

# 2015 Wheat NVT Trial Results

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## KEY MESSAGES

Mace continues to increase in acreage and occupied the lion's share of WA wheat sowings in 2015. Reliance on only one wheat variety is not without its risks and there are a range of varieties that growers can use to minimise risk, maximise profit and increase genetic diversity in their cropping program:

- Scepter looks like a potential replacement for Mace having similar agronomic character with improved leaf rust resistance and yield. Further evaluation is required as 2015 is Scepter's first year in the NVT program. Cobalt and Tenfour were also top performers similar to Scepter, but at feed grade may have a very limited market.
- Zen performed well proving it as a quality replacement for Calingiri. In 2015 Zen was consistently higher yielding than Calingiri and also brings an improved yellow leaf spot, stem rust and stripe rust package.
- There are now a range of longer season wheats available that will yield well given the right seasonal conditions and in particular an early sowing opportunity. These include Trojan, Cutlass, Bremer, Magenta, Zen and Harper.

## AIMS

The National variety trial (NVT) program is a national program of comparative crop variety testing with standardised trial management, data generation, collection and dissemination. The program is supported by the Australian Government and growers through the GRDC and is managed by the Australian Crop Accreditation System Limited (ACAS). The NVT aims to generate independent information to growers about newly released crop varieties. The NVT system has been developed to complement the plant breeding programs. The NVT program will only test lines very close to commercial release.

The aim of the program is to evaluate a range of current and soon to be released wheat varieties established at a single sowing time and under regional, grower accepted, and standard practice. Growers are able to select varieties with new and improved quality, maturity and disease traits which in turn provide breeders with feedback on the direction they need to be taking their respective breeding operations in WA.

## METHOD

The trials are distributed as evenly as possible across Australia in the main soil types and rainfall zones, and where possible, the trials are located with active grower groups to provide a focal point for the main grower group research sites. The trials are sown and harvested as close to or before district grower practice to ensure variety performance is similar to that seen by growers on their farms. The varieties in the trials are either currently available to growers or will soon have commercial release to market and are benchmarked against district standards and quality check varieties.

Field assessments of emergence, vigour, and days to flowering are conducted across all of the trials along with other opportune assessments that occur in different growing seasons e.g. disease, shattering. Following yield measurements all varieties have a CBH delivery standard analysis conducted on oil, seed & meal protein and moisture.

## Data Analysis Method

P.V. (Production Value) is the individual Variety yield benchmarked against the overall mean yield for each region expressed as a percentage. Data for the last 5 seasons, 2011-2015, are used in the analysis to calculate the PV's. All NVT data is analysed by SAGI.

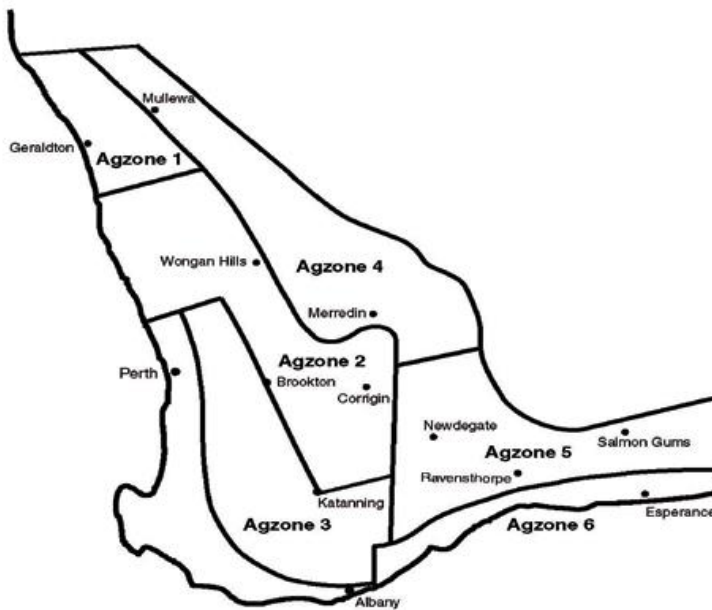
## RESULTS

Table 1. Production Values (%) for wheat varieties in Agzones 1, 2 and 4.

Variety	Agzone1		Agzone2		Agzone4	
	PV %	No. Trials	PV %	No. of Trials	PV %	No. of Trials
Scepter	112	6	113	16	110	9
Hydra	108	18	107	48	105	27
Cosmick	106	12	106	31	105	9
Corack	106	30	105	79	106	42
Mace	105	30	105	79	104	43
Cobra	105	24	105	64	104	35
Tenfour	102	18	105	49	105	35
Zen	105	18	104	48	101	27
Cobalt	101	6	104	19	103	34
Cutlass	100	6	102	16	104	9
Wyalkatchem	103	30	102	79	101	43
Magenta	103	30	102	79	100	43
Supreme	101	18	101	48	101	27
Trojan	100	18	102	47	101	26
Kunjin			100	63	101	33
Envoy	99	12	100	31	100	16
Bremer	101	18	100	48	98	27
Westonia	100	30	100	79	101	43
Espada	99	18	99	47	100	25
Scout	94	30	98	79	101	43
Emu Rock	97	30	99	79	103	42
EGA Bonnie Rock	100	30	99	79	99	43
Harper			97	46	99	9
King Rock	100	12	99	31	99	16
AGT Katana	96	12	97	31	100	16
Wedin			96	79	95	43
Calingiri	98	30	96	79	95	43
Arrino	96	12	97	31	99	15
Carnamah	98	12	97	31	96	16
Estoc	96	12	96	30	97	16
B53	98	6	97	32	95	18
Fortune	97	30	96	79	96	43
Impress CL Plus	99	24	96	63	95	35
Yitpi	93	24	95	63	97	35
Justica CL Plus	94	30	94	79	96	43
Clearfield STL	96	12	95	31	93	16
Sabel CL Plus	94	6	93	16	93	8
Yandanooka	93	24	92	63	93	33
Grenade CL Plus	90	30	91	79	93	43
Jade	90	6	92	33	93	26
Kord CL Plus	90	18	90	47	94	25
Impose CL Plus	92	12	89	31	90	16
Zippy	86	6	88	16	93	8
<b>Mean Yield (t/ha)</b>	<b>2.33</b>		<b>2.67</b>		<b>1.78</b>	

**Table 2. Production Values (%) for wheat varieties in Agzones 3, 5 and 6.**

<b>Variety</b>	<b>Agzone3 No. of Trials</b>		<b>Agzone5 No. of Trials</b>		<b>Agzone6 No. of Trials</b>	
Scepter	112	6	115	6	117	3
Hydra	107	16	107	18	109	9
Cosmick	105	11	105	12	107	3
Corack	103	25	108	29	104	14
Mace	104	25	108	29	105	14
Cobra	105	25	104	26	104	11
Tenfour	102	21	106	24	108	12
Zen	104	16	105	18	108	6
Cobalt	103	21	105	18	109	12
Cutlass	106	6	105	6	104	3
Wyalkatchem	102	25	104	29	103	14
Magenta	104	25	100	29	103	14
Supreme	101	16	102	18	101	3
Trojan	102	21	98	24	103	12
Kunjin	101	19	101	23	99	9
Envoy	99	25	102	29	104	14
Bremer	100	16	100	18	104	9
Westonia	100	25	100	29	98	14
Espada	99	14	99	17	98	9
Scout	100	25	101	29	100	14
Emu Rock	98	25	103	29	97	14
EGA Bonnie Rock	98	25	98	29	97	14
Harper	99	16	99	18	98	9
King Rock	97	9	98	11	98	5
AGT Katana	97	9	100	11	94	5
Wedin	99	25	97	29	98	12
Calingiri	98	25	95	29	97	11
Arrino	96	9				
Carnamah	98	9	94	11	95	5
Estoc	98	25	97	28	97	12
B53	96	11	91	12	98	6
Fortune	98	25	96	29	95	14
Impress CL Plus	94	15	95	18	94	9
Yitpi	97	21	97	24	96	12
Justica CL Plus	96	25	96	29	94	14
Clearfield STL	97	9	92	11	96	5
Sabel CL Plus	97	4	95	5	93	2
Yandanooka	94	19				
Grenade CL Plus	92	25	92	29	88	14
Jade	91	16	90	12	91	3
Kord CL Plus	91	14	91	17	86	8
Impose CL Plus	86	9	91	11	86	5
Zippy	84	4	90	5		
<b>Mean yield</b>	<b>4.16</b>		<b>2.65</b>		<b>3.51</b>	



**Figure 1.** Agzones of the WA wheat belt.

## CONCLUSION

The 2015 season brought varied conditions across the state producing site average yields from 1.47-5.74 t/ha. Mace continues to be a solid benchmark for yield in WA but now has some potential alternatives/replacements.

- Growing only one variety is not without its risks and there are a range of varieties that growers can use to minimise risk, maximise profit and increase genetic diversity in their cropping program.
- Scepter looks like a potential replacement for Mace having similar agronomic character with improved leaf rust resistance and yield. Further evaluation is required as 2015 is Scepters first year in the NVT program.
- Hydra performed well again in 2015 performing slightly better than Mace but below Scepter in all Agzones.
- Zen was a top performer proving it as a quality replacement for Calingiri. In 2015 Zen was 11% higher yielding than Calingiri on a state basis and also brings an improved yellow leaf spot, stem rust and stripe rust package. A reduced powdery mildew tolerance needs to be closely managed but thus far has not appeared to be an issue.
- Cobalt and Tenfour returned some good results in 2015, similar to Scepter, but at feed grade may have a very limited market.
- There are now several long season wheats available for early sowing opportunities or frost management. Yitpi has remained a popular choice for a late maturing line in some regions (particularly frost risk areas). Trojan and Cutlass both look to be a possible alternatives in the Yitpi growing areas for early sowing options or frost risk management.
- Magenta, Bremer, Harper and Zen are all longer season wheats that will have their fit in WA.
- Clearfield or IMI tolerant lines continue to demonstrate a yield penalty relative to other current varieties and should be considered for their agronomic attributes. Impress CL Plus continues to be the best performer in Ag zones 1, 2 and 6.

Disclaimer: It is advisable not to make widespread recommendations or management decisions on variety replacement or retention based solely on the 2015 NVT data

## **KEY WORDS**

Wheat, varieties, National Variety Trials, grain yield

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