Sustainability Snapshots

Volume 1, Issue 7 October 2009

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Diary Note

Mallee Sustainable Farming Inc. Annual General Meeting

Friday 23rd October, 2009
1.30pm
Hotel Mildura
Eighth Street, Mildura

Dryland Juncea: another tool for the tool box.

On Monday 21 September, a crop walk was held 8km south of Woomelang by Smorgon Fuels outlining the potential that Dryland Juncea has as a break crop that can be grown in low rainfall environments and used as an alternative fuel source. *Brassica juncea* is different to condiment mustard in both end use and agronomy, hence the term Juncea Canola or Dryland Juncea. It has low erucic acid levels, moderate oleic acid levels and low glucosinolate levels producing a product that can be considered equivalent to canola. The advantages of Dryland Juncea over canola include more vigorous seedling growth, quicker ground covering ability, greater tolerance to heat and drought and enhanced resistance to blackleg fungus. The seed pods of Dryland Juncea shatter less readily and potentially contain a higher percentage of oil and protein due to the yellow seed coat which is thinner.

Growers inspecting Dryland Juncea at Woomelang

Fuel companies have already 'tested the waters' in the Mallee with a number of producers growing *Brassica* species for the fuel industry. Smorgon Fuels are one such company who are looking at expanding the number of hectares being grown under Dryland Juncea in the Mallee in the coming year (2010). Their latest product is called BioMax Biodiesel which primarily uses raw materials such as animal fats, canola oil and now Brassica Juncea (Dryland Juncea) to produce biodiesel.

Smorgon Fuels are interested in hearing from any growers who may be considering this alternative income source. Contact them on 03 8360 0600 or visit www.biomaxfuels.com.au.

Kat Kenny
MSF Project Officer

NSW Catchment Management Authority Incentives

The Lower Murray Darling Catchment Management Authority in partnership with Caring for our Country have a range of incentives to encourage best management practice on farm.

Improving Land Management Practices (Cropping) Incentive

Improving land Management Practices (Grazing)

These incentives will encourage the adoption of land management practices which will improve on-farm productivity while slowing land degradation processes and increasing the resilience of farms and agricultural landscapes to climate change.

Increasing Landscape Conservation Incentive

The specific aim of this incentive round is to increase landscape scale conservation and adoption of activities to conserve and protect biodiversity in priority woodlands. As part of this incentive, monitoring of vegetation condition, soil erosion and other parameters to determine the effectiveness of activities is a criterion to be assessed for the life of the project.

Further information on these incentives is available from www.lmd.cma.nsw.gov.au or 03 5021 9460.

Evercrop explores low risk lucerne establishment for the Mallee

The following research is taking place in EverCrop, which is a national Future Farm Industries CRC project.

Lucerne can deliver many benefits to mixed farming systems including greater drought tolerance achieved from its deep tap root; ability to convert summer rainfall into high quality feed; and the supply of large amounts of nitrogen to following crops. Up to 80% of arable Mallee soils are suitable for lucerne, yet adoption remains low. Recent farmer survey work conducted by DPI – Victoria, showed the risk of establishment failure as a major constraint to the adoption of lucerne by mixed cropping and livestock farmers in the Mallee region. In response to farmer concerns regarding establishment failure, the Low Rainfall Evercrop project has been exploring different strategies for enhancing lucerne establishment to facilitate greater adoption, and this is an adaption of a tried and true method for the Mallee.

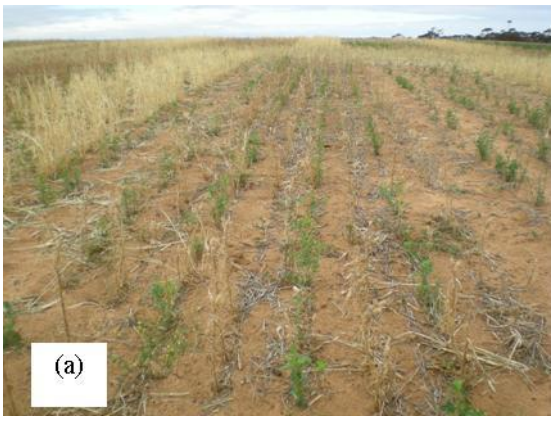

Figure 1(a). *Lucerne established in alternate rows to lupins.*

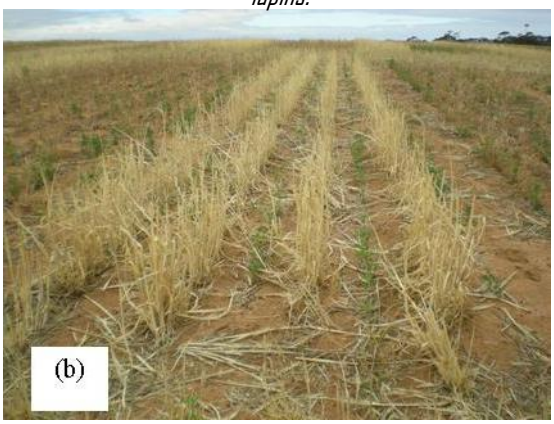

Figure 1 (b). *Lucerne established in alternate rows to barley.*

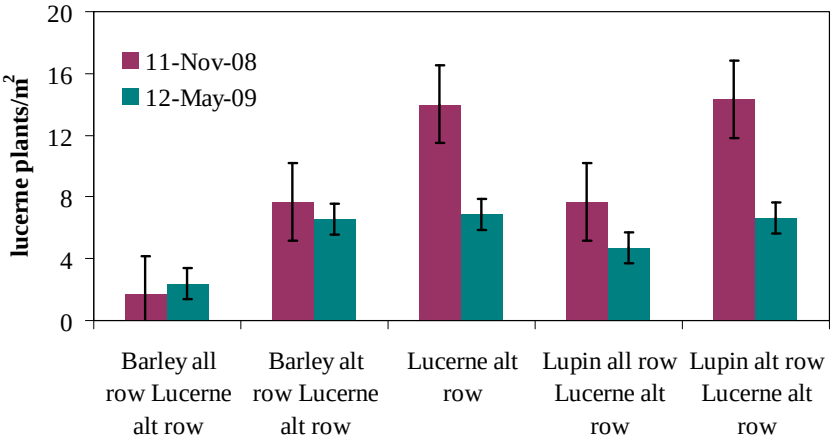

Figure 2. *Lucerne plant populations measured on the 11 November 2008 and 12 May 2009 at Walpeup under different lucerne establishment strategies.*

Field research commenced last year and was designed to investigate if cover crops (seeding two or more plant species simultaneously) could provide income in the year of establishment while protecting the lucerne seedlings from sand blasting during windy events. On the down side, the use of cover crops might out-compete the lucerne thereby compromising its establishment. So a field experiment was sown at DPI – Walpeup in June 2008 where lucerne was established under lupin and barley cover crops at different spatial plant arrangements, and compared with lupin, barley and lucerne sown in monoculture to determine if plant competition could be mitigated.

Initial plant population data showed that establishing lucerne in alternate rows to a lupin cover crop, produced lucerne plant populations equivalent to those achieved where lucerne was sown alone (see Figure 2). Initial lucerne populations were lower where lucerne was sown in the same seeding row as a lupin cover crop and in alternate rows to the barley cover crop and even lower where lucerne was sown in the same seeding row as the barley cover crop, compared with lucerne sown alone (see Figure 1 and 2). Superior lucerne establishment achieved under an alternate row sown lupin cover crop was mainly due to less competition from the lupin compared with the barley cover crop; competition was further reduced through alternate row sowing by providing greater distance between the competing lupin cover crop and establishing lucerne seedlings. Furthermore lupin cover crops allow the use of additional pre-emergent herbicide (eg. simazine) for controlling grasses and broadleaf weeds, which is not suitable in barley crops.

Over the first summer after establishment, lucerne populations declined more rapidly where lucerne had been sown alone and in alternate seeding rows to the lupin cover crop, compared with the other lucerne establishment strategies (see Figure 2). This decline came about from dry conditions experienced over the second half of the 2008/09 summer, when only 7 mm of rainfall was recorded from the beginning of January to the end of March.

.....cont page 3

Evercrop *(cont from page 3)*

Grain yields from cover crops and crops sown alone were low based on only 115 mm of growing season rainfall (April – October) in 2008. Yields were unaffected by the presence of lucerne seedlings, as the barley and lupin cover crops achieved similar yields to barley and lupin sown in monoculture (see Figure 3), highlighting the potential to establish lucerne without penalising grain yield from the cover crop.

An identical field experiment to that established last year, is now being repeated again this season at DPI- Walpeup, to further evaluate the cover crop approach for establishing lucerne in the Mallee region. The Low Rainfall Evercrop project also plans to conduct further field trials testing the cover crop concept over a broader geographical area, by moving into more marginal cropping areas of the Mallee. Plans are underway to establish an Evercrop site at Werrimul (the Northern Victorian Mallee) through collaboration with the Mallee Catchment Management Authority. Kevin Chaplin, from the Mallee CMA is working with a group of farmers keen to investigate and learn more about the potential role that perennial pastures might offer to their farming systems.

Patricia Hill
Agricultural Landscapes Program
CSIRO Sustainable Ecosystems

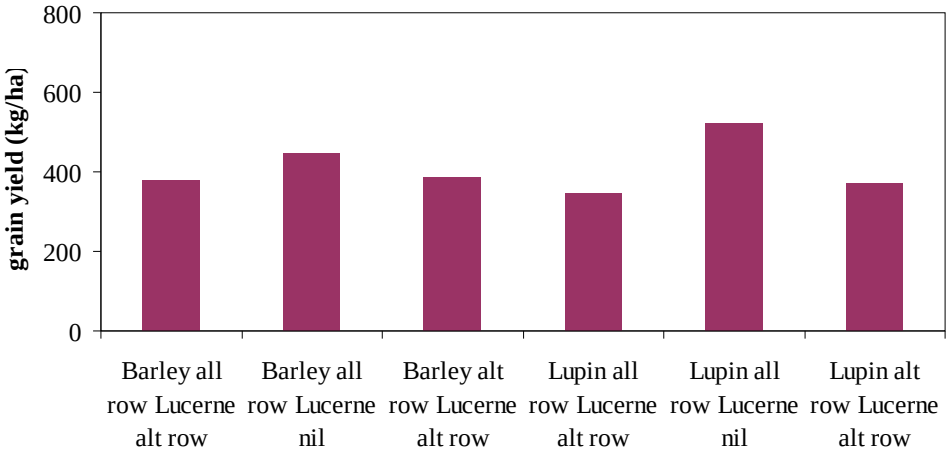

Figure 3. *Grain yield measure on 24 November at Walpeup from lupin and barley sown as cover crops with lucerne and sown alone in monoculture.*

Integrated Weed Management

Integrated weed management (IWM) workshops involving leading Australian herbicide and weed management experts Chris Preston and Andrew Storrie are being scheduled for March next year. This is part of a large IWM project involving MSF that includes the herbicide trial established at the Waikerie MSF site by the University of Adelaide's Peter Boutsalis and CSIRO's Bill Davoren.Developing sustainable grass week control options for intensive cereal cropping is one part of MSF's strategy for improving Water Use Efficiency across the Mallee.

Recognising Women Farmers: Final Workshop

Murray Bridge is the final venue for the successful seminar series, *Recognising Women Farmers.*

MSF and Focus Consulting have been running free seminars in the three Mallee states aimed at developing the skills of women in the agricultural sector.

The seminars have included many aspects of Certificate IV in Corporate Governance as well as management and leadership skills.

The final seminar will be held on Saturday 24th October from 9.30 am to 4pm.

For more information contact Focus Consulting on 03 5022 1859.

Mallee Growing Season Rainfall

The table below show rainfall figures for 1st April to 19th October, 2009.

Balranald	135.9 mm
Hay	171.0 mm
Hopetoun	183.2 mm
Karoonda	242.0 mm
Lake Victoria	150.5 mm
Lameroo	240.0 mm
Loxton	128.4 mm
Mildura	127.2 mm
Murray Bridge	267.5 mm
Ouyen	228.1 mm
Pooncarie	110.6 mm
Renmark	149.2 mm
Swan Hill	185.0 mm
Walpeup	251.2 mm

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