

Understanding trends in falling numbers in the medium to high rainfall zones of Western Australia

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Background

The Grains Research and Development Corporation (GRDC), in conjunction with Stirlings to Coast Farmers (SCF) and South East Premium Wheat Growers Association (SEPWA), Southern Dirt, Facey Group, Fitzgerald Biosphere Group (FBG) and Ravensthorpe Agricultural Initiative Network (RAIN) are undertaking a project titled "Understanding trends in falling numbers in the medium to high rainfall zones of WA."

We want to know what your experience with wheat falling numbers is and how it affects your wheat production decisions? The GRDC is looking to address the issues associated with wheat falling numbers in medium and high rainfall areas of WA by collecting baseline data that will direct future research. Many SCF, FBG and Southern Dirt members have already been contacted to fill in a survey.

The project is still collecting data from other grower groups in different regions of southern WA. If you are an SCF member and would like to contribute to this data set, please call or text Sammy Cullen on 0417 605 784, and she will arrange a time to collect your responses verbally, or she can send you a survey to fill out. Thank you to everyone who has already spoken to Sammy or filled in the survey. Please find a summary of the survey results found so far.

Did you have any loads tested for falling numbers at the receival point in 2021? If so, what was observed?

YES - 50%

NO - 50%

Did you have sprouted grains detected at the receival point?

YES - 56%

NO - 44%

Did you have grain loads downgraded at receival points during the 2021 harvest due to the falling number result?

YES - 14%

NO - 76%

Did you have frost distorted grains detected at the receival point?

YES - 26%

NO - 74%

How would you rate the amount of harvest rainfall you had in 2021?

BELOW AVERAGE - 70%

AVERAGE - 23%

ABOVE AVERAGE - 7%

Are falling numbers/sprouted grain/black point generally an issue for your farm business?

YES - 61%

NO - 39%



How would you rate the following factors on their influence on wheat falling number results on your property? Please rate from 1-5, with 1 being minimal influence and five being highly influential.

		The average response from 34 growers
1	Variety	3.9
2	Time of Sowing	2.9
3	Timeliness of harvest	3.7
4	Harvest rainfall events	4.5
5	Frost events	2.5
6	Soil type	2.2

Have you utilised the following management techniques in recent seasons to mitigate the effects of falling numbers on your property? Yes/No

1	High moisture harvesting	YES	38%	NO	62%
2	Swathing the crop	YES	12%	NO	88%
3	Increasing harvest capacity e.g. new purchase	YES	65%	NO	35%
4	On-farm storage and mixing to optimize load quality	YES	80%	NO	20%
5	Prioritise harvest of susceptible varieties	YES	76%	NO	24%

Do you grow less wheat because of the risk of falling number problems downgrading your harvest price?



Have you discarded an otherwise suitable variety due to your experience or perception of its falling number risk?



Do you prioritise wheat harvest over other grains due to the downgrading risk from falling numbers?



Do you seed later than the optimum sowing window (for yield) to reduce the risk of falling numbers?



Are you confident that you know enough about the falling numbers issue to manage it adequately in the future?





Summary of the initial responses:

The survey will collect data from at least 60 growers in southern WA. The data presented in this article is based on the responses from 34 growers in the Stirlings to Coast Farmers, Southern Dirt (Kojonup/Katanning) and Fitzgerald Biosphere groups (Jerrermungup/Gairdner).

Despite the wet growing season, harvest was relatively dry, with 70% of the survey participants rating harvest rain 'lower than average'. Although 64% of growers had loads tested for falling numbers, only 25% had downgraded loads. Only 26% of growers reported frost distorted grains.

We asked growers to rate six factors affecting falling number results in wheat on a 1-5 scale, where 1 was a minimal influence, and 5 was highly influential. It was no surprise to see harvest rain (4.5) scoring the highest, followed by variety choice (3.9) and harvest timeliness (3.7). Based on these ratings, it makes sense that the top three tactics for mitigating the risk of falling numbers were:

1. On-farm grain storage and mixing
2. Prioritising harvest of susceptible varieties
3. Increasing harvest capacity. E.g. a new machine or utilising a contractor

Growers have multiple reasons to store and mix grain other than the falling numbers parameter, and similarly, increased harvest capacity would be motivated by many factors. Separating the reasons for increased harvest capacity and mixing grain was not covered in this survey.

Only 29% of growers said they grow less wheat because of the risk of sprouting downgrading grain quality. This number might reflect the perceived low risk of falling numbers, or it could be that less wheat is grown for other reasons. For example, lower wheat yield and profitability in relation to barley. This question will be interesting to monitor as more growers are surveyed.

Only 30% of growers said they prioritised harvesting wheat in relation to other crops, which is counter-intuitive based on the recognised threat from harvest rain. However, we suspect this may be because canola and barley are often finished when wheat reaches maturity. This is another data point that will be interesting to monitor as more surveys are completed from other regions.

Fifty nine percent of growers have had to discard an otherwise desirable wheat variety because it was a sucker for sprouting tolerance. This is valuable information for researchers and breeders to show how crucial sprouting tolerance is for southern growers. The results of the question asking if growers seeded later than the ideal window to counter falling numbers risk was surprisingly low at 15%. From personal experience, local growers tend to sow wheat at the end of their seeding programs, but we suspect the reasons for doing so are more than just the risk of sprouting. Southern growers seed wheat later to reduce the risk of frost and to diversify the flowering times of their cropping programs.