

Weaner Heaven!



Green feed for weaners! What a great way to utilise perennial pastures. Young, growing stock need a diet higher in energy and protein than mature stock. And this is exactly what perennial pastures offer at this time of year. Attendees at a recent Evergreen field walk inspected this subtropical perennial grass pasture at Tom and Sue Alston's farm at Badgingarra. Tom explained how he would soon be using this paddock for weaned calves. At the time, the calves were still on their mothers and utilising the best of the annual pastures before they deteriorated too much. He also noted that the perennial grass growth and quality was significantly better in amongst the patches of blue lupins, due to the increased nitrogen supply. Photo 5 Nov 08.

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Rush Control

Errol Howard of Wannamal sowed perennials this year into some wet country with rushes. The area with really thick rushes was burned and then cultivated prior to sowing to thin them out. But the thin rush areas were just burned in autumn, before receiving a double knockdown prior to sowing. As this photo shows, the double knock has produced a good kill on the fresh rush regrowth. The perennial pastures should now out-compete the rushes. Photo 27 Oct 08.



New Panics on Show

Attendees at a recent field walk in Badgingarra saw this excellent germination of new Panic varieties being developed by Geoff Moore and his team at DAFWA. The aim of this work is to release a variety superior to Gatton and Green Panic. Early results are promising. This trial will see them being tested under real life grazing conditions. Photo 5 Nov 08.



Tagasaste with Perennial Grasses

Will Browne of Warradarge (south of Eneabba) established this paddock to both tagasaste and perennial grasses in 2007. A combination of bare rooted tagasaste seedlings and seed was sown last winter, while the grasses were sown last spring. Early grazing has pulled out many of the smaller "seed" tagasaste, leaving mostly bare rooted plants. The paddock has been subdivided into a number of 15 ha cells and is rotationally grazed with cattle. Photo 4 Sep 08 courtesy Rachel Walmsley, Moore Catchment Council.



Excellent Establishment

Achieving a good germination of subtropical grasses often requires some form of machinery modification to overcome the problem of non-wetting sand. At a recent field walk around Badgingarra a number of local paddocks were inspected, with this one of the most impressive. It was sown by Gordon Dodd in mid September using a combine fitted with vertical scalping points on 14" spacings followed by press wheels. The recent late spring rains will see these newly sown pastures take off. Photo 5 Nov 08.



Committee Column

Erin Gorter (President), Kojonup

What an extraordinary winter - lots of rain, no rain, more rain, frost - the list goes on. Much to our relief on our farm we managed to get our spring planting of perennials in before another rain event, so we now have some heads poking out of the ground. Unfortunately these precious new plants are surrounded by erodium plants!! Despite all the planning and management, we still ended up with difficulties which we can only put down to chemical efficacy. We are now left crossing our fingers that the new plants will hang in there and compete with the erodium until we have a window to spray. Thank goodness for our Evergreen membership in helping us deal with this problem!

A fascinating start to our AGM saw participants viewing scientists in their domain. We discovered that you can have a meeting in Perth and still gain a tangible insight into agriculture, thanks to Dr Rob Kelly and his team. I believe all those in attendance took away a much greater understanding of some of the research undertaken by CSIRO right here in Perth. The tour was followed by the AGM, then sessions led by two of our Evergreen Members. A discussion on perennials on farm was led by Robert Rex, then David Monks presented his experiences on the Grower Group Alliance tour held in July 2008.

We now welcome two new members to our Evergreen Committee. Jim Wedge joins us from the North in Binu and Rob Rex joins us from Wagin/Kojonup. Both will add great value to the group both geographically and with their experiences on their own farms. You will hear more about them in future editions of your newsletter.



Committee Exposé

Stuart Bee, Jerramungup

Stuart Bee and wife Leanne have been farming at 'Laurinya' in Jacup (East of Jerramungup) since 2001.

They farm 4,500 ha of land with an average rainfall of 400 mm per year. Soils range from duplex sands with clay at depth, to deep white sand through to gravels. The heavier soils are on a phase system with lucerne for 4-6 years and then cropped over a similar time span with canola, wheat and barley. Currently there is ~2,000 ha sown to lucerne. The lighter soils are cropped in rotation with pink serradella and sub clovers with 400 ha of Erica and Margurita planted last season. And they have recently come over to what Stuart calls 'the dark side' and planted 40 ha of sub tropical grass! The livestock enterprise is a 7,000 head self replacing merino ewe flock with some prime lambs.

Variable rainfall is the main reason Stuart keeps planting lucerne, as on average they receive 25 mm per month over summer. One year, 80% of the yearly rainfall fell in summer! After the last two dry summers at Jacup, Stuart realised just how much time lucerne has saved him, by reducing hand feeding. The environmental spin off is a reduction in ground water recharge and hence salinity.

Stuart is happy with his system and the area of perennial pastures - currently 40% of his farming area. As country goes back into lucerne phases after cropping, new varieties and other species will be planted to produce a mixed pasture. Better management of his grazing system is planned. Stuart is yet to see how perennial grasses will fit into his system, but is keen to trial pasture cropping over them.

Stuart says he tries to keep an open mind and retain a flexible approach to farming because "mother nature changes her mind too frequently at our place to allow us to become complacent".

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Case Study - Graeme & Margaret Jones, Ongerup

Tom Bailey, WA Lucerne Growers, Katanning, Ph: (08) 9821 3263.

Summary

Name: Graeme Jones

Location: "Corackerup" in Ongerup

Property Size: 3100 ha (with 2600 ha arable)

Average Rainfall: 438 mm

Species Sown: Lucerne, Barley, Oats & Canola

Reason for Species Selection: initially to increase and improve green feed over summer

Enterprises: Sheep, cattle and rotational crops



"Lucerne has taken the lows out of our seasonal fluctuations"



Happy sheep grazing lucerne in May 2005 following a wet start to the year.

Farm details

- * Total area 3100 ha, 2600 ha arable divided into 54 main paddocks.
- * Livestock are a major part of the farming enterprise.
- * They shear 6000 sheep, have 2800 mated ewes and 600-700 hoggets, 50-60% are mated to merinos and 40-50% mated for prime lambs.
- * 130 breeding cattle, with calves and weaners up to 400 at times, the progeny are sold at 16 months.
- * Area under lucerne varies between 500-700 ha depending on the cropping rotations.
- * One third of the arable land is cropped. In the past it used to be one year in three, the inclusion of lucerne into the rotation has changed this. The lucerne paddocks are usually in lucerne for four or five years, then into crop for two or three years.
- * Rainfall average is 438 mm. Three out of five years they get good summer rains that benefit lucerne and any perennials.

Initial sowing

Coming from South Australia, Graeme had seen good lucerne paddocks and realised the value of summer green feed. With only a small property, they tried a few paddocks of Hunter River lucerne and only got a couple of days feed from each paddock. In hindsight it was the wrong lucerne, the wrong inoculant, insufficient insect control and too small an area.

After seeing piezometers around Jerramungup, and with a rising water table and the appearance of small salt scalds, Graeme decided to install some of his own. They now have 22 piezometers across the property that are read three times a year and used to decide when to plant lucerne and when and for how long to go into a cropping phase.

In 1998 Graeme decided to try lucerne again. He obtained advice from wherever he could, such as experienced grower Geoff Bee, the Dept of Agriculture and Tom Bailey from WA Lucerne Growers. A point that Geoff Bee made really struck home, "Don't mess around with 50 acres, put in 500 acres, so you can rotate a mob in it".

With a subsidy from the Two Rivers land care project, Graeme planted 250 acres a year for two years. The lucerne was established as a monoculture using winter active lucerne varieties with improved strains of rhizobia, lime and insecticides. Since then, he has planted lucerne in most years, with some sowings up to 300 ha in area.

With a bigger area of lucerne in, the benefits are now starting to be realised. Graeme said "We've reached the stage now where rain is valuable, no matter what time of year it comes, whereas you wouldn't have said that 15 years ago".

Pure stands or mixtures?

Graeme has tried both and is now leaning towards mixed pastures. The pure lucerne paddocks were on geranium-type paddocks, where there was no sub clover. However Graeme has noticed a problem with these pure stands. They can become water shedding areas rather than water absorbing areas. The sheep walk between the plants, creating bare patches. If it rains, the water doesn't go straight in, creating

Continued



Lucerne sown under a barley cover crop in 2008. Note two rows of barley between each row of lucerne.



Lucerne sown under a canola cover crop in 2008.

run off. But with some sub clover the water goes in where it falls. With a pure stand you can go from maximum feed to none whereas a mixed pasture will still have some annuals left. Graeme has also found that mixed pastures seem to fatten stock better than a pure stand. With a pure stand, you need to toss a lot of hay in the corner of the paddock. You do need more acres of mixed pasture to grow the same kilograms of green feed. A lot of the paddocks being established to lucerne now have existing sub clover pastures. In the following year, the sub clover and the lucerne provide a good mixed pasture.

Cover cropping

Since the Two Rivers project most of the lucerne has been established under a cover crop of barley. The reason for this is to reduce establishment costs. The barley was only sown in every second row. Graeme has found the yield declined from a 17 bag crop to 13 bags. There has been good lucerne establishment as it had some light between the rows and got its roots below the barley.

In 2007 he tried sowing the barley and lucerne across all the rows. The barley was sown at 30 kg/ha. With the dry conditions and competition from the barley, the establishment was not very good. Two of these paddocks were re-established in 2008. (WALG recommends using alternate row establishment for cover cropping)

In 2008 a new air seeder was purchased, that can sow fertiliser, grain and lucerne separately. Three hundred hectares was established under barley, oats and canola with 2 rows of crop and one of lucerne. With the increased light and moisture availability from the two rows of crop and one of lucerne there has been a very good establishment. Sowing two rows of crop

and one of lucerne will probably have little impact on the crop yield and still establish a good lucerne mixed pasture, with the added benefit of the paddock not being out of production for nine months.

Graeme's tips

Establishment

- * Seeding depth is most important, some of our earlier lucerne was sown too deep (sow at 5-10 mm deep).
- * Use insecticide. This is more important if sown in mid-winter.
- * You don't have to get rid of all the weeds, you just have to control them in the spring to let the lucerne get a bit of sunlight. Having a few weeds early gives the bugs something else to chew on.
- * Graze initially with cattle or very lightly with sheep.
- * I don't know about inoculant. We're using it regardless. When putting lucerne back into old paddocks, we might not need it?
- * No weeds before you put it in. Weeds germinating at the same time or just after are all right.

Grazing

In a first year stand, cattle get the first grazing, if possible. Cattle and perennials are a pretty good blend as they don't damage the plants as much. Sheep tend to graze lower and can pull some plants out.

All classes of stock go on the lucerne. Lambs are weaned at the end of October onto lucerne. Three to four lucerne paddocks are not grazed over winter but held back for weaning.

Continued

Lucerne is rotationally grazed in varying rotations and spelled to let it regenerate. Bigger mobs of 400-500 sheep are used to graze the lucerne with up to 1700 lambs in a mob. Bigger mobs are needed to try and graze the lucerne evenly. Smaller mobs tend to over graze some sections of the paddocks.

How we use our lucerne

We use lucerne for out of season meat production, with the lambs and the weaner cattle in most years on green feed right through to March. We haven't had enough paddocks to put them all on it, but we're at the stage now where we can have six mobs on it at a time. I've also got enough paddocks that I can rotate them around a bit.

We use lucerne to keep the water table below the surface instead of on the surface. The piezometers are telling us where the problems are, what we have or haven't achieved. If the water table is still at 1.2 metres, I would put lucerne back in. Some paddocks I just keep the lucerne in place for longer. Paddocks where we have got the water table down to 2.7-3.5 metres are fairly safe to put into crop for three or four years.

We also opportunistically cut hay. Hay in the first year is a good way to get rid of weeds, providing it is in early enough to be able to cut.

Advantages of Lucerne

- * Out of season livestock feed.
- * Growth rates of animals. Better growth rates of cattle. Sometimes we have to sell them before we want to because they are heavy enough.
- * Quality of wool. Low vegetable matter.
- * Lowering water table



Hay made from lucerne in December 2003.

- * Reclaiming a dam that was over 1500 Milli Siemens salt. After two years of lucerne the salinity dropped and the dam was suitable for stock again.

Key learnings / outcomes

- * In a pure stand, you need 40 plants per metre and, if it's a pure stand, it's got to cover the whole paddock.
- * In a mixed pasture situation 10-12 plants/m² is quite adequate. It's definitely adequate for the water table and the annual pasture will cover between the lucerne.
- * Don't set stock. You can definitely go beyond what the textbook says as far as pressure, and you won't wipe it out. We should have wiped some out in 2006 but we didn't.
- * Lucerne has reduced the damage from out of season rain. If you get it, the lucerne grows. If you don't, the sub clover is still there and hasn't been spoilt.
- * Drought insurance. A year with a dry winter and heavy summer rains means we still have feed on one third of the farm. If we have a dry summer we've still got the sub clover. "It's taken the lows out of our seasonal fluctuations".
- * Lucerne lowers the water table and has stopped salt scalds spreading from outside the property.
- * Get as much advice as you can before growing lucerne, you can always keep learning about it.

A WALG initiative funded by the National Landcare Program



Lucerne paddock in October 2008.

New pastures from Tassie

Bob Reid, Tasglobal Seeds, www.tasglobalseeds.com

Tasmanian seed company Tasglobal Seeds was formed in 2003 and initially focused on developing new and novel germplasm, with the aim of providing drought tolerant perennial species of grass and legumes for the driest regions of Tasmania. This was done, in part, by plant collecting missions overseas, and by utilising the collections held in various genebanks both here and internationally. A plant collecting mission to Central Spain in 1993 yielded some exciting new "Spanish Cocksfoots" that have proven to be both drought and cold tolerant, highly winter active and summer dormant, adapted to acid soil and surprisingly tolerant to grass grubs. As they say "the proof is in the pudding" with the two developed cultivars, Sendace and Uplands, persisting now under grazing for 12 years on a north-facing slope at the driest site in Tasmania, including 8 years of drought conditions. Both cultivars are already on the recommended list of the NSW Department of Agriculture.

With the success of Sendace and Uplands, Tasglobal Seeds was asked by farmers in the Wimmera and Mallee to look into the possibility of finding similar plants but for even drier conditions and, most importantly, the ability to grow on highly alkaline soils. To this end a collecting mission to South East Spain was undertaken in 2007 and a wide range of germplasm collected - some Spanish Cocksfoot from as low as 200 mm annual rainfall, and surviving the current 9 year drought. Selections have already been made of these very fine-leaved ecotypes and the first commercial seed will be available in 2012.



Typical Spanish Cocksfoot country. Tough!

Tasglobal Seeds is also looking at sub-tropical germplasm as part of its "plants for climate change" program. Put simply, cultivars developed in Queensland and/or Northern New South Wales are unlikely to perform well in the warm Mediterranean zone and species from a summer/winter rainfall interface should be better suited. A number of ecotypes of *Digitaria eriantha* "Wooley Finger Grass" from South Africa have been under test for cold tolerance in Tasmania. Two have been outstanding in surviving consistent winter minimum temperatures of less than 0°C over a five year period. It is not, however, the aim to produce a cultivar for Tasmania (the summers are too cool!) but for those areas of Western Australia and South/Central New South Wales where summer temperatures are high.

A similar study is being undertaken with sub-tropical legumes. Germplasm collected in Northern Mexico, particularly from the genus *Macroptilium* (same genus as Siratro), was found in areas that experienced lengthy periods of below 0°C minimum temperatures and 300 mm annual rainfall. As the climate warms and seasonal rainfall patterns change it is this type of germplasm that will maintain our grazing systems.

Tasglobal Seeds has just released a new perennial brome grass - Exceltas (*Bromus coloratus*). This is a new species to pasture agriculture and originates in the foothills of the Andes of central Argentina and Chile. It is the result of a 15 year breeding and development program aimed at finding a cultivar that could replace perennial ryegrass in those areas where it fails to persist - dry banks, grass grub prone soils; and most importantly, much improved response to summer irrigation (it has a much better tolerance to high summer temperatures than perennial ryegrass). It has performed very well in those regions with over 800 mm of annual rainfall and because it can be held as "stand over feed" without losing quality it is receiving a lot of interest from beef and fat lamb producers.

Another, better known species, Tall Fescue is in an advanced stage of development. A breeding program centered on North African material has resulted in a selection that is responsive to both winter or summer rainfall. It is proving to be both very productive and drought tolerant, at least under Tasmanian conditions, and we expect to plant our first basic seed block this coming season.

GGA Study Tour of NSW - July 2008

David Monks, Badgingarra, Ph: (08) 9652 9277.

I recently had the opportunity to represent Evergreen Farming on the above tour. The tour was organized by the Grower Group Alliance (GGA), an umbrella group that builds relationships between the numerous farming groups, research organizations and agribusinesses in WA. The aim of the tour was to expose the 17 participants to as much agricultural diversity as possible.

The main region of interest was the mixed farming land from Wagga Wagga to Dubbo, predominantly in the 450-550 mm rainfall zone. The two major differences between that area and WA was the almost even monthly rainfall (September and October peak rain) and the 20-40% clay soils. Growing season rainfall (for crops) ranges from 200-350 mm.

While the tour covered mainly cropping items (including GM canola), I will concentrate mainly on the pasture and soil health topics in this report.

The tour flew into Sydney, then after visits to the Marrickville Organic market, the Bread Research Institute and Rabobank head office, we flew to Wagga Wagga. Our first site visit was to the Department of Primary Industry where Dr Philip Eberbach ran through the experiment that measured nutrient and water uptake of lucerne in the local soils. His key findings are that lucerne has two different types of root systems, the deep tap roots hydrate the surface roots which lie waiting for surface water to produce the stem and leaf growth. Regardless of the quantity or quality of the deep water supply, it is surface water which produces the growth in lucerne, which explains why it does so well under irrigation.

We visited Malcolm and Des Colhaven who were hosting trials on grazing wheat varieties. To fill a winter feed gap, the Wylah wheat is sown early (i.e. no knockdown herbicide) at 100 kg/ha on 12 inch spacings. If the sheep are removed at Z31, before the 1st node is 1½ inches above the ground, there is no yield penalty. Malcolm and Des have observed significant livestock production increases when calcium, magnesium, lime and salt are made available. My observations were that irrespective of the stocking rate (7-14 DSE) the crops were not suffering, the sheep were targeting leaves not stems and any weed was devoured as soon as it appeared. However, livestock lead to serious compaction of the soil, increasing seeding costs the next year and decreasing water infiltration.

The cropping operations we subsequently visited were all reducing or eliminating their livestock due to the compaction effect. The common theme was that "if you run livestock, you run water". Strangely, it has been the high livestock price on

lucerne pastures (currently \$110/head for a 42 kg liveweight lamb) which has kept most farmers going through the last 5 years of drought.

However, the stubbles being incorporated in continuous crops did not appear to be increasing organic matter levels on soil tests. We visited Dr Clive Kirkby who outlined his trials of adding nutrients N, P, K and S to feed the microbes to convert incorporated stubble into humus, not greenhouse gas. His work is based on stubble loads from 3-10 t/ha and therefore incorporation is only viable if erosion control, moisture retention, chemical fertility or soil strength is improved or controlled.

At Young, Dr John Kirkegaard demonstrated the canola grazing trials. With results similar to the wheat grazing, the canola showed little damage after being eaten almost into the ground. Canola is rotationally grazed hard up to first flower elongation, the grazing delaying flowering approx. 1 month. Blackleg damage was evident although it appeared that the higher the blackleg rating of the species, the less damage was suffered. Crops are swathed and harvested normally.

At Temora, we met Terry Brabham of BFB Cargill, who showed us his 130,000 tonne joint venture grain receival facility with Cargill. Apart from cropping 7,000 ha, he has an \$8m pig facility turning off 115,000 pigs annually under contract, a transport company carting 320 t/day/truck in a fully integrated logistics business. He grows it, trucks it to the pellet plant, trucks it back to the pigs, then grows out the pigs. But his best tip was on how to select staff; pick them by the way they play sport. I liked that idea and it obviously works for him.



Poor stubble breakdown under continuous crop.

Continued

Rob Taylor at Greenthorpe brought to our attention the problem of declining canola yields in that area. Where yields of 3 t/ha were common 15 years ago, yields over 1.8 t/ha are uncommon now. Ironically, he admits that their best gross margins are from grazing cereals, so his sheep may have a few more years up their sleeve.

We then met Jodie Dean who is the face of the Central West Farming Systems group. Their logo is “farmers advancing research” and there appears to be a close and mutually beneficial partnership with the DPI. Jodie introduced us to Jemalong Station owned by the Twynam group where we viewed pasture cropping, Waygu & Angus cattle, dry land & irrigated cropping and horticulture. We then travelled to the DPI Condobolin where a team of 3 plan, plant and harvest over 6,500 trial plots per year, quite an extraordinary achievement. The general consensus is that intensive or continuous cropping may bring in greater returns but at higher risk and that perennial pastures (e.g. lucerne) offer less income volatility. Many of the big croppers are very stretched financially due to the droughts.

We travelled on to Dubbo and after an overnight stop, visited Peter Knowles at Wellington. Peter has problems with soil compaction, water infiltration, erosion and wants a “lifestyle without livestock”. He is a proponent of Cover Cropping, which uses discs to sow into fully retained stubbles with no livestock in the system. The aim is for the soil microbes to incorporate the stubble, increase the organic matter and improve water infiltration and holding capacity. However, he admits that he is not seeing the soil carbon increases he would expect and from the soil compaction testing I did, I would have anticipated a softer soil profile. My observation is that most farmers want to do the right thing by the soil (such as stubble retention to increase soil carbon) but research has not adequately informed them of what works and what won't.

We then travelled on to Rick and Angus Maurice. Being enthusiastic Pasture Cropping proponents, they have utilized the experiences of Col Seis to combat their soil compaction, erosion and declining returns to turn around their operations. They are aiming for high profit, not high input/output crops and this year are on track to produce 3 t/ha of wheat for a cost of \$180/ha harvested. Their low cost operations are trying to work with nature rather than against it to reduce their risk. They firmly believe in the value of livestock and perennials in their cropping cycle and it certainly appears to be working.

The shovel test showed a soil high in organic matter, with lots of biological activity. I found an earthworm in my sample.

Contour banks once considered essential, appear to have little value if the soils keep improving. Many of the native perennial grasses have been stimulated by the cropping. Species include Red grass, windmill, panic and lovegrass, with the hairy panic being a good colonizer while cotton panic is a good production grass. Rick is not worried unduly by the saffron thistles present and suspects they are useful by breaking up the hardpan.

After 8-9 inches of rain in Jan-Feb 2008, the perennial grasses bolted leaving huge stubbles the bought in livestock couldn't handle for the crops to be sown into. Rick and Angus solved the seeding problem by putting Acraplant V slice twin disc seeders and press wheels onto a Morris bar. When we inspected the crops, germination of the 50 kg/ha looked robust, few annual weeds were present after the 500 ml/ha of Glyphosphate and the fertilizer seemed adequate at 35 kg/ha of MAP.

Rick and Angus use two wire electric fencing to rotationally graze their sheep. Low cost fencing solves a capital problem and “fencers” are quickly sold off. Lack of fencing infrastructure also allows cropping flexibility.

In Summary:

- Grazing cereals, lupins and canola is viable without suffering a yield penalty. Timing of seeding and stock removal appears to be the key.
- Converting stubble to stable soil humus is not yet an exact science. Much research needs to be done to quantify the best methods to ensure that the microbes are not converting the stubble into greenhouse gas.
- Pasture cropping was the stand out success. The soil was alive, the risk was low and flexibility was high.



Pasture cropping soil – note organic matter & obvious health.

10 ways to deal with rising fertiliser prices

Philip Barrett-Lennard, Evergreen Farming and agVivo, Ph: (08) 9475 0753.

1) use soil reserves

With current wool and beef prices, many of you who have regularly fertilised your pastures in the past (and have good soil fertility), will be considering scaling back or going without this year. Cutting back or not fertilising at all in one year will not see production levels crash, but rather ease back as fertility levels slowly decline. This is only worth considering if you know that you have high soil fertility. Soil and tissue testing is crucial. But how long can you continue to mine soil fertility? Not long, before productivity drops too far. A short term solution only.

2) reward responsive pastures

The old rule of thumb of applying 1 kg of Phosphorus per DSE/ha of annual stocking rate did just that. It rewarded productivity. High carrying capacity paddocks got more fertiliser. It makes a lot of sense. The problem is most people don't measure individual paddock stocking rate. Get to it! The 1 kg per DSE/ha rule is probably too high at the moment, but the principle still applies.

3) apply the most limiting nutrients

There is no use applying more Phosphorus when, for example, trace element levels are limiting plant growth. Identify those nutrients that are most limiting production (through soil and tissue testing) and apply those in preference to those least limiting production.

4) increase soil pH

Plant uptake of many nutrients is limited at low pH. If soil pH is below 5.0, you should seriously consider applying lime. But remember that lime is slow acting, so the productivity gains and subsequent return on investment take time to eventuate.

5) time applications to avoid leaching losses

The leaching losses that occur during winter on deep sands mean an early spring application of fertiliser is the only way to go on these soils. Of course, a split application makes most sense, but with increasing fuel and labour costs, it may not be economic.

6) grow legumes to supply N

The cost of fertiliser nitrogen is too high for most beef and sheep producers to consider using on a regular basis. Even on a highly responsive subtropical perennial grass pasture after summer rain, the extra feed from applied N (Urea at \$1000/t spread) costs close to \$200/t of dry matter to produce. It might be cheaper to buy grain?

The solution is to increase legume content and supply free N fixed from the atmosphere. The most productive perennial grass pastures all have a good annual legume component. Consider introducing legumes or improving the management of existing legumes to enhance their productivity.

7) avoid nutrient removal in hay

Hay contains a large amount of nutrients, especially K. The value of these nutrients must be factored in when selling hay off-farm. Can you afford to replenish those nutrients at today's prices? Think twice before you next sell hay.

8) avoid nutrient re-distribution in urine and dung

Livestock are constantly cycling nutrients in their urine and dung, and in the process moving them around the farm. Nutrient levels can build up under trees, in stock camps, and around watering points. Set stocking exacerbates this, while an intensive rotational grazing system can virtually eliminate it, as the animals are forced to poop and wee where they graze. Get your animals to place your nutrients where you want them!

9) use deep rooted perennials to recycle nutrients

Losing fertiliser that is leached below the root zone of annual pastures is a major inefficiency, especially on sandy soils. Perennial pastures, with their deep roots, are able to recycle these "lost" nutrients back to the soil surface. Not only is this a direct cost saving, this recycling also slows down the rate of soil acidification, reducing the need for lime.

10) increase soil organic matter

Organic matter not only supplies nutrients to plants, it increases the nutrient holding capacity of soil, and favours soil micro-organisms that assist nutrient uptake. This makes each bit of applied fertiliser go further. A good rotational grazing system and perennial pastures will quickly build soil organic matter.



Fertiliser Price Volatility

Kirk Reynolds, CSBP Market Development Manager - Pastures, Bunbury, Ph (08) 9724 9829.

Uncertainty remains in global fertiliser markets and growers continue to ask CSBP what is likely to happen over the coming months. No one can predict where world prices or stocks may go, but this article will describe what has happened recently and discuss the issue of securing supply.

The traded prices for shipping freight and some fertilisers have fallen dramatically in recent months and in response CSBP has released updated price lists.

Commodity fertiliser markets

Nitrogenous fertiliser prices such as urea have fallen around the world, and this fall has currently been greater than the effect of the falling A\$, resulting in lower costs of shipments to Australia.

Ammonium Phosphate markets have softened, but not to the extent of the straight nitrogen market.

The Potash market has few global suppliers and does not always follow the trends of other fertiliser commodities, as it is controlled by a very few large suppliers.

Securing supply

CSBP and growers are facing similar pressures. They don't want to pay for fertiliser too far ahead of when they need it

because of the high cost of capital, but they want to ensure there is enough to meet requirements. By working together, the commitments growers provide CSBP will help secure their supply.

The lead time to obtain product remains three to five months for most fertilisers. CSBP will not be undertaking speculative imports this year, but will rely on what customers have requested through the Fertiliser Supply Agreement 2008/09.

Uncertain fertiliser price outlook

Unilateral actions by fertiliser trading nations such as India and China have had sudden and dramatic effects on world supply and price. Volatility of prices is likely to remain, and with it the prediction of global market changes is extremely difficult. The effect of the A\$ exchange rate makes local fertiliser prices equally uncertain.

While farmers, as for CSBP, cannot be sure of what future price they will pay, both need to ensure that they have secured supply of their fertiliser for the coming season. CSBP has the largest purchasing program of any supplier in Western Australia, allowing us to smooth the impacts of major movements in global prices on behalf of our customers.



Find the missing piece of your soil and unlock its true value.

Choosing the right fertiliser for your soil doesn't have to be a guessing game. CSBP's NUlogic Soil Analysis service will provide you with a precise reading of your soil's nutrient levels, helping you determine exactly which fertilisers are required, so you don't waste a cent on fertilisers you don't need.

Soil test straight after pasture senescence to beat the peak period and you'll have your results in time for you to make the right decisions for the coming season. With the current fluctuations in input costs and commodity prices, if you don't use NUlogic, you're using no logic.

Pick up a NUlogic Soil Analysis kit from your local CSBP sales agent outlet today or contact your local CSBP, Elders, Landmark NUlogic accredited adviser for more information.

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EverGraze - South Coast Satellite Sites

Ron Master, DAFWA, Albany, Ph: (08) 9892 8521.

The Evergraze project has a major research site at Wellstead (80 km east of Albany), which is providing detailed information on a number of perennial pasture species. Another component focuses on monitoring a number of satellite sites.

Across the South Coast, 8 farms are being monitored as satellite sites. We are monitoring tall fescue, a lucerne and tall fescue mix, high input kikuyu systems, lucerne and chicory sites.

Following is a summary of 4 of the sites. Detailed paddock data will be provided as it comes to hand, with information on the other sites to be provided in subsequent issues.

1) Gavin and Vicki Smith

Location: about 20 km south west of Mt Barker in the Denbarker area

Enterprise: cattle with vealers marketed from November to January

Species selection: Resolute and Quantum tall fescue sown with oats (85 kg/ha of oats)

Sowing time: Early June 2007

Area sown: 20 ha

Soil type: sandy loam, gravelly sand and wet soils (adjacent to creeklines)

Rainfall: 650 mm

Aim of plantings: To extend the growing season and utilise wet portions of the paddock and slow down runoff into the creek.

Results so far: The paddock was prepared well in advance, with a double knock used to control weeds. It was then scarified and harrowed to get a good seed bed. Gavin mixed the seed with oats (85 kg/ha) and trickled the seed onto the surface. The paddock was then rolled to ensure a good seed soil contact.

Though unconventional, the result was very good. Gavin cut an excellent hay crop, with 227 round rolls cut and baled. The tall fescue was then left to grow through the stubble and proved to be very dense with excellent establishment.

The paddock is strip grazed using electric tapes. These are moved once the plants have been grazed down to about 5 cm. Concentrating the cattle like this prevents preferential grazing and improves pasture utilisation. Density appears to be maintaining and though it is early days in the monitoring program, the stand appears to be very productive.

Management issues: During establishment kangaroos proved to be a problem. Through the early summer period they were

grazing the paddock heavily and some plants were being pulled out.

2) Kelvin Ridgeway

Location: About 40 km north of Albany

Enterprise: Cattle and sheep with some cropping and pasture seed production

Species selection: Resolute tall fescue over sown with Italian rye grass (1 year later)

Sowing time: August 2006

Area sown: 25 ha

Soil type: Deep sandy duplex with some wet areas

Rainfall: 580 mm

Aim of plantings: To extend the growing season and utilise wet portions of the paddock and potentially cut hay and seed. Also to use as a demonstration and field day site.

Results so far: The paddock was planted in 2006 with careful attention paid to soil fertility and weed control. A double knock was used to clean the paddock and the planting done using a no-till disc machine at a rate of 12 kg/ha and rolled.

Establishment was excellent with very high plant densities achieved. The paddock was initially not grazed for 12 months and was allowed to thicken up and establish. Some hay was cut from the paddock. In 2007 cattle were put onto the paddock. This was a dry year, however the stand grew well and has maintained its density.

The year after establishment, the paddock was seeded with ryegrass and clover using a no-till disc machine. This proved to be successful with no apparent loss of plant density. The



Resolute fescue at Kelvin Ridgeway's, Narrikup 20/05/2008.

Continued

resolute is extremely productive on the site and is now well established. Rotational grazing is used.

Management issues: For the first 1.5 to 2 years the paddock was fairly sensitive, with some plants being pulled out by the cattle. This was mainly due to the very dry conditions. 2006 and 2007 were dry with no summer rain and this resulted in the sandy soil drying out. Now the plants are well anchored and growing vigorously with subsequent grazing showing no impact from the grazing cattle.

3) Brad Cluett

Location: About 50 km north of Albany

Enterprise: Sheep production with 30% cropped

Species selection: Lucerne

Sowing time: August 2005

Area sown: 20 ha

Soil type: Well drained sandy loam

Rainfall: 550 mm

Aim of plantings: To provide high quality out of season feed.

Results so far: The paddock was planted in August 2005, using a combine with knife points. A double knock was used for weed and insect control. Additionally, the paddock was scarified and harrowed twice.

Establishment was fantastic with plant densities well over 50-60 plants/m². The paddock is rotationally grazed, primarily with finishing lambs.

Management issues: The paddock has proven to be very productive despite concerns that the site may be too wet. The issue that has impacted heavily on the paddock has been



Brad in a thick lucerne paddock in 2006.

lucerne weevil. This pest usually affects small patches which then gradually grow in size. However in this case, the damage was wide spread.

In winter 2007 the plant density was fine, but as summer arrived the plants started to rapidly decline and within 2 months the lucerne was dead in all but one corner of the paddock.

The paddock was put into oats in 2008. The lucerne was very productive but the paddock may go into kikuyu in the future given its success on other parts of the farm.

4) Barry Pierce

Location: About 70 km north of Albany

Enterprise: Sheep (prime lambs) with 30% cropped and cattle

Species selection: Resolute tall fescue sown with lucerne

Sowing time: August 2005

Area sown: 30 ha

Soil type: Well drained sandy gravel grading to shallow waterlogged duplex

Rainfall: 500 mm

Aim of plantings: to provide high quality out of season feed, utilise wet areas of the paddock and out of season rainfall.

Results so far: a mix of 4 kg/ha of lucerne and 7 kg/ha of fescue was planted using a no-till machine. The paddock had been in a cropping rotation. This helped to clean up annual grasses and set the paddock up for perennials. A double knock was used to control weeds and the paddock sprayed for red mite.

Germination of both the fescue and lucerne was excellent with a good even distribution of both. 2005 was a wet year, but 2006 was much drier. The lucerne was able to handle the dry conditions very well but the fescue struggled and in many parts started to fade.

The paddock is very impressive and the lucerne in particular has grown extremely well. Fescue is still evident in the lower wetter portions of the paddock, showing it has good waterlogging tolerance.

Management issues: Managing the fescue and lucerne together was tricky initially. The lucerne emerged and grew faster and though it needed grazing, it had to be deferred to allow the fescue to establish. As time has gone on the fescue component has declined, most likely due to the dry seasons experienced since 2005. Lucerne would now make up 95% of the perennial component.

Warren EverGraze Field Days

Paul Omodei, agVivo (with thanks to Greg O'Reilly, Department of Water), Manjimup, Ph: (08) 9777 2980.

During October, about 50 farmers and consultants hit the road on two jam-packed days of perennial pasture field walks in the Manjimup and Kojonup districts. The days were part of the EverGraze Supporting Site Project, of which a major focus is the priority water resource of the Warren River catchment.

What they saw

Visiting a total of ten sites over the two days and covering more than 500 km, a large range of perennial pasture systems were examined and discussed. On the Manjimup field day the sites included tall wheatgrass, kikuyu, summer-active tall fescue and oats (fodder) over lucerne, all of which were very impressive.

The Manjimup day also took in a visit to the Manjimup Pasture Group variety trial, where more than 70 varieties of annual and perennial pasture varieties had been sown to provide data on the production potential of the different varieties.

At Kojonup the bus visited kikuyu, a chicory and lucerne mix, pasture cropping over lucerne, and tall wheat grass, old man and river saltbush planted strategically on a severely saline and waterlogged soil.

What they heard

On hand to provide an abundance of practical on-farm advice on establishing and managing perennial pastures were a range of guests who included Sam Taylor of agVivo, Neil and Leigh Ballard of Ballard Seeds, Morgan Sounness from Gnowellen and Brent Pritchard from Elders.

Host farmers also shared their experiences which they had gained through trial and error and also their production data. Many of these featured in the last issue of this newsletter.

Attendees at the field days were able to gain a first-hand insight into the amount of production these sites had provided. The production figures the producers cited really blew some people away – along with the consensus that some sites had been undergrazed!

Backgrounding

Erin and Thys Gorter, Moberup, provided a detailed breakdown of the costs of establishing lucerne and chicory for backgrounding prime lambs prior to feedlot entry versus the cost of feeding pellets. By the end of the first grazing season with the chicory and lucerne mix, lambs gained weight faster and were in the feedlot for 2-3 weeks less time than those backgrounded on pellets. They had consumed a total of 11,000 kg of dry matter from the 35 hectare site, which had an annual establishment cost of \$2,940. Compared to pellets, costing \$360/t in the silo, the dry matter equivalent eaten by the lambs



Morgan Sounness discusses the finer points of kikuyu seed at Jim and Lorraine Dorrell's 2007 kikuyu near Manjimup during the recent EverGraze field day on 10th October 2008.

would have cost \$4,400 to background them. A significant cost saving.

Pasture Cropping

Jane Trethowan was kind enough to impart all she could about pasture cropping over lucerne, and she knows a lot. She and husband Nick have been trialling lucerne for about 9 years. First, they had to learn how to grow it, how to manage it and how to graze it. Following a few mistakes, they felt confident enough to try cropping over the top of it. They began with canola, then oats and this year Baudin barley. The knockdown used was a cost effective application of 1.2 L/ha Sprayseed, which slowed the lucerne down but did not kill it. They were going to pull up stumps and rest the paddock in 2009 but Wedgetail Wheat is looking a bit too enticing. This could be an excellent paddock for lambing ewes.

Jane showed us another paddock of lucerne that had been sown at the same time but never cropped over. We were more than enthusiastic to compare the two, as we anticipated that three consecutive years of pasture cropping would have reduced plant density. Not that we could see! This got everyone really excited.

Salt tolerant species

At the Kojonup field day, Lyn Mathwin was kind enough to take a break from drafting lambs to share with us her philosophy on re-claiming salt affected land. She's defied critics and planted saltbush west of the Albany highway with some success. Her success has been credited to the strategic planting (upstream) of tall wheat grass and using the old man and river saltbush in mounded rows with the 4 m inter-

Continued



Manjimup farmer John Mottram and Sam Taylor, agVivo, discuss the excellent establishment of WL925 lucerne under a 20 kg/ha oats crop on John's farm in 2008. Photo taken 10th October 2008

rows being planted with salt tolerant grass species such as Puccinellia.

What she has achieved is another shining example of how you can use perennial-based pasture systems to complement annual systems and improve profits from livestock. Lyn detailed her management, including a strict practice of rotationally grazing perennial pasture paddocks. Some paddocks may only be grazed twice during the year (depending on species) but this allows for deferment of annual pastures which she sees as critical to her ability to maintain high winter stocking rates. Lambing percentages of one of her merino mobs had increased from a farm average percentage in the low 90's to close to 100 percent as a result of the extra feed and shelter offered at the saltbush site.

Cuckoo about kikuyu

It was hard to contain excitement about kikuyu on the field days and Morgan Sounness, who has a wealth of knowledge on the species, shared this excitement. There were several different sites visited at Manjimup and Kojonup with different methods of establishment. All sites proved to be well established and highly productive. And despite being in the State's 'cold zone', the sites had survived the winter with very little frost damage.

The point to note at both sites was the production of the annual pasture species which were just coming into the spring flush. The presence of the kikuyu had not suppressed the growth of annual pastures in any way, particularly sub clover. If anything, the annual species were overpowering the kikuyu at this time of the year. But summer and autumn is when kikuyu

really comes into its own. Brent Simpson commented he was a bit apprehensive when son Daniel wanted to sow kikuyu. But he could not believe that during the height of summer, when all the other paddocks were brown, there was the kikuyu on the side of the hill still green and still growing. While only a small area, this paddock has maintained a winter stocking rate of wethers almost 30% above their farm average – set stocked since early April 2008. This paddock could also be used by the Simpsons to provide Vitamin E for weaners over summer.

What they took home

As the host, the main message I hope that people took away from the field days was that perennial pastures have a lot to offer and they complement – even boost – annual pasture production. They add value to the annual system by providing specific windows where they fit into a pasture system to take the pressure off other areas of the farming operation (eg. kikuyu providing feed during the autumn gap to take pressure off establishing annual pastures and hand feeding stock). This makes the remaining pasture (annual) systems far more productive and enables them to be better utilised, therefore improving the efficiency (and profitability) of your livestock system.

Perennial pastures are not in the pasture system to replace annual pastures but to add value to them over and above the existing pasture system. Individuals at these field days showed how they tweaked the use of perennials to suit their farming system; be it for grazing, backgrounding, cropping or fodder. The key to fitting perennials into your pasture system is to choose the right perennial pastures for the right place on your farm.

Some field day tips & notes:

- * Right perennial for the right place is the key to making perennials pay on your farm.
- * Annual pasture component (especially sub clover) is a critical component to make money from perennials.
- * Rotational grazing is a must do for persistence of most perennials. Kikuyu is an exception.
- * Perennials and cropping do complement each other in the Great Southern region.
- * Lucerne density does not necessarily decrease in a cropping phase provided it is managed over the summer. Graze it when at 10% flowering.
- * Don't compromise on weed control prior to establishing perennials.

Farmers experience with lucerne

Perry Dolling, DAFWA and WALG, Katanning, Ph: (08) 9821 3261.

In 2007 I interviewed 25 farmers who had experience and had been growing lucerne for many years. We wanted to find out the advantages and disadvantages of growing lucerne and how best to establish and manage lucerne. This information would be used to help new lucerne growers. The interviews were from farmers in the low-medium rainfall zone, ranging from 325 to 510 mm, and from Buntine in the north to Borden in the south and Kojonup in the west to Ravensthorpe in the east. The average area of lucerne per farm was 430 ha, which was 25% of the pasture area, but there was a large range from 0 to 2000 ha of lucerne.

Advantages of lucerne

The three main advantages of lucerne were:

1) *Supplying feed to livestock*

The opportunity for out of season grazing and/or hay production is seen as an advantage even though it does not occur regularly. Large rainfall events spoil the value of any dry feed, however lucerne grows. The out of season production can then provide opportunity to mate on green feed, lamb earlier, turn off lambs and shippers, grow replacement sheep or produce quality wool with low vegetable matter. The quality of the feed, especially in a mixed pasture, is advantageous in every season even if there is minimal rain during the non-growing season (as a small amount of green feed can improve the health of livestock). The ability to graze early in the growing season allows annual pastures to be deferred while they germinate and other paddocks go into crop. Production at the end of the growing season is also of value after the annual pastures die and before crop stubbles are available.

2) *Increased water use relative to annual crops and pastures*

This then prevents waterlogging and salinity, decreases ground water rise and allows the farmers to drive over the paddocks without getting bogged (even in a wet year).

3) *Set of advantages associated with the cropping phase*

This is mainly due to improved nitrogen status of the soil due to nitrogen fixation by lucerne, with one farmer saying that it adds more nitrogen than subterranean clover. The ability to control weeds, especially herbicide resistant weeds, is also a large advantage. Controlling weeds (summer and winter weeds) is a combination of a wider range of herbicide tolerance relative to annual pasture legumes, the competitive ability of lucerne and the longer length of pasture phase,



giving more opportunities to control weeds. Many farmers also valued the ability of lucerne to break up hard pans, creating pathways in the soil to benefit crop roots and improve soil structure. Some farmers also valued the ability of lucerne to recycle nutrients from the subsoil to the surface soil and to reduce the risk of frost affecting production.

Other advantages listed by farmers included that it looks good in summer when all the other pasture is dead and dry but lucerne is still green, it does not burn, it is a robust perennial legume which is very hard to kill, it is relatively tolerant to insects, you do not have to re-sow it every year, it stops wind erosion on sandy soils and lucerne and medics co-exist very well. Also it withstands false breaks unlike subterranean clover. For one farmer, lucerne improved water infiltration.

Disadvantages of lucerne

All of the farmers said that the advantages outweighed the disadvantages, and the disadvantages could be managed. However, they are issues that farmers need to be aware of. The four main disadvantages were:

1) *Establishment costs*

The cost of establishment is considered to be high but similar to the cost of establishing annual pasture legumes. There is also an opportunity cost as production is low until the following year unless out-of-season rain occurs. As a consequence, some farmers establish under a cover crop but that increases the risk of establishment failure or part failure. Cover cropping also allows a greater area to be sown to lucerne due to the greater return. Lucerne can be difficult to establish so there is a risk of establishment failure, and good management is needed to achieve success. Lucerne does not compete well with weeds, is vulnerable to insects and on some soil types it is vulnerable to wind erosion or susceptible to dry finishes or waterlogging. In addition, it extends the planting period after cropping and some farmers find this a pain.

Continued

2) Soil issues

Firstly, there is the potential for wind erosion in dry summers as sheep walk between the rows of lucerne. The risk is greatest if the paddock is over grazed, there is no annual pasture residue, and if the density has thinned. Farmers find that lucerne does not hold soil together like grasses. Secondly, there is a risk of soil compaction, especially on heavy soils when wet, resulting in increased run off. Thirdly, it can not handle waterlogging.

3) Cropping phase issues

Firstly, removing the lucerne is difficult and expensive. Secondly, the lucerne can dry the soil out too much, which reduces grain yield in a dry season for the first crop after lucerne. The benefits of lucerne to cropping (such as nitrogen input) rely on good seasons after the lucerne phase. Thirdly, you have to rethink the cropping program as you lose some flexibility with lucerne. You have to leave lucerne in for awhile, and then it can be difficult to spray out paddocks (when good production is still being obtained) to return to cropping.

4) Livestock and grazing issues

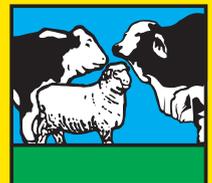
Lucerne requires greater management intensity than annuals, you can not just leave the sheep and forget them. Lucerne can cause livestock disorders including red gut and scouring, and there is a lack of winter production unless you've got a good mix. Sometimes the risk of killing the plants restricts when the farmers can graze, and you can not set stock it. Often there is not enough production (or insufficient area) in summer for the animals to stay on lucerne and enjoy an even plane of nutrition. With pure stands, you go from a flush of feed to no feed. In a good year it is difficult to keep the stock up to utilize its potential and it dries up and drops its leaves. When the lucerne has dried the soil then it responds slowly at the start of the growing season especially if the opening rains are light, it also does not allow other plants to germinate.

Establishment and Management experiences will be published in the March 2009 edition of the Evergreen newsletter.

This work was supported by GRDC and Future Farm Industries and WA Lucerne Growers.

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Great opportunity to grow Superdan for Export!

Andrew Bolt, Hay Australia, Ph: (08) 9571 0000.

Hay Australia stores, processes and markets premium quality oaten hay to the beef and dairy industries of Japan, Korea and other Asian countries.

The Australian hay export industry exists due to the intensive nature of farming in these Asian countries, their strategic requirement for food security and food safety, and the inability of their domestic farming systems to produce sufficient quantity of high quality fodder.

The Australian industry has been operating for 20 years and is built on exporting volumes of around 6-700,000 tonnes of oaten hay and straw. The main competitors in these markets are west-coast USA exporters who export mainly Alfalfa, Timothy, Sudan hay and various straw products.

Hay Australia has identified an exciting and long-term opportunity to produce and market Superdan (a sorghum type) export quality hay to its existing markets. Trial shipments have been conducted and there is strong interest for Hay Australia to grow its production base, indeed the market for sudan grass in Japan is 300,000 tonnes annually.

Superdan is a summer active C4 grass, with expected yields of 14-18 t/ha under irrigation. Irrigated Superdan would be the only method accepted for export hay, with quality requirements for the hay being high.

These quality attributes would importantly include being fine stemmed and leafy, good visual appearance with no weather damage or moulds.

There are several existing Superdan hay producers who contract a known price and volume with Hay Australia. Equipment required is normal broadacre and hay producing equipment on a site suitable for irrigation.

Capital expenditure on an irrigation project can be significant. A key to any irrigation development is the presence of a robust, profitable enterprise that supports the business plan.

Indicative grower pricing for Superdan hay for the 2008-09 year is \$240-\$260/t delivered to the Muchea plant.

We believe this pricing will allow irrigators with 3 phase power and reasonable water pumping costs the ability to return a good gross margin on the summer phase of their system, with other cash crops such as wheat or canola able to be grown over the winter phase.

Through its existing network of customers, the logistical and processing capabilities to handle large volumes of Superdan, combined with an existing, high value, robust market, Hay Australia is well positioned to minimise the risk and maximise returns to its growers.

Growers interested in producing export quality oaten hay are also encouraged to contact Hay Australia to discuss growers requirements.

For further information please contact Andrew Bolt on 0437 710 000, Dennis Berry on 0437 710 073 or the Hay Australia office on 9571 000.

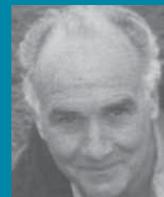
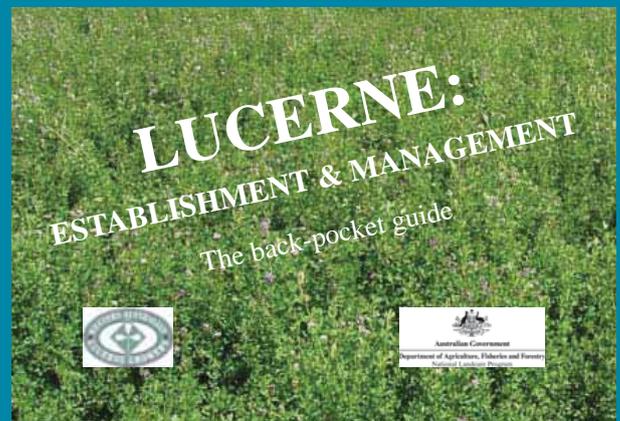
Lucerne Guide coming to a back pocket near you?

The Lucerne Back Pocket Guide is currently being printed. Copies will be available to members at no charge in January. If you would like a copy please pre order now by email or telephone and we'll send you a copy.

Amongst many other topics the guide covers the role of lucerne, establishment, site selection, variety selection, weed control, sowing time, nutrition, insects and management in an easy to read format suitable for the glove box (or your back-pocket).

The guide is based on many years of practical use and research by WA Lucerne Growers, now part of Evergreen Farming. The main authors have been Dr Perry Dolling, Tom Bailey and Sam Taylor plus many other contributors.

Funded by the National Landcare Program



Irrigated Lucerne Hay in the Northern Agricultural Region

David Cameron, Elders, Moora, Ph; (08) 9651 1308.

It was good to participate in the recent Hay Australia field day attended by irrigators and potential irrigators from Gingin and Dandaragan shires. The people at Hay Australia have identified markets for both lucerne and sudan grass hay which have not been accessible to Western Australian growers previously. Local producers who have been left competing in a small domestic market now have an exporter wanting to move their product into the rapidly expanding Asian market. As a rough guide, the demand for fodder for dairy and meat production will see the farm gate price for lucerne hay reach \$350/t and sudan grass hay reach \$250/t.



Masa Urago (Hay Australia) assesses lucerne hay quality at Valken DeVilliers farm at Gingin.

Irrigation is required to make the grade with these crops, and the viability of the irrigation project depends on the cost of the water. With many water licences being developed in the area to secure this resource - broadacre farmers will find lucerne hay a less labour intensive option than a horticultural enterprise. Lucerne hay production should not be entered into lightly though, as it requires more intensive management over the warmer months when baling occurs. Quality is key, and it requires nights to be worked during the summer when baling must be performed at the correct humidity. It can also be capital intensive. The closer you are to the coast, the less baling time there is in any 24 hour period, and the more there is to spend on baling machinery.

New technology is coming to assist with quality. For example conditioning agents such as Hay Rite, a bacterial product from Becker Underwood, reduce drying time and limits leaf loss.

The cost of the water is what will limit the profitability of lucerne hay production. Currently, the cost of pumping water dictates the cost of the water. In short, the deeper the water,

the higher the pumping costs, and the less profitable the crop. Gross margins are easy to calculate, but it is evident that the impending increase in electricity price is going to reduce the viability of some lucerne projects. This is especially the case when combined with an increase in fertiliser prices, which is required in large volumes by this crop.

Experience with irrigated lucerne hay in the north is growing. For example, we are finding that seeding rates as high as 25 kg/ha are justifiable on non wetting sand and that double rates of inoculant are superior. There are benefits to establishment by autumn sowing when wind is less of an issue. On the sands, Manganese is a priority and should be added to the Super Potash which is spread after each cut.

In the past irrigators have tended to use less winter active varieties, however the more winter active variety WL 925 has been persisting well in this environment and provides between 6 and 7 cuts a year. The hay quality from this variety is comparable with the less winter active varieties which have a reputation for quality given a lower leaf:stem ratio.

Anything involving irrigation is expensive. You must do your homework. The whole project needs to be planned, from the bore through to the sprinkler package required for the crop being grown. Expertise with irrigation and irrigated crops may appear hard to find at first, but it is out there, and you would be wise to utilise it.

Of interest is the expansion of potato production into the Dandaragan shire. If you are considering developing water, there is potential to grow potatoes in the year prior to establishing the lucerne. This captures a disease free year for the potato grower, and helps supply some background nutrients ahead of the lucerne crop.



Rob Kuzich (Rob Kuzich & Co) spoke about the need to get the irrigation system right from the start.

"Show us your grass"



National Landcare Award winners

Rob and Caroline Rex of Beaufort River scooped the pool recently when they won the Landcare Primary Producer Award at the National Landcare Awards in Canberra. They are pictured here with actor Jack Thompson after receiving their award. Rob and Caroline are deserved winners given their on-going commitment to productive land care, demonstrated by their large scale perennial pasture plantings on the waterlogged and saline Beaufort River flats. Photo 23 Oct 08 courtesy Landcare Australia.



NACC Measures Soil Carbon

The Northern Agricultural Catchment Council is benchmarking soil health on a large number of paddocks prior to perennial pasture establishment. They plan to re-test these paddocks in 5 years time, when the perennials have had time to make an impact. Soil carbon is a major focus given the potential for agriculture to be involved in carbon trading. In this photo, Surender Mann, Chemistry Centre, takes bulk density samples while Steve Norrie, Ecoprobe, take soil cores on some poor sand at Gillingarra. Photo Jane Bradley, NACC.



Kikuyu in the Cold Zone

At the recent EverGraze bus trip in Kojonup, attendees saw this excellent kikuyu stand at Daniel Simpson's farm. Sowing a summer active subtropical grass in the cold Great Southern might seem a bit odd, but an ever increasing number of producers are using it with great success, especially on lighter sands. Photo 14 Oct 08 courtesy Greg O'Reilly, Department of Water.



Alternate Row Sowing

Erin and Thys Gorter of Kojonup have previously had success with a chicory and lucerne mix. So this spring they planted more on some gravely country. As the photo shows, each species was sown in alternate rows to minimise the competition between them at establishment. A bit of duct tape in the seed boxes was all it took! Photo 23 Oct 08.