Summer croppers - looking forward by looking back

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in a nutshell

- A Summer Crop Review highlighted the important issues of the past cropping season, so management strategies could be refined to be more effective in the next season
- The season was regarded as exceptional for rice with good establishment and good yields achieved
- Soybean yields were excellent across the industry but some crops were affected by a virus, which could possibly be green stem syndrome
- It was a tough season for maize however if plant water requirements were met during the hot season, yields were good and in some cases above average

A number of Murrumbidgee Valley summer crop growers reviewed their crop performance for the 2005–06 season at a Summer Crop Review meeting at Darlington Point and Coleambally in June. Factors that shaped the past season and how to better manage crop issues in the future were discussed.

The last two seasons highlighted how different summer seasons can be from one to the next and how the differences impact on crop performance. The cold temperatures in February 2005 reduced rice yields in the Coleambally Irrigation Area (CIA) and record hot temperatures in January 2006 impacted on maize yields if irrigation demands were not met.

The range of crops grown by a number of croppers in the Darlington Point/Coleambally region shows good cropping management in overcoming the vagaries of our climate. Diversity in summer crops coupled with good marketing skills is the key to risk management of returns.

Overall soybean and maize crops performed well considering the record hot summer conditions (Figure 1). The hot summer season with high night temperatures resulted in record rice yields.

Rice

All rice growers will look back at the 2006 harvest and remember it as an exceptional growing season with record rice yields across all varieties. The Coleambally district average for all varieties was 10 t/ha over 18,000 ha.

Reiziq performed very well at 10.9 t/ha, Amaroo 10.5 t/ha and Langi at 9.8 t/ha. Some individual medium grain paddocks achieved 14 t/ha.

In hindsight some growers felt that rice crops were underdone for nitrogen but after some cold events over the last few years a more conservative approach was taken. In general rice growers said it was one of the best years for establishment with good weed control. Crops however did dry-down very quickly with sustained hot weather in March.

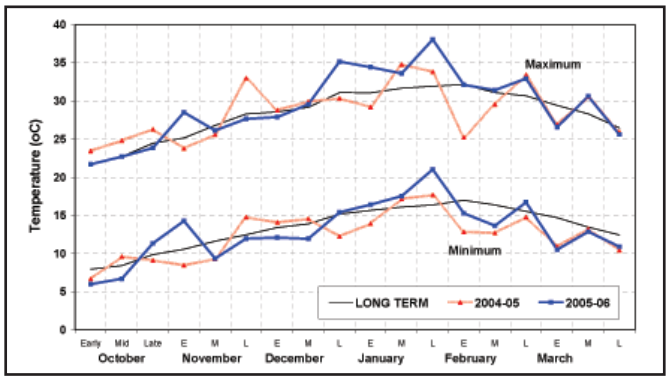

Figure 1: Mean maximum and minimum temperatures at Coleambally – 2004–05, 2005–06 and long-term

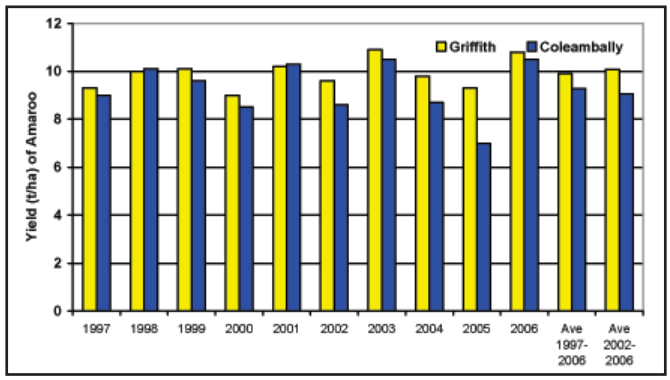

Figure 2: Average yields of Amaroo 1997–2006 for Griffith and Coleambally districts

Soybeans

In southern NSW, the overall area planted to soybeans more then doubled from 2004–05 season. The Riverina crop went from 1570 ha in 2004–05 up to approximately 3650 ha in 2005–06. This equates to about 22% of the NSW crop area. Yield average across entire NSW was 2.3 t/ha last season. Yield average for Murrumbidgee Irrigation Area (MIA) and CIA last season was estimated at 2.8 t/ha.

Overall the 2005–06 season was a good one with excellent commercial yields achieved across the board. There were reports of crops yielding in the range of 4.0–4.6 t/ha in both the CIA and MIA. There were some late sown and poorly established crops which reduced the district's average. The main varieties grown were Djakal and Snowy. This was Snowy's first year in full commercial production.

Generally the yields of Djakal and Snowy are very similar and not significantly different, however Snowy is slightly longer in maturity (3–4 days in pod maturity) and a few extra days for harvest maturity – full drop of leaves. Snowy has a big plus in that it has a different genetic background from Djakal for disease resistance, ie Phytophthora root rot, which is particularly important for the CIA.

Snowy is also the first clear hilum and has reported excellent end-use qualities for tofu markets/premium markets and is highly desirable for export markets. Djakal is still performing as the top variety. It is a robust yielder across all conditions and a range of sowing dates. It is well suited to double cropping fields because of its fast maturity, high yields and very quick dry-down finish.

Other varieties such as Curringa and Bowyer have decreased in planting area, mainly due to their lower yield potential and longer maturity.

Green stem syndrome

This season saw a number of soybean crops with a virus problem thought to be what is called, overseas, green stem syndrome. The disease was first seen in 2001 and there have been a few suspected cases since. This year, samples were confirmed as being infected with the virus.

The disease typically shows as patches of plants (on the edge of crops) staying green at maturity (Figure 3) and having poor pod development. In some cases many pods come from one growing point known as bud proliferation. This symptom can look similar to herbicide damage. Plants affected are difficult to harvest as they remain green and ropey.

Further investigation is required to determine the vector involved and the extent of the problem. Any grower seeing similar symptoms in crops in the coming season should contact the authors of this article.

Pests

There were reports of suspected resistant heliothis causing problems in soybeans, particularly late in the season. Concern was raised that next season growers will not be able to use one of the softer early control options – endosulfan – as it is no longer registered for use in grain crops.

Gaining access and therefore being able to use softer chemical options for heliothis control during the season will be an issue for some growers. If possible growers are encouraged to follow the guidelines of the insecticide resistance management strategy (see below). The full strategy with insecticides that are registered at the start of the season will be available in November this year.

Green vegetable bug was still around and warranted spraying in some crops.

Two-spotted mite flares were also an issue in some crops as nearby maize crops dried down. Chemical control of two-spotted mite is now an option in severe cases with the registration of abamectin (Wizard®) for use in soybeans.

Figure 3: A Djakal crop showing a 'stay green' patch on the edge of the crop as the rest of the crop matures – a typical symptom of green stem syndrome

Key guidelines for insecticide resistance management

1. Cultivate residues of summer crops where *Helicoverpa* spp. were present. Late season crops where pressure was heavy should be especially targeted. Cultivation must be completed before 1 October.
2. Use recommended spray thresholds for the pest species present and growth stage of crop. Eggs or very small larvae (< 5 mm) should be targeted. Larger larvae are unlikely to be controlled.
3. Avoid broad-spectrum sprays early in the season as these kill predators of potential crop pests and may induce outbreaks of pests such as mites and aphids.
4. Where possible alternate insecticide products to avoid consecutive sprays from the same activity group.
5. Do not spray apparent previous control failures with a product from the same activity group.
6. Other important pests may be treated with the appropriate registered insecticide outside that product's recommended strategy stage, provided *Helicoverpa* spp. are not present.

Maize

There was a reduced area of maize in the Riverina last season due to reduced processor requirements. Growers commented that it was a tough season for maize however if plant water requirements were met during the hot season, yields were good and in some cases above average. The dry conditions with low humidity kept diseases such as Fusarium to a minimum.

Growers were reminded of the need to manage crop stress in hot weather as crops can become more prone to disease. Growers made a number of comments that the place of some cultural practices also needs to be closely scrutinised as they may be stressing crops at critical stages. An example of this is allowing bays to dry out to allow access for fertiliser side dressing.

Maize research

Results from a survey conducted at the National Maize conference, held in Griffith in February this year, highlight the areas on which maize research should concentrate:

- the development of new products from maize (biodegradeable plastics, enhanced nutrition, pharmaceuticals, other products for human consumption)
- the economics of different irrigation systems on a variety of soil types
- nitrogen efficiency under the various irrigation regimes
- sources and timing of nitrogen application.

There was a general feeling at the Summer Crop Review meeting that local demonstrations of different irrigation strategies would be of great value to local growers.

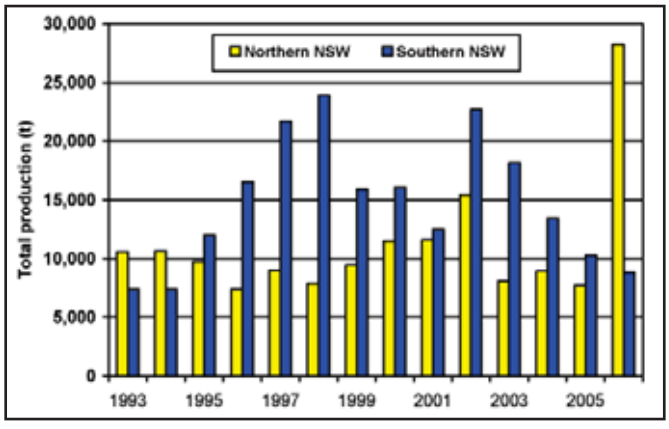

Figure 4: Area planted to maize in northern and southern NSW, 1993–2006

In summary

All growers are encouraged to look closely at the true cost of growing their summer and winter crops. Recent increased input costs make maximising yields through good management even more important. Crop budget templates are available on the NSW DPI website at <www.agric.nsw.gov.au/reader/econ-publications/dpi227fforms.htm>.

Growers can put their own figures into the templates to reflect their own situation. Suggested summer crop gross margins are also available at the DPI website under 'Farm business and trade'.

It is hoped that more summer croppers will take an active part in this annual Summer Crop Review. To share experiences from the last season will help growers and advisors focus on key growing checks as we go into another important summer cropping season.

Further information

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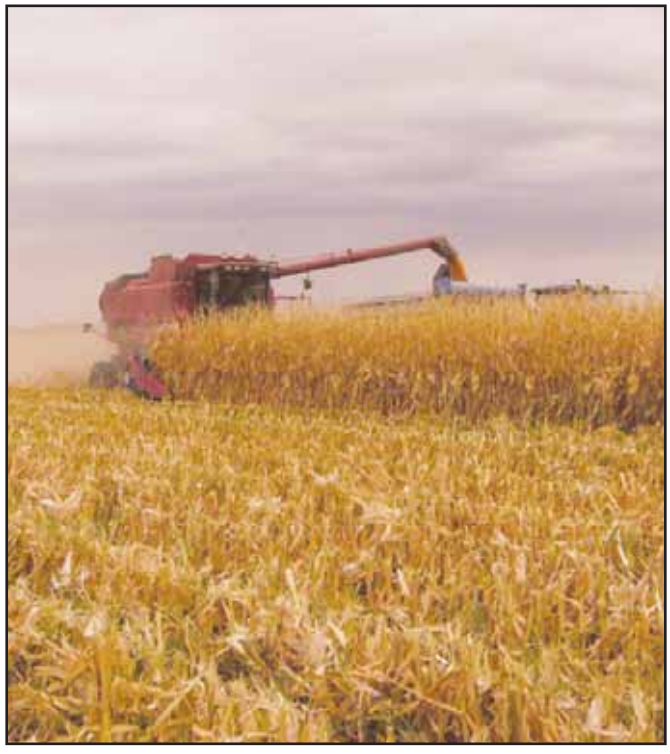

Figure 5: 2005–06 was a tough season for maize, however good yields were achieved if water requirements were met