STIRLINGS TO COAST FARMERS

Growing Noodle Wheat in the High Rainfall Zone of WA

KEY POINTS

- Modern noodle wheat varieties Kinsei, Ninja and Zen, yielded more than Calingiri in almost every trial conducted by SCF between 2016-18.
- Southern HRZ noodle wheat growers reduce the risk of downgrades due to falling numbers and germ end staining by sowing noodle wheat later in the program.
- Southern HRZ growers try to avoid planting noodle wheat within 30km of the coast to reduce risks of harvest rain, and quality downgrades.
- Southern growers reduce grain quality risks by prioritizing the harvest of noodle varieties. Noodle wheat should be harvested once the crop is ripe and moisture is below 13.0%. HRZ growers can harvest noodle wheat at >13% moisture and dry the grain when it is economical to do so.
- Kinsei has good physical grain characteristics and provides a general udon quality improvement compared to Calingiri and Ninja.

FIGURE 1: Kinsei wheat on the left and Ninja on the right at Frankland on November 8, 2018. Trial was sown on June 4, 2018.

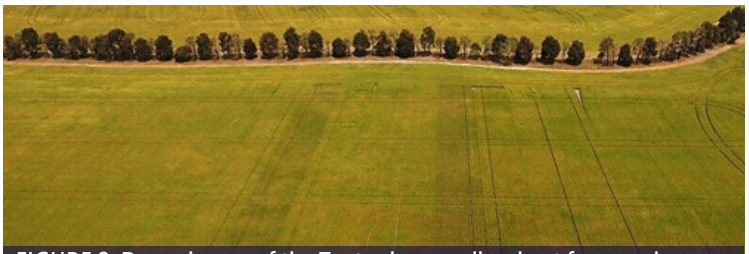

FIGURE 2: Drone image of the Tenterden noodle wheat farm-scale variety trial in 2017.

FIGURE 3: Drone image of the Frankland broad-scale noodle wheat variety trial on November 8, 2018. The trial was seeded on June 4, 2018.

Introduction

Growing noodle wheat in the high rainfall zone (HRZ) has been regarded as 'risky' crop to produce for many grain growers. One hazard to producing noodle wheat is the volatile price. Which can be due to market and environmental conditions. The southern areas regularly experience harvest rain on mature wheat, which can lead to the grain sprouting and germ end staining. The price reduction for missing noodle wheat grades (ANW1 or ANW2) is usually very steep.

The noodle wheat market requires approximately one million tonnes of grain annually to supply Japan and Korean consumers. Southern WA is usually the last region to start harvest and once noodle wheat demands are fulfilled the price falls dramatically. Southern growers are more likely to harvest noodle wheat after the market demands have been met.

Wheat on the south coast has traditionally had lower yields and profit margins compared to barley. Malt barley varieties are high-yielding and well suited to our region. When barley misses malt specification, the high yields and sometimes minimal price difference, maintains profitable margins. Noodle wheat is capable of achieving gross margins similar to canola or barley but is often less due to grain quality discounts and low prices.

Stirlings to Coast Farmers investigated if a better agronomic package could simultaneously improve grain yields and reduce the risk of missing noodle grade specifications. If both parameters could be improved, noodle wheat would be a less risky crop for southern HRZ growers. An increase in noodle wheat plantings would likely come as a substitution for barley hectares which is beneficial for crop rotations and economic diversity.

Table 1: Summary of the noodle wheat yields from Stirlings to Coast Farmers trials in 2016-18. Yields are in (tonnes/hectare). Trials include small plots and farm-scale data sets.

Trial type	Location	Year	Sowing date	ANW Kinsei	ANW Ninja	ANW Zen	ANW Calingiri	APW Trojan
Small Plots	Woogenellup	2016	May-27	N/A	5.91	6.01	5.93	6.03
Farm-scale	Perillup	2016	Jun-02	N/A	N/A	6.31	5.92	6.24
Farm-scale	Gnowellen	2016	May-20	N/A	N/A	6.25	6.04	6.24
Farm-scale	Tenterden	2016	May-30	N/A	N/A	3.03	2.53	2.54
Small Plots 80kg/ha	Kendenup	2017	May-26	6.66	6.68	6.52	5.82	5.92
Small Plots 150kg/ha	Kendenup	2017	May-26	7.19	7.10	7.01	N/A	N/A
Farm-scale	Gnowellen	2017	May-29	N/A	4.91	4.61	4.55	4.49
Farm-scale	Tenterden	2017	May-26	N/A	5.29	5.5	5.26	5.96
Farm-scale	Tambellup	2017	May-30	N/A	2.23	2.28	2.28	2.66
Small Plots 110kg/ha	Tenterden	2018	Jun-16	2.76	2.64	2.57	2.24	2.32
Small Plots 135kg/ha	Tenterden	2018	Jun-16	2.80	2.80	2.49	2.62	2.33
Farm-scale	Kendenup	2018	Jun-11	6.36	5.81	5.70	5.52	5.35
Farm-scale	Frankland	2018	Jun-04	6.07	5.92	5.76	5.44	5.86
SCF Trials Average 2016-18				4.93	4.69	4.75	4.51	4.66

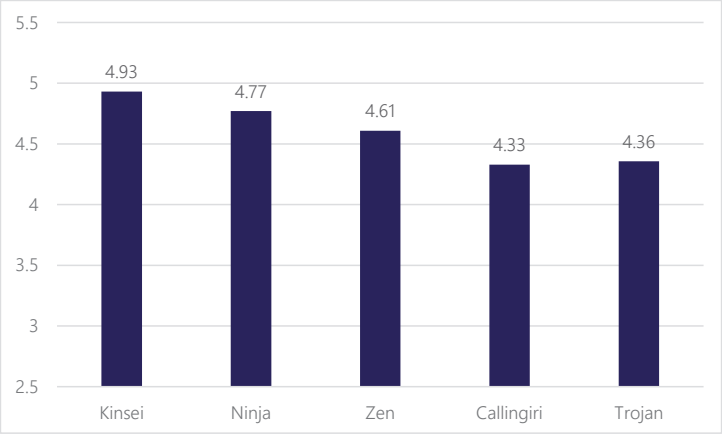

Figure 4: Average noodle wheat yield (tonnes/hectare) from five different Stirlings to Coast Farmer trials in 2017-18. Trojan is an APW wheat included as the regional standard.

Conclusion

New noodle wheat varieties are higher yielding than Calingiri in the southern HRZ of WA. The high yield potential of Kinsei particularly, acts as a buffer to price drops from market conditions or grain quality challenges. Some growers in the region are regularly achieving high yielding noodle wheat crops that satisfy ANW1 quality parameters.

The basic agronomy package sees growers selecting the modern varieties such as Kinsei, Ninja and Zen, seeding high sowing rates and planting after May 20. Fertiliser is supplied to feed a 6t/ha grain crop and usually two foliar fungicides are applied in addition to a seed dressing.

Harvesting noodle wheat is prioritized where possible, due to the economic penalty of missing noodle grades. Growers factor in the weather forecast, noodle wheat price and the cost of drying grain when making these decisions. One way to reduce price volatility of noodle wheat is to increase international demand of our product. SCF and the Western Australian Producers Co-operative have made small steps in this area but require ongoing support to continue.

High yielding noodle wheat that achieves ANW classification has similar gross margins to barley and canola crops. The latest varieties are a significant yield and quality improvement on Calingiri which will increase grower profits. Careful consideration of paddock selection, location and grower logistics will reduce the risk of noodle wheat failing to meet specification in the HRZ.

Noodle Wheat Facts

- WA is the only imported source of wheat grain for Udon Noodle markets in Japan and Korea.
- Intergrain has the only noodle wheat-breeding program in the world outside of Japan.
- Noodle wheat is one of the few differentiated grains produced by WA growers creating a buffer between price drops compared to more common wheat grades.
- Kinsei, meaning 'balance' in Japanese, was named by a Great Southern Grammar student as part of a collaborative naming project between the Albany-based school and Intergrain.

Tips for growing Noodle wheat in the Southern HRZ of WA

1. Sow more than 30km from the coast where possible to reduce the risk of harvest rainfall affecting grain quality.
2. Sow noodle wheat later in the seeding program to mitigate risk from late-season rain.
3. Data from SCF trials from 2016-18 indicate noodle wheat maintains excellent yield potential when sown after May 20, on the south coast.
4. SCF trial work in the HRZ showed higher yields from all noodle varieties when planted at heavy sowing rates. SCF data suggests seeding rates should be 100-140kg/ha for Kinsei, Ninja and Zen when sowing after May 20.
5. Calingiri growers should try sowing new variety Kinsei. Yield data across multiple SCF trials and local NVT results indicate a >10% yield improvement.

		NVT trial year					
Variety	Grade	2015	2016	2017	2018	2019	Average
Kinsei	*ANW*	*NA*	*NA*	111	113	108	**110.7**
Ninja	*ANW*	108	107	110	107	105	**107.4**
Zen	*ANW*	104	97	104	113	107	**105**
Calingiri	*ANW*	94	100	97	94	97	**96.4**
Trojan	*APW*	95	97	100	93	96	**96.2**
Sceptre	*H1*	110	109	111	114	114	**111.6**

Table 2: GRDC funded National Variety Trial data from Kendenup, Kojonup and South Stirlings from 2015-2019. Numbers represents the average percentage above or below the trial mean achieved that year.

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