is a 10 day plant back for wheat. All of the weeds controlled by associate are able to be controlled by robust rates of ARGO with good results.

Companion / VC700 / LI-700

These are excellent multipurpose adjuvant combining natural surfactants and penetrants which are derived from soybeans. They enhance the uptake of many systemic herbicides, allowing them to effectively penetrate into leaves. Key benefits include:

- Acidifying and penetrating surfactant
- Reducing alkaline hydrolysis
- Assist with the uptake of foliar fertilisers
- Assist in the management of spray droplet size

Most growers would be familiar with these products as they are commonly used when spraying knockdowns after long dry summers where stressed weeds are in abundance.

Knockdowns for the Wimmera / Mallee (by Tim Hofmaier)

The Wimmera/Mallee has received good rainfall over the summer months with most areas ranging between 60mm to 100mm. This has allowed farmers to conserve the moisture by spraying summer weeds with a small percentage of growers on their second spray in the paddock. With knockdown season just around the corner farmers will need to start thinking about chemical options and strategies for controlling grasses and broadleaf weeds. Last season it was common to see tillered ryegrass escaping through the Glyphosate knockdowns due to the ryegrass getting to big coupled with possible resistance.

"Double Knock" Strategy

Unfortunately Glyphosate resistance is a growing problem Australia wide. It is important that we are both proactive and strategic when it comes to the use Glyphosate in our knockdown strategies.

A more rapid move to glyphosate resistance occurs where there was no tillage at sowing time. The double knock technique is the sequential spray of two knockdown herbicides from different MOA groups, such as glyphosate (Group M) followed by Paraquat/Diquat (Group L), at an interval between 1 and 14 days. This needs greater implementation to prolong the effectiveness of Glyphosate as there are very limited options moving forward. Spraying grasses which are under 3 weeks old (small) will give better control and quicker brown out of weeds.



Survivors of Annual Ryegrass sprayed at Glyphosate @ 1.5ltr/ha



Double Knock at Nhill - Big tillering ryegrass sprayed with Bazooka @ 1kg/ha (Glyphosate 800) + 0.125% Citric acid + 1% AMS (bore water) and then followed by Gramoxone @ 2ltr/ha 5 days later.

Marshmallows



5-6 leaf Marshmallow Knockdown Control with Bazooka @ 850g/ha + Valor @ 30g/ha, Hasten @ 0.5% + 0.125% & Citric Acid.

If the marshmallows are <5 leaf, robust rates of glyphosate and Estercide 680 are still a good option for control. The addition of Striker (Oxyfluorofen) will aid control of small marshmallows but products such as Valor (flumioxazin) or Starane or Flagship (fluroxypyr) will have to be included if the marshmallow is large and old.

Nozzle Selection for Knockdowns

Selecting the right nozzle and, more importantly, operating it correctly is important for two main reasons. Firstly, spray applicators are required by law to apply each herbicide in accordance with the guidelines on the label and, the correct nozzle selection will help result in the best job for controlling weeds.

There is a great variety of nozzles on the market now and farmers have the ability to choose the correct nozzle for their individual need and spray situation. Keep in mind three points when selecting the correct nozzle:

- Water rate and spray quality (droplet size)
- Spraying speed
- Bar Pressure (that can be reliably obtained by your boom)

It's important that individual properties of various chemicals are considered to ensure correct application is achieved. For example, Sakura and Trifluralin require high water volumes and a course droplet for even soil coverage.

Nitrogen Rich Strips (by Braydn Robertson)

Nitrogen is an essential nutrient required in high amounts by plants. Nitrogen supply can be a major limiting factor in dryland cropping systems. The amount of nitrogen fertiliser applied is critical in reaching yield potential. Too little N leads to a reduction in yield, while too much nitrogen can result in crops 'haying off' in drier situations.

Considering nitrogen is an expensive component of the cropping program, utilizing the required amount at the right time can produce financial gains. One method of assessing required N in crops is by the use of 'nitrogen rich strip'. These strips ensure that other issues such as sodicity, salinity, acidity, pests, weeds or disease are not the limitation. Western Ag is conducting some trials this growing season in the Willaura, Hamilton, Skipton, Horsham, and Nhill areas.

Nitrogen rich strips are a spreader width wide strip of extra nitrogen. Rates of fertiliser on each strip can be varied. Three different rates of top-dressed urea will be applied, 100kg/ha, 150kg/ha and 200kg/ha. These strips will be conducted in wheat crops. By doing this we are able to use these strips as a comparison to the rest of the crop to see if yield is limited by the availability of nitrogen. N strips are also good indicators on whether to top dress mid-season, if there is no significant difference in the comparison between the nitrogen rich strips and the rest of the crop further application of N may not be required.

Generally, if the N strip can be seen in the paddock then there is not enough nitrogen fertiliser being applied. If the N strip cannot be seen then there is enough nitrogen fertiliser being applied. The trials will be monitored over the growing season and the results will be collected and published in coming newsletters.



Sow on Time (by guest editor James Hunt CSIRO Agriculture)

Management skill is a crucial driver of yield and profitability in dryland grain farming operations. There is no better example of this than the combined benefit of timely sowing and appropriate cultivar choice on wheat yield. Sowing on time with the right cultivar can mean the difference between good profit and a significant loss, particularly in years with a tough finish. The great thing about sowing time and cultivar choice is that unlike other crop inputs such as N, the benefits cost nothing to achieve other than a good level of organisation. Given the low cost and obvious benefits of timely sowing, it is worth spending some time thinking about how to get as much wheat crop as possible sown 'on time'.

Target your optimal flowering period

The time at which wheat flowers is extremely important in determining grain yield. In any given environment there is a clearly defined optimal period during spring in which yield is maximised (see Figure 1). This period is defined by decreasing frost risk, and increasing risk of drought and heat stress. It should be noted that this optimal period is a trade off between frost heat and drought, there is no 'safe' time to flower where all three risks are avoided. In tough seasons crops flowering during the optimal period will probably experience drought, heat and frost to a greater or lesser degree. A good rule of thumb gleaned from GRDC time of sowing is that the highest yielding treatments tend to sustain around 5-10% frost damage.



Figure 1. Relationship between flowering time and yield at Kerang and Lake Bolac. Optimal flowering periods are highlighted by light and dark grey boxes. Curves are derived from APSIM from 120 years of climate and with a yield reduction for frost and extreme heat events. Optimal flowering periods are mid-September at Kerang, and late October at Lake Bolac. Optimal flowering periods vary from late August-early September in very hot, dry environments (e.g. northern Mallee) to late October in cool wet environments (e.g. SW Victoria). Most environments fall somewhere in between e.g. mid Sept for the southern Mallee and early October for the Wimmera.

Optimal flowering periods can be achieved by a number of sowing time and cultivar selection combinations. For instance in a given environment a winter wheat sown in late March, a slow maturing spring wheat sown in mid-April and a faster maturing spring wheat sown in mid-May will all flower at the same optimal time (Figure 2). GRDC funded research by CSIRO, FAR Australia, SFS and BCG over the last four years has clearly demonstrated that slow maturing cultivars sown early tend to yield more than faster maturing cultivars sown later. It therefore pays for growers to have a slower maturing cultivar on hand to take advantage of early sowing opportunities. Whilst this is easy to achieve in SW Vic where good slow maturing cultivars like winter wheats Revenue and Manning and spring wheat like Bolac and Beaufort are well adapted, it's tougher in the Wimmera and Mallee where little effort has gone into breeding slow maturing cultivars.

Some options for different regions are discussed below:

SW Victoria

Four years of GRDC funded trials conducted by SFS, FAR Australia and CSIRO have demonstrated that in SW Vic, highest yields come from sowing dates between ANZAC day and mid-May. Bolac, Beaufort and Kiora have optimal sow dates around 25 April to 1 May. Winter wheats such as Revenue, Adagio, Manning and Scenario can be sown much earlier than this, but are unlikely to yield more than if they were sown in late April to early May, in part due to the Septoria tritici pressure in the SW Victoria environment. However, there is an advantage in sowing winter wheats early for grazing, and defoliation by grazing has been shown to be an effective means of controlling STB. Forrest has an optimum sowing date ~15 April which is problematic given the STB pressure that can be encountered planting at this time.

Mid-maturing cultivars Derrimut and Trojan have an optimum sow date around 15 May and are better suited to growers who feel they need a good knockdown to control annual ryegrass before sowing.

Mallee

Based on four years of GRDC funded trials conducted by BCG, FAR Aust and CSIRO, and also farmer experience in 2014, there is the potential for winter wheats (e.g. Wedgetail) to allow growers to take advantage of early establishment opportunities (from March to late April) in the Mallee. However, given the poor adaptation of Wedgetail to alkaline soils, yields are unlikely to be higher than faster spring varieties sown in their optimal usual window, but the grazing potential of early sown winter wheats could be attractive to farmers with livestock. In the Mallee the sowing window for adapted spring wheats opens in late April with mid maturing cultivars Trojan, Phantom, Yitpi, Magenta and Estoc having an optimum sowing date between 25 April and 1 May depending on location. Mid-fast springs such as Scout, Correll, Kord and Grenade have an optimum around 1-5 May, and fast maturing cultivars, like Mace, Corack and Emu Rock around 5-10 May. In many years seed bed moisture does not allow establishment at these optimal dates, and in these cases dry sown fast maturing spring cultivars will have the best chance to flower close as possible to the optimal flowering period.

The Future

Most major breeding companies have new winter wheat cultivars in their breeding programs which will drastically change the way wheat is grown, particularly in drier environs such as the Mallee. Because winter wheats need to experience winter (or a period of cold) before they will flower, they can be sown from late February onward. New cultivars will be better adapted than those currently available, and should be competitive with spring wheats up to the middle of May. This will allow a level of flexibility for sowing early and grazing crops not previously available to growers in western Victoria.

Managing Early Sowing of Canola & Beans (HRZ) (by Trudy McCann)

Increasingly, the message from advisors and research organisations has been of the potential for maximising yield by matching the optimum sowing time to your cultivar and variety. 'Early sowing' again and again is the slogan. Research into wheat time of sowing has been well publicised in the last few years, highlighting great potential for yield gains. In the high rainfall zone benefits can also be found with early sowing of canola and beans.

Earlier sown crops have a higher yield potential, utilise water more efficiently, have an improved tolerance to waterlogging and grow more dry matter. Improved early growth is also a positive in the fight against slugs. As is often the case these positives do come with some added risks and certainly management considerations. When aiming to sow either canola or beans in April, the primary considerations will be soil moisture, weeds and pest control.

Sowing in April will increase the likelihood of marginal soil moisture situations. It will vary with location and soil type but it is estimated that around 20mm of rainfall will be required for sowing and establishing crops from late April onwards in knife point press wheel sowing systems. Follow up rainfall of 10+ mm within 10 days of sowing will be important for pre-emergent herbicides to work effectively. Dry sowing, particularly in beans is a relatively safe option due to the larger seed and deeper sowing which keeps the seed away from a 'false' break.

Root disease of cereal, canola and pulse crops often produce the same symptoms as drought, waterlogging and poor nutrition. Without adequate seed treatments, break crops and paddock management high percentages of yield and grain quality can be lost. Outlined are common root diseases as well as the recommended treatment options.

Rhizoctonia Root Rot:

A fungal disease more common in Min Til farming systems. The first symptoms to appear are often bare batches in a young crop in addition to 'spear tipped' roots which are brown and rotting. These patches of crop may also be a purple-ish colour due to the lack of adequate nutrient up-take. Bare patches are more Advancements in pulse seed inoculation technologies provide added security in dry sowing. Moving from the standard peat base, which has a limited life span in dry conditions, to the new 'granular' types that are very stable and long lasting in low soil moisture conditions.

Early sowing may not allow time for a germination of weeds pre-sowing; hence the selection of paddocks with manageable weed spectrum is required. Both canola and beans have a range of herbicides available for grass weed management (assuming resistants is not a factor). Broadleaf weed management in beans is limited to pre emergence herbicides options; therefor herbicide type, application timing and rate need to be considered.

Pre-sowing and post sow pre-emergent (PSPE) herbicides perform differently in dry and low moisture soil conditions. Trifluralin and Triallate though highly volatile on the soil surface are very stable once incorporated in dry soil and will remain available for activation when moisture is available. Volatility varies significantly depending on soil moisture and temp at the time of application and immediately after. As both soil moisture and temp increase, so does the rate of volatilisation. Even the non-volatile herbicides such as Atrazine can lose up to 12% through post application volatilisation. For soil applied herbicides prone to volatilisation, such as Trifluralin and Triallate, any volatilisation can significantly reduce efficacy, particularly if not quickly incorporated.

ithremain viable for extended periodsuired.sitting on the soil surface. An option in
dry sowing situations is to hold off the
application of your PSPE herbicidesuntil adequate moisture has beennettil adequate moisture has beenmentreceived to germinate the crop. This
practise has a low margin for error if
application post rain is delayed. Beans
will not tolerate PSPE herbicide contact
if applied to the emerging plant. Canola
on the other hand will tolerate atrazine as
the plant is emerging.



Commonly applied PSPE herbicides

Atrazine, Simazine, Metribuzin and

Terbyne (terbuthylazine) all have low

volatility however they have increased

water solubility. In general, the higher

water soluble a herbicide is, the less

rainfall required for activation. Water

solubility can also affect the residual

highly water soluble products will not

activity of these herbicides. These

Faba Bean Crop

Root Disease & Products (by Michaela Alexander)

visible in a dry spring with the crop unable to access soil moisture. Barley is the most susceptible, followed by wheat and then oats being the least susceptible.

Good crop nutrition early on, especially P, N and Zn, enables plant roots to push through the infected top layer of soil effectively. The fungus benefits from summer rainfall and survives on germinating grass weeds. Registered seed treatment products and rates are:

- Vibrance (360mls/100kg seed)
- EverGol Prime (80mls/100kg seed)
- Rancona Dimension (320mls/100kg seed)
- Uniform (up to 400mls/Ha in furrow as a liquid band or per kg of fertiliser/Ha with granular fertiliser.

Take-All:

Can affect patches in the crop or random plants throughout. In severe cases the entire crop can be infected. Above ground plants are stunted and pale in colour while below ground / at ground level roots are blackened and the stem when cut is black in the centre. Later in the season areas affected have fewer tillers and during filling there are white dead heads visible which don't produce grain. Take-all does not like dry soil conditions and survives on root and tiller bases from previous crops. Oats are generally a non-host, whilst other cereals as well as rye grass, brome grass, silver grass and barley grass are all hosts. Barley is more tolerant than wheat and break crops (pulses and oilseeds) must

Root Disease & Products continued

be free of grass weed hosts to be of any benefit. Registered fertiliser & seed treatment products and rates are:

- Impact/ Jubilee (Flutriafol fertiliser applied) is an effective and registered treatment. Rates depend on fertiliser sowing rate kg/Ha.
- Jockey ®Stayer (450mls/100kg seed)

Crown Rot:

The crown rot fungus can affect cereal crops pre or post emergence, with symptoms most commonly visible late in the season. Plants are stunted with fewer tillers and have a honey brown colour on the crown of the plant. With severe infections plants die prematurely leaving dead white heads visible in the paddocks and have empty or small shrivelled grain. All cereal crops and most grass weeds are hosts.

Burning stubble helps to reduce levels but does not eliminate. Stock grazing stubble will spread the inoculum around the paddock; heavier crops = heavier stubbles = more inoculum. Shallow cultivation only helps spread the infection; it is best to sow between the rows where infection has been confirmed. The quicker the decay of crop residues, the better! Registered seed treatment products and rates are:

• Rancona Dimension (320mls/100kg seed is the only registered product available for use).

Pythium Root Rot/ Damping-Off:

More prevalent in areas with 350mm+ rainfall and acidic- neutral soils. There are 8 different species known to infect cereal, pulse and canola crops. Pythium grows rapidly and can continuously re-infect the crop throughout the season. Symptoms are often seen across the paddock as Pythium is generally distributed evenly throughout an area. High rainfall and cold waterlogged soils are surprisingly not the only environments Pythium thrives in. Above ground symptoms in seedling canola are spindly and stunted plants whereas cereals show a short and twisted first leaf. Root systems are stunted, without fine 'hair' roots and discoloured. Cereals are least susceptible followed by canola then pulse crops. Seeds treatments are relatively short lived and should be used in conjunction with vigorous crop varieties. Registered seed treatment products and rates are:

- Vibrance (180mls/100kg seed)
- Rancona Dimension (200mls/100kg seed)
- Maxim XL (up to 400mls /100kg seed in Canola

Cereal Cyst Nematode (CCN):

Infects feeds and develops on cereals and grasses only. Above ground symptoms include patches of stunted and yellowed plants, not dissimilar to waterlogging symptoms and poor nutrition. Plant roots are characteristically 'knotted' (wheat and barley) and 'ropey' (oats). The root systems of the infected plants are shallow and retarded in growth. Small white cysts on the roots can be seen with the naked eye when plants are dug up in spring. Some cereal varieties are more CCN susceptible than others (check with your Western AG agronomist).

Break crops such as canola or pulses reduce CCN numbers, but must not be infested with ryegrass or wild oats. Control of grasses germinating over summer is also a must. Good crop nutrition is crucial to give crop roots the best start when germinating. Nematode eggs stay in the soil over summer waiting to germinate in autumn when temps and moisture conditions are ideal.

Cultivation is not an effective means of control and a 2 year break crop is required where there is a bad infection. No current chemical options are available for control of CCN.

Root Lesion Nematode (RLN):

Consists of 2 main species which have the ability to cause significant yield losses in wheat, canola and chickpea crops. Symptoms include patchy areas of crop or a wavy appearance across the paddock while roots are discoloured, shorter and fewer in numbers. Pulses serve as good break crops and sowing early so the crop is able to get ahead before RLN's become active is an effective means to reducing damage. Min Till farming systems increases RLN as disruption of dry topsoil is enough to dramatically reduce numbers. There are no current chemical options are available for control of RLN.

Decision making:

PreDicta BTM is DNA based soil testing service carried out by SARDI (samples taken by your agronomist) and the only way to correctly diagnose what root disease may be in your paddocks.

PreDicta BTM tests for the following:

- 1. CCN
- 2. Take-all
- 3. Rhizo
- 4. Crown rot
- 5. RLN
- 6. Stem nematode

Many of the seed and fertiliser treatments listed have activity on more than one root disease, especially when applied at different rates. Most have activity on certain foliar diseases as well. Your agronomist will assist you with selecting the most appropriate product for your needs.



Disclaimer

The information contained in this AG Note is to be used as a guide only and specific information needs to be sought from the authors regarding individual situations. Western AG Supplies takes all care in compiling this information. However Western AG Supplies accepts no liability for any loss or damage suffered by any person who relies on this information.

Cropping on a Budget (by Matt Witney)

After an extremely variable 2014 harvest, and reduced profitability, many farmers are facing the need to consider reducing input costs to get through this year. Unfortunately, 2014 was the year that reducing input costs (particularly urea) was the winner with farmers taking advantage of reasonable yields and good grain pricing. But rainfall was extremely variable, and many simply did not get near enough rain to grow a good crop.

With good summer rain in many areas this year, and a cooler January, it is extremely important to take advantage of what nature has given us free of charge, this being soil moisture and mineralised Nitrogen. Therefore, controlling weeds prior to cropping is essential. Cultivation vs spraying is still a topic of conversation with cultivations direct costs being only slightly less than chemical (roughly \$9.50 vs. \$13/ha), but when you add machinery costs, extra wear and tear, potential

erosion, soil structure loss and damage to native soil microbes, chemical control is far more cost effective both immediately and long term. This approach will also improve sustainability and soil health for the future. Spraying weeds early can also reduce herbicide costs. Sheep don't necessarily control all weeds & moisture, so it is essential to monitor grazed paddocks and it may be necessary to remove stock and spray these paddocks.

If the above is taken in to consideration many farmers have soil tested this year to assess Nitrogen and all other fertilizer requirements. You can also take in to account what crop yields were last year, protein and oil levels can also be used to weigh up what is left over from last year. Therefore, we can use these methods to reduce input costs of granular fertilizer, and products such as lime, dolomite and gypsum, in some cases. Also, when calculating soil Nitrogen, it is essential to add mineralised Nitrogen and Deep Nitrogen to the Nitrogen budget when calculating potential yields for this year.

Foliar fertilizer can be 10-20% more efficient in uptake by the plant so it can be a far more cost effective way of feeding the plants during the year and it is a far more effective way to get in all nutrients to the plants. (Liquid injection also is a great way). This way we can also efficiently feed the crops Nitrogen, Phosphorus, Calcium, Magnesium, Potassium, Boron, Manganese, Copper, Zinc, Moly, sulphur etc, which are all essential to plant health (not just NPK). Also Sap tests can have a turnaround of 1 day, so you can get results fast and feed a crop within 24 hrs of testing if needed.

Furthermore, sap and tissue testing during the year can be a great way of monitoring whether or not the plants need feeding, and what they actually need. Most poor years are followed by good years, and you can adjust the foliar budget during the year, depending on climatic conditions, rather than putting all your eggs in one basket with soil applied nutrients at the start of the season, or relying on "Gut Feel".



Another way of reducing input costs and reducing risk is by not continuous cropping the whole farm. Rotations of hay crops, pasture phases and inclusion of a sheep enterprise can reduce exposure to climatic risk, as well as aid in weed management strategies. Often in continuous cropping systems, 20-30% of the cropping is high input, high risk and low profit, particularly if we are chasing resistant weeds, expensive herbicides with high weed numbers, and fertilizer rates to achieve vigorous crops. This can quite easily lead to a very poor gross margin in this particular situation. If the farming system allowed, it would be more economic to re-allocate this to another enterprise.

Converting to 'no till' can also help reduce input costs and especially improve timing. Many farmers have simply converted their machines to 'no till' by simply removing every 2nd tyne, putting on a narrow point and laying back their finger tyne harrows therefore converting a 7" spacing machine to 14". This can all be done with minimal cost and consequently substantial fuel savings. In 'no till' situations, reduced seeding rates and better utilization of fertilizer and chemicals can be achieved as well as improved soil fertility over time.

Dry sowing early is also a great way to reduce knockdown costs. Weeds are often smaller so requiring less chemical and often no knockdown is required because there is nothing to spray. Also, some pre-em herbicides can work better or remain effective in a dry soil if incorporated by sowing. They are then activated by the opening rainfall. Trifluralin is a great example of this. This can also reduce costs for in crop spraying, as well increase crop health, vigour and yield. However on the other hand, some chemicals are not effective if applied to dry soils and efficacy can be lost. Consultation with your agronomist is highly recommended.



Western AG is celebrating 10 years in business this year.

Our promise to you is to continue to provide the latest farm production technology and best possible service.

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Pasture Establishment - Getting it right! (by Matt Barber)

Paddock Preparation

Paddock preparation is critical when sowing a new pasture. A soil test is usually the first step before starting to renovate pastures. Lime and Gypsum may be needed as well as Phosphorus. Consult with your agronomist to make sure the fertility package is right. Usually most paddocks which are going into a pasture have been in a cropping phase and have a better fertiliser history than paddocks which have come straight out of an old pasture program. The next step is to decide the method of sowing, i.e. cultivation versus direct drilling.

Most new paddocks which go into pasture get cultivated. This allows for some levelling of the soil and setting up the soil structure ready for sowing. Cultivation can also aid to kill weeds. Despite this, there has been many a successful result by direct drilled pasture especially coming out of a cropping phase, where burning the prior year's crop stubble occurs then direct drilling into the paddock. Both practises work depending on the paddock soil type and history, and the equipment which the farmer has available to him.



Chemical Knockdown

This is an important step to make sure that you get it right. Usually before the paddock is cultivated, a chemical application will be applied to kill the old grass varieties as well as any weeds. This will also help the breakdown of the weed root structure and allow better cultivation and paddock preparation. Paddocks which are coming out of a cropping phase and have stubble will have a Glyphosate or a Paraquat application before the paddock is burnt, then possibility of another application before the paddock is sown. It is very important to remember the various plant back restrictions on individual chemicals. For example, some pastures cannot be sown for up to 9 months after using some chemicals.

Seed Varieties

Choosing the right type of seed variety for the right production system can be challenging. There are a lot of different pasture varieties on the market especially with ryegrasses, and not all of them will suit your end goals. With ryegrass varieties, apart from different maturity, there is also persistence issues which must be considered. Varieties with high amounts of wild entophyte will usually persist longer than varieties which have no entophyte; however the only problem is ryegrass staggers and production.

Some of the newer varieties on the market have excellent production but still have to be tested for persistence and production over a number of years. Also consider phalaris and fescues. These will give excellent production and persistence depending on the paddock conditions, but some varieties have to be managed in the spring due to rapid growth.

Sowing Rates of Pastures

Different soil types and rainfall will dictate the sowing rates of a new pasture. It is best to refer to your agronomist to get the exact rates for region.

As a guide, work off the below rates to get a good pasture establishment.

- Perennial Ryegrass (12 to 20kg/ha)
- Annual Ryegrass (15 to 25kg/ha) Phalaris (3 to 5kg/ha)
- Fescues (8 to 20kg/ha)
- Sub Clovers (5 to 10kg/ha) usually
- provided in a mix
- Balansa Clovers (2 to 4kg/ha) usually provided in a mix
- Lucerne (10 to 15kg/ha)



General Comments

After sowing your new pasture rolling paddocks will help with compacting the soil and the germination of your new pasture. Applying a bare earth treatment insecticide will help with protecting your new pasture from insect pressure especially red legged earth mite.

Furthermore, getting your clover seed coated with Gaucho will also help with insect pressure on your new pasture and provide it with a 'stress shield'. Another thing to monitor for is slugs and snails, especially on wet heavy soils. They can decimate a new pasture quickly and can breed in huge numbers especially on wet years. An application of slug bait will help reduce numbers. Multiple applications may be required if slug pressure is great.



These are only some of the things to look for when sowing a new pasture so consult with your Western AG agronomist to get the best results on soil fertility and preparation, variety choice to suit your farm and paddock conditions.