TOPIC: FALLOW

Group: ***Yuna 2010***

ABSTRACT

The purpose of this trial was to investigate low risk, best bet strategies for the low rainfall cropping zone. It involved comparing three simple rotations of wheat following wheat, wheat following late spraytopped pasture, and wheat following spray fallow.

The replicated trial was conducted using a farmers airseeder and boomspray for all treatments. Statistical analysis was not possible on the trial, but the wheat following spray fallow treatment was by far the most profitable over the two years as well as the least risky. If this trial were to be repeated results will vary given different seasons and different soil types.

TRIAL DETAILS

Property	Matt, Wayne and Jeff Williamson, South East Yuna
Soil type	Heavy Red Loam
Crop & Variety	Wheat, Bonnie Rock
Treatments:	Wheat on wheat, Wheat on late spraytop, Wheat on early spray fallow
Replicates:	3 reps
Sowing date	24th May 2010
Seeding rate	54kg
Fertiliser (kg/ha)	70kg Agras Extra, 40L Flexi-N down the tube
Paddock rotation	2008 Wheat, 2009 Wheat or late spraytop or long spray fallow
Growing Season Rainfall	May to October 160mm +7mm in March

RESULTS

23/8/10: Wheat on Wheat

Wheat on Spray Fallow

Treatment			$/ha
Wheat on Wheat			
Income	2009	1.74t H1 @ $250/t	435
	2010	0.54t AUH2 @ $301/t	163
		Total	598
Expenses	2009	Airseeder+Boom+Harvest	65
		55kg Bonnie Rock	18
		70kg Agras+30L Flexi-N	94
		LVE+GroupB	6
		Total	183
	2010	Airseeder	25
		Boomspray x 1	5
		Harvest	35
		54kg Bonnie Rock	14
		70kg Agras Extra+40L Flexi-N	58
		Jag+LVE	18
		Total	155
Wheat on Wheat 09/10 Gross Margin			**$260/ha**
Wheat on Late Spraytop			
Income	2009	-	0
	2010	1.29t/ha AUH2 @$301/t	388
Expenses	2009	2009 Boomspray x 1	5
		Spraytop	19
	2010	Airseeder+Boom+Harvest	65
		54kg Bonnie Rock	14
		70kg Agras Extra+40L Flexi-N	58
		Jag+LVE	18
		Total	179
Wheat on Late Spraytop 09/10 Gross Margin			**$209/ha**
Wheat on Spray fallow			
Income	2009	-	0
	2010	2.14t/ha AUH1 @$323/t	691
Expenses	2009	Boomspray x 2	10
		Knockdowns	60
	2010	Airseeder+Boom+Harvest	65
		54kg Bonnie Rock	14
		70kg Agras Extra+40L Flexi-N	58
		Jag+LVE	18
		Total	225
Wheat on Spray fallow 09/10 Gross Margin			**$466/ha**

Discussion

- All input and commodity prices used were current for when each operation occurred (e.g. 2009 Glyphosate $10/L, 2009 H1 $250/t). Therefore if current prices were used results may vary slightly.
- Presence of reasonable ground cover is critical to the spray fallow system. Commencement of spray fallow after drought when cover is limited is very risky due to the stubble not likely to be able to maintain cover until seeding the following year.
- During the spray fallow phase, storage of moisture enables useful nutrient mineralisation throughout the growing season up until the following seeding. This mineralisation significantly reduces the reliance on nitrogen fertiliser in the following wheat crop. This means that that purpose behind green and brown manure crops in the low to med rainfall region needs to be questioned.
- Build up of weeds in the wheat on wheat treatment would have not only contributed to yield loss but is an added expense in the following seasons.
- It has been noted in situations other than this trial that fewer weeds are controlled in a late spraytop strategy compared to a Spray fallow. This is because in the spray fallow scenario another germination of weeds occurs following the first spray allowing a greater reduction in the weed seed bank.
- No soil samples have been taken but the presence of root disease such as Rhizo and Take-All (which may or may not have influenced yield) is likely to be higher in the wheat on wheat, therefore increasing risk if another cereal crop is to be planted the following season.
- Summer rainfall will possibly reduce response to spray fallow but this needs to be trialed in the paddock as this reduction is based on theory and modeling.
- Having no subsoil constraints is critical to full utilisation of stored soil moisture. If there is a compacted layer or acid subsoil, roots will not explore to their potential rooting depth therefore leaving unused moisture deeper in the profile.

Above: 23/8/10 Foreground Wheat on Wheat, background Wheat on Spray Fallow.

For any further detail regarding this trial contact Bernie Quade, Landmark Geraldton, 0427 266 880

Technical Support

Grant Thompson - Photos; Bernie Quade, DAFWA- Initial trial design and setup.

In-kind Support

Matt, Wayne and Jeff Williamson for planting, spraying and harvesting the trial.