



Results from the Murrumbidgee Catchment Stubble Management Trials 2006/2007

Background

The Harden Murrumburrah Landcare Group (HMLG) stubble management project, funded through the National Landcare Program and Murrumbidgee CMA, and delivered by the NSW Department of Primary Industries, has investigated management options available to land managers to help minimize cereal stubble burning and allow handling of heavy stubble loads. High levels of stubble pose serious problems for sowing of subsequent crops.

Four commonly used stubble retention and management strategies (retained after normal harvest height, retained after low harvest height, mulched, grazed) were evaluated. Their effects on soil moisture conservation and crop establishment are reported. The report also briefly looks into the effects of various stubble loads on machinery blockages.



Key findings of the 2006 / 2007 Harden Murrumburrah trials:

Once again due to drought conditions stubble loads in the region general were much lower than normal. For example in 2006/2007 there was on average 1-2 t/ha of stubble compared to a potential 5-6 t/ha.

Due to these conditions and the variability of summer storms across the region over the summer of 2006 / 2007 the results were very variable and no clear conclusions can be made. However the following trends were observed and are worth commenting on:

- The moisture from the top 10 cm of soil evaporated away after a four to six weeks of dry period regardless of the stubble treatments.
- Grazed stubble conserved the least soil moisture in the top soil
- Mulched stubble conserved more soil moisture than standing stubble in the top soil but at depth (below 20-30cm) often standing stubble areas had greater soil moisture
- Stubble harvested to a lower height than normal conserved less moisture in the top soil at one site and more at depth but at a second site the opposite happened.
- The bulk density was higher at about 20-30 cm in most sites. This could be due to machinery traffic.
- Plant populations in the crops following the stubble treatments were marginally higher on the grazed areas.
- They were also higher on areas harvested to a lower harvest height than normal.
- Signs of runoff and erosion were found on the grazed areas.
- No blockages were observed with any of the sowing machinery at any of the sites because of low stubble densities.
- Seed placement and covering was also not affected at sowing.
- Press wheels appeared to improve crop establishment where used