

# Brome Grass Harvest Management



Government of South Australia  
Northern and Yorke Natural  
Resources Management Board

**AIM:** To assess Brome Grass populations in the year following different cultural practices

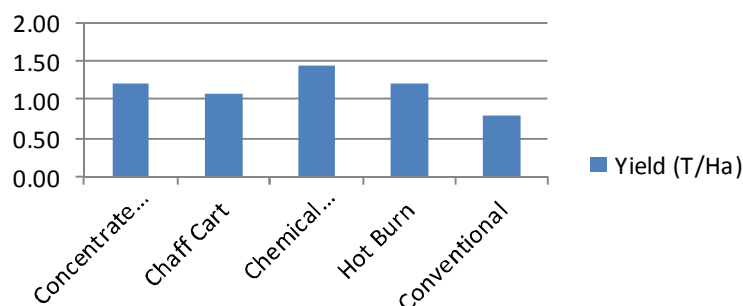
**CROP:** Gunyah Field Peas (2011—Commander Barley)

**OUTCOMES DESIRED:**

- To quantify the practice that gives the best reduction in Brome Grass population
- To assess harvest management strategies for Brome Grass control
- To assess what effect burning has on sandy, light soil types

Treatment	Timing	Brome Grass (plants/m <sup>2</sup> total of 3 assessments)	Percentage Reduction (%)	Yield (T/Ha)
Conventional	nil	2599	0%	0.80 T/Ha
Chaff Cart	December (harvest)	1243	52.15%	1.07 T/Ha
Narrow Wind-row + Burn	December + April	1516	41.69%	1.21 T/Ha
Chemically Fallowed	September 2011	155	97.02%	1.43 T/Ha
Hot Burn	April	1840	29.20%	1.20 T/Ha

## Brome Grass Harvest Management Trial

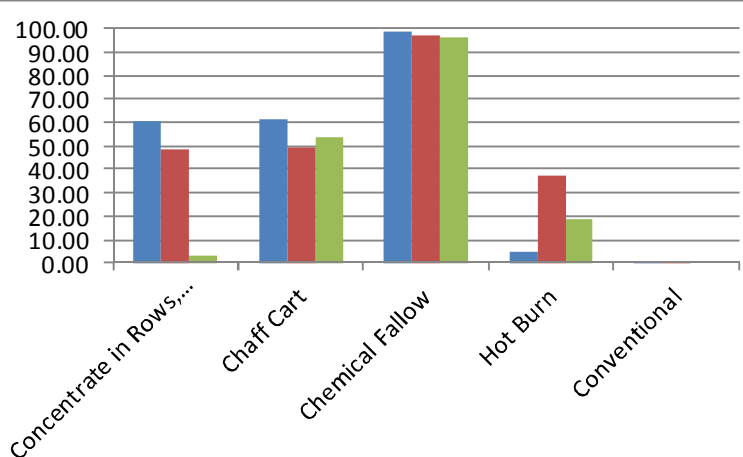


Harvesting of the trial was conducted in the middle of November. The Chemical Fallow treatment yielded the highest. It could be concluded that this was due in part to extra moisture and nutrients, but also due to the very low Brome Grass numbers present.

The Conventional treatment was worst and this is no surprise as the Brome Grass population in these plots was extremely high and competitive.

The Hot Burn plots were a surprise as the Brome Grass numbers were second worst here. However, visually you could see a difference in Pea vigour early on and this has translated to a yield benefit. Removing the stubble by burning may have lead to greater availability of nutrients during the season.

There was little difference between Chaff Cart and Narrow Wind-row Burning plots early on for Brome Grass. They both rely on catching the Brome Grass with the header front, but then process it differently. The third assessment (green) that was done showed that burning the rows had not done a great job, with another flush of Brome Grass emerging later in the year.



**Take Home Messages:**

- Chemically Fallowing a crop in the year prior can greatly reduce grassy weed seed populations (up to 97%)
- A 0.63 T/Ha increase in Pea yield was recorded by the Chemically Fallow treatment. The \$198/Ha improvement on gross margin may not quite make up for the previous season's crop loss, but the long term viability of the paddock with weed control has been significantly improved.
- Brome grass had significant impact on the Pea yield (up to 45%) due to soil moisture and nutrition competition.
- A compromise has to be met when Hot Burning. An early burn results in the best weed seed kill, but leaves the soil exposed longer to erosion prior to seeding. A later burn performed just before seeding, like in this trial, results in less weed seed kill, but a reduction in erosion of our fragile topsoil.
- Chaff Carts, Narrow Wind-row Burning and the use of the Harrington Seed Destructor all rely on catching the weed seeds with the header front at harvest. With a weed like Brome Grass, that matures early and shatters easily, only a 40-60% reduction in weed seeds could be expected depending on the crop type & time of harvesting.
- Conventional harvesting does not have a fit in a high pressure grassy weed situation. Particularly, if chemical resistance is becoming an issue.
- Herbicide group rotation and use of mechanical systems (hay, chaff cart, green manure, and autumn tickle amongst others) will all help in keeping Brome Grass numbers at manageable levels.



Photos from the 14th of September 2012

Top ConventionalBottom Chemical Fallow

Note the difference in biomass and colour



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