

# **An analysis of farming attitudes and practices in the medium and high rainfall areas of Southern WA**

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## **Key messages**

- The high rainfall zone (HRZ) adoption of early sowing and dry sowing lags that of the Medium Rainfall Zone (MRZ). The MRZ is adopting this technology as the yield benefits become more obvious in the face of uncertain starts to the season.
- The medium rainfall zone (MRZ) could benefit from a program of sheep extension. The MRZ is less efficient in sheep production than the HRZ. MRZ farmers generally respond too late to poor seasons.

## **Aims**

- The aim of this study was to benchmark the current attitudes of farmers to management issues that occur over the break of the season for both crop and livestock enterprises.
- In particular we focused on the attitude to dry sowing, time of seeding, and livestock management during this period.
- The results of this process would form the basis for the development of appropriate management tools (Rules of Thumb) than can be used to aid decision making.

## **Method**

A crop and livestock enterprise survey was constructed and then fine-tuned in consultation with Ashley Herbert (Agrarian Management), Ed Riggall (ER Consulting) and Bob Hall (Icon Agriculture) to ensure that relevant management questions important to break of season were addressed. Steve Curtin's clients formed the "medium rainfall group" whilst Andrew Ritchie's clients formed the high rainfall group.

A sample of growers from each rainfall zone (HRZ = 16, MRZ =17) were each asked a series of questions about the way they managed the farm program for both the livestock and cropping program during the break of the season. Growers from both zones were selected to ensure they were representative of mixed farming enterprises.

The data was collected and analysed both within and between regions according to both enterprises. Where respondents are reporting simple facts of scale or timing of events we have reported the simple statistics. Because of the sample size, we only reported the 2 major responses and ignored minor results where 1 or 2 respondents had chosen a management option. This allowed clearer conclusions to be developed without being confounded by small detail.

In some cases we also report the ranking of these options. These results were also constrained to major findings. This paper presents a selected sample of the survey results to do with attitudes to dry sowing and also sheep management.

## **Results**

### **Crop Enterprise - Attitudes to dry sowing**

In both the HRZ and MRZ many growers nominated better time management as a major motivator for dry seeding but the most important issue was high yield potential. Yield potential was ranked

as the number one reason for dry sowing by 46% of HRZ growers and 35% for MRZ growers. The clear difference between the rainfall zones is in the third priority selected. MRZ growers dry seed so they don't interfere with the main programme whereas weed issues are important for HRZ growers, especially when dry sowing canola.

The other major difference is the attitude towards dry sowing cereals. MRZ growers clearly place a high degree of importance on dry sowing their cereals in terms of time management, high yield potential and logistics. This is because growers in the MRZ rely on cereals as the dominant income stream. In contrast growers in the HRZ rely on both Canola and cereals for income but recognise Canola as the more important of the dry seeding opportunities (Table 1).

**Table 1 The main reasons why growers dry sow particular crops dry (%).**

Reasons to Dry Seed	Canola		Lupins		Cereals	
	HRZ	MRZ	HRZ	MRZ	HRZ	MRZ
Time management	68%	65%		65%	25%	82%
Good weed control options	18%					
Low weed burden	18%				12%	
High yield potential	62%	60%		53%	19%	71%
Size of programme						59%
Machinery limitations					12%	
Not interfere with main programme		53%		47%		

Dry sowing usually implies that there are weed control issues for both medium and high rainfall zones. These concerns are well founded and highlight the importance of planning in the previous year. Planning is particularly important when considering current weed control issues, rotations and the role of break crops. The major limitation on the amount of wheat that can be dry sown in the MRZ is the lack of suitable rotation options especially where pasture forms a major part of the enterprise mix. This is because of a tendency to retain stock feed as long as possible resulting in sub-optimal timing for grass control. Adequate grass control is difficult to achieve in a pasture phase compared to a lupin and/or canola crop. Lupins and canola have the added benefit of being easier to seed and capable of storing more soil moisture under any remaining stubble in addition to the weed control options.

Dry sowing is becoming an essential tool for maximising yield for the major income earning crops for each zone. Table 2 (below) highlights the limitations to dry sowing in each zone and the importance growers place on weed control as a key issue associated with dry sowing.

**Table 2 The limitations to dry sowing that have been identified and ranked by growers in both high and medium rainfall zones.**

Limitation	HRZ		MRZ	
	% identified	% rank 1	% identified	% rank 1
Weed Control	100%	86%	94%	71%
Chemical Options	38%	13%	47%	
Frost Risk	38%		41%	6%
Non Wetting Soils	19%		12%	
Financial Risk	6%		24%	6%
Unreliable Crop Establishment	25%		18%	
Machinery Limitations	6%		18%	6%
Commitment without Rain	27%		41%	

Weed control was both identified and ranked as the number one limitation to dry sowing in the two rainfall zones. Barley and Oats are the dominant cereals in the HRZ but there are limited options

for ryegrass control which explains why they are not sown dry more often. Only 50% of growers are willing to dry sow 50% of the barley and oat area.

Grain growers perceive that when dry sowing there are limited weed control options, however, this is not always the case. In particular we have also identified the rule of thumb that crops sown immediately after the rain are the weediest. Anecdotal evidence suggests the first paddock sown after rain being the weediest but it also implies that some farmers don't trust soil active residual herbicides. If this is the case then dry sowing could occur for no further penalty as chemicals will activate when there is enough moisture to germinate the crop. Growers who don't trust these residual herbicides will not dry seed and place a high value on pre-sowing knockdown chemicals.

The decision to dry seed requires an assessment of the potential weed burden in any particular paddock. Assessing potential weed burdens may be an issue if farmers are unsure, or don't trust their own assessments. This may be due to the nature of the weeds they are dealing with, such as ryegrass and radish which are capable of multiple germinations or dormant seed which germinates over a number of years. Multiple germinations can be exacerbated in non-wetting soils, even though only 12% (MRZ) and 20% (HRZ) of farmers perceive non wetting soils as a problem when dry sowing (Table 7).

The other point to note is that frost risk was the second ranked limitation identified by growers in both zones. There is obviously the risk that dry sown crops are earlier maturing and run a high risk of being frosted. This depends more on the germination date and not the sowing date and in some part may be overcome by choice of longer season varieties when sowing.

Growers were also asked to comment and provide specific reasons about the decision not to dry sow. Dry sowing canola and lupins is the norm for both rainfall zones. However, for cereals, a lack of weed control options (35%) and frost risk (24%) were the most common reason why farmers don't dry seed. Non-wetting soils was the only other reason mentioned for not dry sowing lupins. In the HRZ, poor establishment (20% growers) and poor weed control (13%) were identified by a small number of growers as the reason they wouldn't dry sow canola. For cereals in the HRZ a lack of weed control options (44%) was identified as the main reason not to sow cereals dry. Of the 44%, all of them ranked weed control as the number one issue for cereals.

## Sheep

We compared both sheep management programs and attitude to seasonal risk with respect to the sheep system. Table 3 below highlights the major differences between each rainfall zone.

**Table 3 The comparison of key sheep management indicators in HRZ and MRZ.**

	HRZ	MRZ
Winter SR DSE/100mm	2.7	1.1
Winter SR DSE/100mm (GSR-110mm)	3.7	1.9
<i>(Indicator of grazing intensity)</i>		
Earliest Lambing	10 <sup>th</sup> June	10 <sup>th</sup> April
Latest Lambing	28 <sup>th</sup> July	20 <sup>th</sup> July
Min Length Joining	35 days	21 days
Max Length Joining	49 days	91 days
Total Feed Retained (kg/head)	33.1 kg	65.6 kg

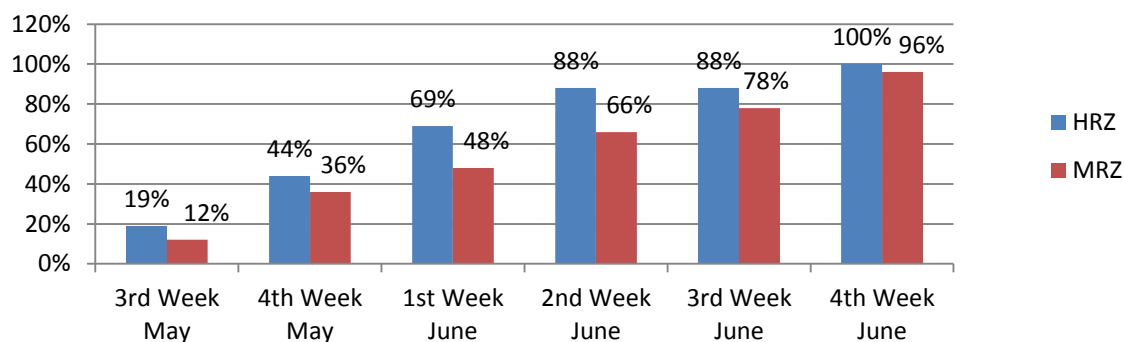
Clearly the MRZ growers have a far lower stocking rate per unit of rainfall, a very wide lambing period and joining window and keep 60% less sheep on 30% more area compared to the HRZ.

The numbers suggest that MRZ sheep are run half as efficiently as HRZ which are more dependent on sheep income. This suggests considerable scope for improved management in the MRZ, which may in turn improve the very low stocking rates.

Farmers were then asked to identify the date by which they would make changes to their livestock management practices in order to react to deteriorating seasonal conditions. This question was posed on the basis of our findings that most farmers are understocked and react too late to changing conditions.

Figure 1 (below) confirms that there is a wide range in response times to changing seasonal conditions. Most growers don't react early enough to changing seasonal conditions and there is a consistent difference between HRZ and MRZ farmers. MRZ respondents are lagging behind in their reaction most notably during the month of May. MRZ growers don't see a need to make changes to their livestock enterprise as urgently as the high rainfall growers. Once again this may be a reflection of the lower stocking rate and conservative approach to running the livestock enterprise, or the desire to focus their management on the seeding operation.

**Figure1 The proportion of farmers (y-axis) who will change their management practices as the break of season (x-axis) evolves.**



## Conclusions

This survey was an attempt to analyse current farmer practices in the HR and MR zones and identify any major differences between the two. We were particularly interested in how they responded to different seasonal outcomes with specific reference to the break of the season. The survey was designed to identify current practice, encourage them to consider alternative solutions and identify knowledge gaps.

Our major conclusions were:

- HRZ growers need to develop more confidence with early sowing of cereals.
- MRZ growers need to develop more confidence in dry sowing non cereal crops (canola)
- MRZ enterprises are operating livestock at a very low level of efficiency and clearly can improve their reproduction programs and feeding strategies.
- Weed control is recognised as the main limitation to more widespread adoption of dry sowing followed by frost risk.

## Key words

Decision making, management, dry sowing

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