



2013/14 Windrow burning observations & thoughts

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GRDC project CWF00018 – Maintaining profitable farming systems with retained stubble in Central West, NSW



During the 2013 harvest Mr Roger Bolte of Wyalong established windrows in paddocks in an attempt to help manage herbicide resistant ryegrass populations. Roger harvested an area in one paddock at a traditional height which was used by CWFS as a control area to measure the effectiveness of his windrowing and burning. Below is a diary of events and management thoughts to show the effectiveness of Roger's work during the 2013 summer and some thoughts based on these observations about managing windrow burning in CWFS districts.

KEY POINTS.

- To effectively establish windrows requires forward planning and potentially slows harvest and increases harvest cost.
- Burn as early as conditions allow. Make it a priority job.
- Small rainfall events may germinate weeds in burnt areas that require attention before the whole paddock area

MANAGEMENT CHOICE

1/ THE DO NOTHING OPTION (CONTROL AREA OF TRIAL)



Picture 1. Traditional harvest (12 December)

TRADITIONAL HARVEST DATA

At Harvest

Rye grass stubble ranged from 0 to 27 plants/square metre. Averaged 6.4 plants per square metre.

Height of standing wheat stubble was 290 mm to 490 mm high with a range of 1420 kg/ha to 2760 kg/ha.

No weight of chaff and split seed could be determined.

2/ DO SOMETHING OPTION

WINDROW AT HARVEST AND BURN



Picture 2: Test windrow (12 December 2013)

1 Windrow represented 13 m of header front

Windrows where 20 cms to 45 cms high

1 metre of windrow contained on average 8202 rye grass seed (100% germination) with a range of 4106 to 13501 seeds

Average weight of stubble and chaff contained in windrows was 4723kg/ha with a range 3699 to 6140 kg/ha

MANAGEMENT THOUGHT: To effectively establish windrows requires forward planning and potentially slows harvest and increases harvest cost.

BURNING DATES

first burn 1 March 2014 100% burn

second burn 9 April 2014 patchy due to wet windrows

No better results were achieved when attempted again on a number of occasions due to wet windrows.



Picture 3: Burnt row 11 March 10 days after burning.



Picture 4: Unburnt windrow 11 March

MANAGEMENT THOUGHT : Burn as early as conditions allow. Make it a priority job.

11 MARCH 2014 observations

In the unburnt windrows, no weed emergence could be observed.

In the burnt windrow area, rye grass was emerging.

In the short stubble areas from where the windrows had been harvested, very patchy wire weed and Paterson's curse had emerged. No rye grass or volunteer wheat.

In the traditionally harvested area off the chaff row, volunteer wheat and ryegrass could be observed.

In the traditionally harvested area on the chaff rows, more advanced volunteer wheat and ryegrass could be observed.

MANAGEMENT THOUGHT : Small rainfall events may germinate weeds in burnt areas that require attention before the whole paddock area

9 JUNE 2014 observations

The paddock had been sown to vetch with a knock down herbicide which achieved a good kill of emerged ryegrass seedlings. Rye grass was emerging post sowing but no post sowing herbicides had been applied.

In a 30 cm strip along the edge of the windrows burnt 1st March 2014, an average of 97 seedlings (with a range of 13 to 277) per square metre where observed.

No seedlings where observed in the burnt areas of the windrow.

In the windrowed area outside of the burnt strip, an average of 53 seedlings (with a range of 3 to 187) per square metre where observed.

In the traditionally harvested stubble area, an average of 180 seedlings (with a range of 40 to 353) per square metre where observed.

PUTTING NUMBERS TO THE EFFORT:

At harvest, I had a rye grass population averaging 6.4 plants per square metre ranging from 0 to 27 plants/square metre that had survived all my attempts to kill in the previous crop.

If I harvested the paddock traditionally, for every 1 metre my header travelled it would have spread on average 8202 of herbicide resistant rye grass seed (100% germination) with a range of 4106 to 13501 seeds back over the paddock. This seeding rate resulted in 180 seedlings (with a range of 40 to 353) per square metre emerging post sowing ready for me to attempt to control with in-crop sprays.

I organised myself and harvested the paddock, and put the header residue into narrow windrows which I burnt as soon as I could. When my first in-crop spray was due, 92% of my paddock had 53 rye grass seedlings (with a range of 3 to 187) per square metre. A long narrow strip representing 8% of the paddock had 97 ryegrass seedlings (with a range of 13 to 277) per square metre which I could potentially spray differently.

Rogers' comment: EVEN GIVEN THE EFFORT AND EXTRA COST, I THINK I HAD A WIN LAST SEASON!



Picture 5: View along a burnt windrow in established crop

ACKNOWLEDGEMENTS:

Central West Farming Systems would like to acknowledge Roger Bolte's support of this trial. His commitment and effort in leaving a nil treatment plot in his paddock during harvest and establishment of windrows to manage weed seed numbers is a major contribution to research and development within the local grains industry and CWFS.