

Various oat seeding rate v quality

Facey Group

Contact: Chloe Turner – agrec@faceygroup.org.au

AIM

To determine if there is any quality variation against different seeding rates for oats.

TRIAL DETAILS

North↑

80 kg/ha	60 kg/ha	100 kg/ha	80 kg/ha
----------	----------	-----------	----------

Property:	Gary Lang
Plot size & replication:	23.8m wide PA scale plots
Soil type:	Sandy loam
Crop Variety:	Williams Oats
Sowing Date:	23 rd April 2016
Seeding Rate:	60kg/ha, 80kg/ha, 100kg/ha (75kg/ha rest of paddock)
Herbicides Pre:	Glyphosate 1L
Herbicides Post:	Logran 8g, MCPA LVE 0.5L
Insecticides Post:	Alpha Forte 0.06L
Fungicides Post:	Folicur 0.15L
Fertiliser IBS:	MAP 30kg, MOP 12kg, UAN 30L, CZMo Cereal Mix 1L
Fertiliser Post:	Urea 80kg

METHODOLOGY

This trial was seeded on the 23rd April 2016 to Williams oats with four PA scale plots measuring 23.8m wide across at 3 different seeding rates.

RESULTS & DISCUSSION

The protein content (Figure 1) was highest in the 100kg/ha rate, though it also had the lowest hectolitre weights (Figure 2) and the second lowest screenings (Figure 3). The 80kg/ha treatment results varied between the two plots and this could be attributed to effects other than the treatments, such as frost and soil nutrition variance. The 60kg/ha treatment fared well with protein and hectolitre weight, though it did have the highest percentage of screenings.

It has been observed in other trials throughout the state that plant density does influence hectolitre weight and screenings, but the effects are generally small and often not large enough to change the grade (Troup et al. 2016). The Williams oat variety has demonstrated in these trials its ability to be a high yielding grain variety but produced grain with a lower hectolitre weight and higher screenings when compared to the other milling oat varieties (Troup et al. 2015).

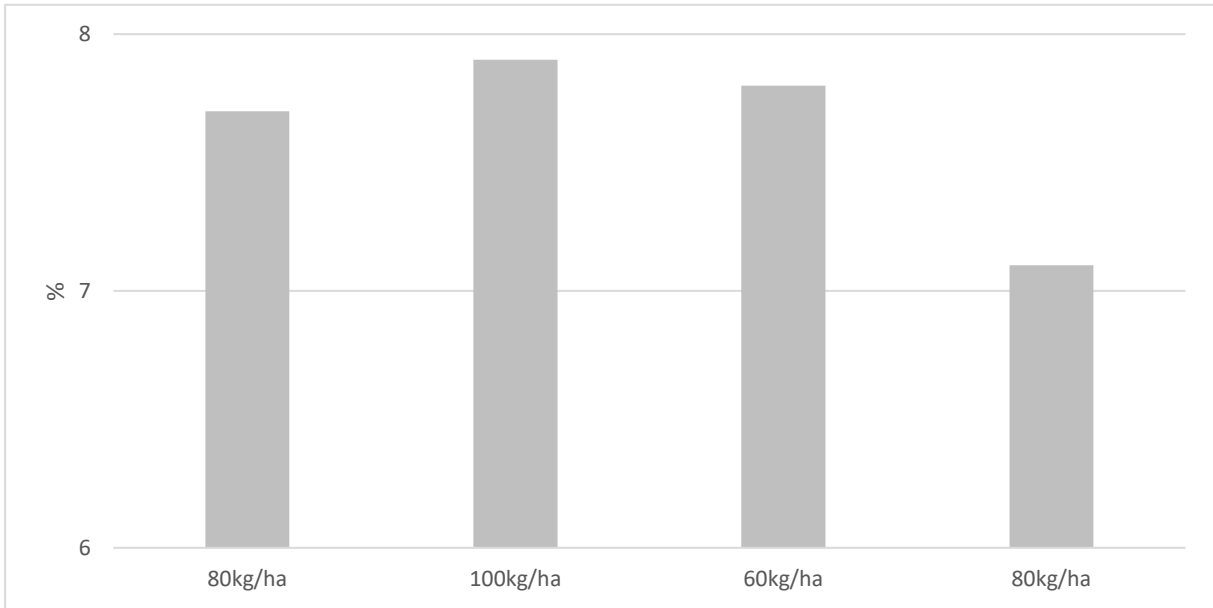


Figure 1: Protein %

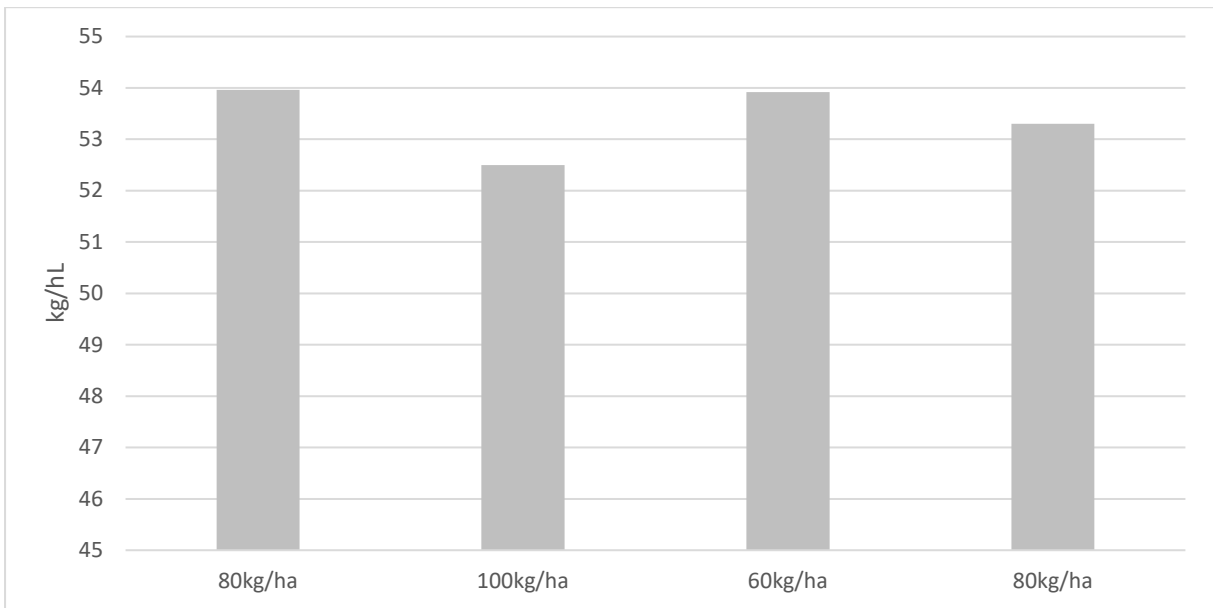


Figure 2: Hectolitre weight kg/hL

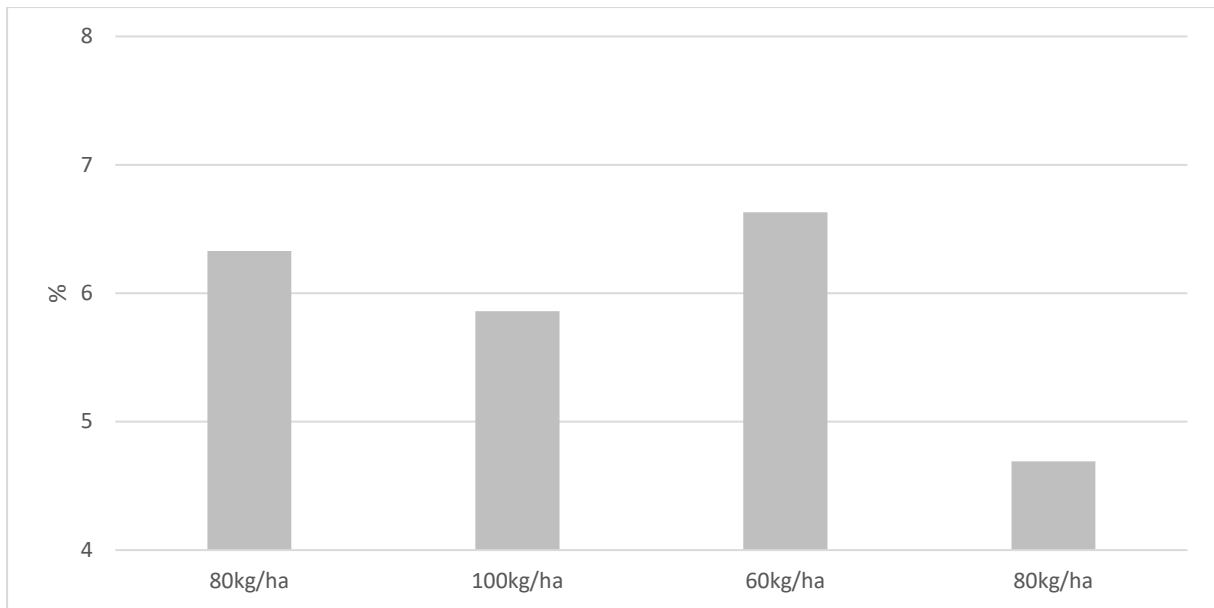


Figure 3: Screenings %

The trial showed that the various grain qualities did not vary greatly in relation to each seeding rate, although these variations small but they can be significant when applied to oat receival standards, with the grain quality differences having the potential to change the grade from Oat1 to Oat2, an average difference of \$40/tonne.

The oat NVT data from trials around the region saw average yields range from 3.75t/ha in Wagin, to 4.4t/ha in Pingelly for Williams oats (National Variety Trial Results 2016).

The difference in oat grain quality has the potential to have a significant variance in returns. For example, if a farmer planted 500ha of Williams oats and achieved a 4t/ha crop, the \$40/ha variance equates to \$80,000 in income loss/gain depending on the grade achieved.

CONCLUSION

The results from this trial would have been more indicative if more replicates had been applied. The small variations between different quality characteristics still are able to have an impact on a farmers bottom line. Further trials with more varieties and various seeding rates in the Wickiepin area will be able to give local growers a more comprehensive data set to make decisions from.

REFERENCES

Troup, G, Paynter, B & Malik, R 2016 'Response of Bannister and Williams oats to sowing date and plant density', *Proceedings of the 2016 GRDC Western Research Updates*, Perth WA.

Troup, G, Paynter, B & Malik, R 2015 'Bannister and Williams, how do the new oat varieties stack up?', *Proceedings of the 2015 GRDC Western Research Updates*, Perth WA.

National Variety Trial Results, 2016. Available from: <http://www.nvtonline.com.au/google-maps/2016/OatMaWA.xls>. [9 February 2017]

ACKNOWLEDGEMENTS

Gary Lang for providing and managing the trial site.