

February 2008

# Profitable Farming

## Strategy

- Heliiothis, midge and rutherghlen bug in sorghum need to be watched!
- Cut fertiliser costs for next winter - see p. 4 of our Sept. News.
- \$400 wheat changes profits and rules out oats! See page 3.

## Contents

Reponses to Climate Change	1
More about midge	2
Beef vs \$400 wheat	3
Labour alternatives	4
La Nina 50:50 chance it will last until July	4



*Climate Change has pushed up the price of wheat but reduced our winter rainfall.*

*Three responses are:*

- 1. Accept and understand it.*
- 2. Make farming more water efficient*
- 3. Reduce greenhouse emissions*

**Horizon Rural Management - 07 4662 4899**

## Responses to climate change

It is less scary talking about climate change now most farms have received good rain. But make no mistake, climate change is with us; it is not something out there in the future. World wheat prices are astronomical due to climate change. Global warming should help Russia and Eastern Europe, but a change in jet streams and blocking highs resulted in rain being dumped on England last year, while drought and record high temperatures ravaged eastern Europe.

Drought in Australia added to the wheat shortfall. We have had drought before, but tropical storms at Newcastle in mid-winter, summer floods in Victoria and the recent deluge over Emerald are consistent with the science of global warming and more extreme weather.

The first response of primary producers to Climate Change is to understand it and accept it. It is a big change in thinking, which is easy to resist on the basis we have had drought before. There is a need to get involved and debate the evidence to be comfortable with the need to respond.

The second response is to continue to improve farming systems to make them more water efficient. Climate change is expected to increase rainfall variability and drought in Australia, but agriculture still has room for improvement to more than overcome the expected effects. The average water use efficiency and therefore yield of grain crops is only a little over half the optimum.

Livestock production will also be affected by an increase in heat and drought, and high stocking rates which result in overgrazing cause erosion and a decline in soil carbon. But like cropping there is much potential to double production where pasture improvement is feasible.

Planting leucaena or other legumes can in many situations more than double the production of pastures to keep ahead of climate change over the next 30 years. Rotational grazing is also needed to improve groundcover and the survival of productive pasture species.

The third response which Agriculture needs to make to Climate Change is to reduce greenhouse emissions. Farms emit as much gas as the coal fired power stations in Australia, and will soon be told they need to reduce greenhouse emissions - by as much as 50% by 2050.

Some of the ways to do this will also make money. Storing (rather than depleting) soil carbon, more efficient fuel and fertiliser use, better management of nitrous oxide and methane emissions are all things which will make agriculture more efficient or save costs. Recycling of nutrients from feedlots and big cities is also cheaper than buying fertiliser and could help agriculture meet new targets.

### Practical responses to climate change

Zero tillage is the most important way to improve water use efficiency. At the same time it will minimise soil erosion and the rundown in soil carbon levels.

Breeding of plants with heat and drought tolerance is needed to further improve water use efficiency of cropping systems.

As well as a hotter and drier climate, there is some evidence that winter rainfall has declined more than summer rainfall in southern Queensland. One of the specific responses, which is happening on farms, is the growing of more summer crop and selecting crops like sorghum which have some heat and drought tolerance and planting it earlier (or later in summer) to beat the heat!

*Midge activity is high due to the spread of flowering in late crops. It is worth spending some time to understand them better, says Glenn Milne.*



*Damage of more than half a tonne per hectare has been experienced this year. Be on your guard for late crops.*

*Midge are a difficult insect to keep track of because they live only one day.*

*If they are coming from a nearby paddock, numbers can vary with wind speed and direction and the time of day.*

*Don't try and look for midge too early in the morning or late evening - numbers may be well below the daily maximum which is probably around mid-morning.*

Midge continue to be a problem in late sorghum crops. We have discussed midge in the last two newsletters but farmers are still having problems with midge control and because of the damage they can do in sorghum it is worth trying to understand them better.

Midge activity is high at present which is expected due to the staggered plantings. Midge breed up in sorghum crops and the life cycle can take as little as 14 days from egg to adult midge. This means that a crop which flowers over more than 14 days will breed up its own midge and a wave of new midge will attack the late flowering heads.

Sorghum crops that are flowering from now on are likely to warrant spraying every 3-4 days to prevent economic damage.

To calculate the damage they can do for those who are mathematically inclined; it is a matter of working out how many tonnes per hectare damage they do and the dollar value of sorghum. Adult midge can lay between 30-150 eggs per day with an average of 80 per day.

Research studies show that one midge can cause approximately 1.4 grams of grain damage per day on a midge susceptible variety. This takes into account the compensation by the sorghum head by way of the remaining grains filling up more to make up a little for grains removed.

But if there is more than 40% of the head damaged, the sorghum does not have enough grain left for adequate compensation and the 1.4 gram figure may in fact be higher. It is the larvae that hatches from the egg in the sorghum flower that eats the developing seed causing yield loss.

#### **Midge live only one day**

The female midge which lays the eggs in the sorghum head lives for only one day. Therefore when sorghum heads are flowering midge activity monitoring needs to be done daily as the midge activity will vary and can change from one day to the next. Don't check midge too early. On cool mornings, the midge take a while to emerge and will buildup in numbers until about mid-morning.

If the midge are flying from a nearby crop, then the wind speed and direction will make a difference to numbers in your crop.

#### **Residual lasts 3-4 days**

A sorghum head takes a few days to emerge and around 3-4 days to flower - you can see the progress of the yellow pollen sacs as they turn brown.

Sprays will only provide 3-4 days of residual control, because the heads in flower 4 days after spraying were not emerged to get a cover of spray. This means increasing the rate of chemical does not increase the residual effect.

Residual (Res) effects of the insecticide are considered in the damage calculation.

#### **Midge Damage calculations**

The higher the Midge Resistant Rating (MR) the less midge damage a variety will sustain from one midge. The midge finds it harder to lay eggs in a MR variety, and the eggs may not hatch as readily.

Midge damage per day (\$/Ha) = 1.4 gm \* No. of midge per head \* Susceptible Heads/Ha \* Sorghum Price (\$/T) \* 3 (Res) / 1,000,000 (gm to tonnes) \* Midge Rating

An example - 1 midge per head, Variety 85G08 or Buster: MR = 4, Sorghum \$250/t, 50,000 susceptible heads per hectare, using a pyrethroid with 3 days residual.

$1.4 * 1 * 50,000 * \$250.00 * 3 / 1,000,000 * 4 = \$13.13/\text{ha}$  damage over three days.

So, even with a midge rating of 4 midge can have \$14 / ha damage over 3 days with just over one midge per head. The high price of sorghum makes it sensitive.

#### **Be on your guard.**

Some growers have already been surprised at the damage to sorghum with only a few midge present. Applications need to be made every 3-4 days apart to protect new heads which emerge. This may be expensive when you have to use a plane, however losing 1/2 tonne per hectare of sorghum equates to \$125.00.

**Where will wheat go?**

Wheat prices have passed the \$US10/bu level which is \$US378 or \$A420/t. The world wheat larder is basically bare and while planted area will be up for the 2008 crop, there are already some production problems emerging. Some commentators are saying the market has overreacted and will cool by harvest time, but if weather problems affect wheat yields the price could stay high.

**Grain profitability rises with price**

The comparison of 2006 and 2008 (see table) shows the effect of price on profit, which has risen almost 700% to \$675/ha.

In many cultivation paddocks there is already a good profile of soil moisture and a yield over a tonne per acre is not huge at all. If there is 180mm of soil moisture at planting time and 120 mm of in-crop rainfall, the yield from 300mm of moisture should be around 3.6 t/ha (at 12 kg/ha/mm) for wheat planted at the optimum time in May. Wheat planted in early June with the same rainfall should reach 3 t/ha, with a profit over \$750/ha.

By comparison the profit from oats is estimated at \$8/ha.

**Improved pasture**

The profit from pasture of \$170/ha is higher than oats because costs are much lower. Over the past few years, profits from pasture have been better than wheat and cultivation has gone back into pasture. This trend is likely to be reversed over the next few years.

Pastures are also more soil-friendly than oats, which generally has compaction, low ground cover and increased soil erosion over summer. Pastures on the other hand will build soil structure, increase organic matter and improve fertility if a legume is included.

But why would you plant pasture this year if you can make four times as much profit (with income in November) as pasture? Also, income from pasture is likely to come at a much later date than wheat.

**Sorghum vs wheat**

Sorghum has been quite competitive with wheat in recent years, and if the price is around 85% of the wheat price, it would remain so for the Western Downs, while on the Darling Downs it would be more profitable due to higher yields.

But the huge gap in price means sorghum is behind wheat in profitability. The only catch is winter rainfall, which has been notoriously unreliable in recent years. It is still likely that a diversified program with both winter and summer crop will be better than putting all your eggs in the one (wheat) basket.

**Long-term market prices**

The days of making money from oats have gone, due to high costs. Beef prices will improve over the next few years (see Jan News) but for now wheat is king for farmers with profit on their agenda.

*High wheat prices mean profit has soared compared with profit from beef and oats.*



*Improved pasture is more profitable than oats due to lower costs and is more soil friendly.*

*But why would you plant pasture this year if you can make four times the profit per hectare growing wheat?*

Wheat vs oats and pasture - Western Downs					
	Wheat 2006	Wheat 2008	Sorghum 2008	Grazing Oats **	Improved pasture#
YIELD kg/ha	2800	2800	3200	200	168
PRICE \$/t or kg	175	410	220	\$2.00	\$2.00
Return \$/ha	490	1148	704	400	336
Fuel & Repairs	54	68	68	70	30
Fallow Spray	40	55	45	35	0
Seed cost	24	34	22	45	14
Fertiliser	74	90	80	32	0
Herbicide	11	14	25	0	4
Harvest, misc.	44	52	52	70	38
Growing Costs ##	247	313	292	252	83
O'head costs*	145	160	160	140	80
<b>Profit \$/ha</b>	<b>98</b>	<b>675</b>	<b>252</b>	<b>8</b>	<b>170</b>

\* Western Downs: Labour \$64, Machinery \$52, Admin \$44  
 \*\* Grazing oats: 2 steer/ha, 100 days (av. year) = 200kg beef/ha  
 # Pasture: 1 steer - 1.6 ha, 0.75 kg/day x 360 days = 168 kg beef/ha  
 ## Growing costs include a portion of cattle costs of freight, selling etc.

# Profitable Farming

February  
2008

## HORIZON Rural Management

12 Cunningham Street  
Dalby, QLD 4405

Phone: 07 4662 4899

Fax: 07 4662 5184

Email:

profit@horizonrural.com.au

*Peter Wylie is finishing up as a consultant soon and taking up a position as Commodities Manager for the Dalby Bio-Refinery.*

*Peter thanks all those who have supported him over the last 25 years!*

*The monthly newsletters of Horizon Rural Management will continue until June.*

## Alternative solutions for labour

Labour shortages will get worse as mining, gas and power developments increase in southern inland Queensland.

Farmers need to dust up their labour strategies, including being an 'employer of choice' to retain labour they have in competition with jobs off the farm which may offer much higher wages.

An important question to ask is: "Why would someone want to work for me?". All aspects of employment, including training, involvement in the business, job satisfaction, surprise bonuses and improved housing may be important. It may be the little things which count.

But when labour is lacking there may be some other approaches to consider:

1. Having more of the farm work being done by **contractors** is one way to keep going in the face of labour shortages. A contract harvester can free up farm labour to manage the grain at harvest. But contractors need to be wooed and managed along the same lines as labour.
2. **University or college students** on holidays can provide some extra help to catch up on or get jobs which require more labour done. Some of these students come from farms and can be very useful. Most colleges and campuses have notice boards, but the internet is being used in-

creasingly by young people looking for casual and full-time work.

3. **Backpackers** are an important part of the labour force on horticultural farms. Young farmers from overseas may jump at the chance of free board and wages, working on a farm.

Some young people are travelling in pairs on their travels and you might want to offer a job for two people for a while or to work in with a nearby farm to offer a job for two people.

There are backpacker job sites (just google: *farm jobs backpackers*) but another way to attract people is to have your own website with a headline: 'Vacation Jobs' or 'Backpacker Jobs' on it. Some photos and details of the farm will help attract interest.

4. **Casuals** from town may be available to help on occasions with such things as tractor driving. The casuals might be roo-shooters, housewives, high-school students (on weekends) or semi-retired people.

If a cottage is available, it may attract semi-retireds from towns or the big cities for a few weeks in the country, to do some work which may not be full on or full-time.

**The key is innovative thinking and to provide training and job flexibility!!**

## 50:50 chance for the La Nina to remain until July

According to the MEI commentator, the MEI has lifted a little (the La Nina is not as strong as last month) and of the ten years with similar Dec-Jan MEI ranks, nine remained at least weak La Niña events through March-April, while only five continued into the northern summer (June-July), and three cases (1951, 1957, and 1963) switched to weak El Niño conditions by that time.

The US Climate Prediction Centre review of models and statistical SST forecasts for the Niño 3.4 region indicates a moderate-to-strong La Niña through the rest of the Northern

Hemisphere winter (to April), with the likely continuation of a weaker La Niña through until June. Thereafter, there is considerable spread in the models, with approximately one-half indicating La Niña could continue well into the Northern Hemisphere summer.

If the La Nina stays in place it could be significant in terms of improved chances of winter rainfall in Australia and more chance of drought conditions in the southern states of USA over their summer. If there is drought in the US, corn and cotton prices could rise!