2022 Hyola innovation systems plant population agronomy trial results

Lake Hinds WA

Trial	22STAGVL6_CND
Location	Calingiri – Wongan Hills Road, Lake Hinds
Sowing date	27 April 2022
Target populations (plants/m²)	15, 25, 40
Previous Crop Rotations (2019, 2020, 2021)	Wheat, wheat, oats (hay)
GSR (mm) (nearest BOM)	304.2
Soil pH (H_2O / $CaCl_2$)	7.4 / 6.7

This trial is 1 of 3 sites conducted across Western Australia's central wheatbelt in 2022. Consider multi environment trial (MET) results for an overall view but interpret single sites cautiously.

Environmental influence dominates yield determination at 77% (Table 1). Variety and population have an increasing influence on a single site basis, their impact will vary yearly and site-to-site.

ANALYSIS FACTOR	Trials - % variance accounted for by factor on yield			
	MET (overall)	Lake Hinds	Corrigin	Tammin
Environment (E)	77.41%			
Population (P)	0.38%	3.81%	11.24%	1.74%
E x P	0.0%			
Variety (V)	11.3%	86.35%	59.47%	49.04%
V x P	0.55%	9.85%	29.29%	49.22%
V x E	4.84%			
V x P x E	5.52%			

Table 1: MET analysis % variance for 3 Hyola systems population trials conducted at Lake Hinds, Tammin and Corrigin in 2022.

At the Lake Hinds site 2022, variety dictated 86% yield variance, while the population's effect was minimal (<10% variation, Table 1), in contrast to the other sites.

Prioritise selecting the right herbicide technology and maturity based on your rotation, since the highest yields and gross margins within each group show no significant differences (Table 2). Opt for target populations that enhance yield potential, weed competition, and safeguard against losses due to diseases, insects, or harsh soil conditions.

	Variety Technology Entry	Population Target Plants per m2	Mean Yield (t/ha) CND	Mean Oil %
CLEARFIELD TECHNOLOGY	44Y94	15	3.013	50.60
	44Y94	25	2.948	50.50
	44Y94	40	3.010	50.36
	45Y95	15	3.638	49.23
	45Y95	25	3.253	48.68
	45Y95	40	3.765	49.82
	Hyola Continuum CL	15	3.119	51.79
	Hyola Continuum CL	25	3.376	50.88
	Hyola Continuum CL	40	3.274	51.76
	Hyola Solstice CL	15	3.289	51.30
	Hyola Solstice CL	25	3.167	50.61
	Hyola Solstice CL	40	3.321	50.79
TRUFLX OR TRUFLEX + CLEARFIELD TECHNOLOGY	Condor TF	15	2.964	52.57
	Condor TF	25	3.567	51.78
	Condor TF	40	3.231	53.04
	InVigor R 4520P	15	2.755	51.08
	InVigor R 4520P	25	3.101	51.33
	InVigor R 4520P	40	3.583	51.01
	XC210034	15	3.265	51.22
	XC210034	25	3.597	51.60
	XC210034	40	3.788	51.77
	Emu TF	15	1.937	48.30
	Emu TF	25	2.553	48.55
	Emu TF	40	2.645	49.29
TRIAZINE, CLEARFIELD + TRIAZINE OR LIBERTY + TRIAZINE TECHNOLOGY	Hyola Blazer TT	15	3.088	50.42
	Hyola Blazer TT	25	3.157	50.86
	Hyola Blazer TT	40	3.436	50.81
	Hyola Defender CT	15	3.224	49.06
	Hyola Defender CT	25	3.140	50.00
	Hyola Defender CT	40	3.229	50.03
	Hyola Enforcer CT	15	2.776	48.57
	Hyola Enforcer CT	25	2.988	49.77
	Hyola Enforcer CT	40	2.956	49.64
	HyTTec Trident TT	15	2.947	49.09
	HyTTec Trident TT	25	2.860	49.29
	HyTTec Trident TT	40	2.838	49.17
	HyTTec Trifecta TT	15	3.294	50.34
	HyTTec Trifecta TT	25	3.603	50.20
	HyTTec Trifecta TT	40	3.024	49.36
	InVigor LT 4530P	15	2.814	47.78
	InVigor LT 4530P	25	2.753	47.11
	InVigor LT 4530P	40	2.934	47.43
	ATR Bonito	15	1.900	48.76
	ATR Bonito	25	1.826	49.58
	ATR Bonito	40	1.822	49.56
	DG Bidgee	15	2.600	48.37
	DG Bidgee	25	2.714	48.09
	DG Bidgee	40	2.956	47.66
	Mean Analysed Yield (t/ha) and Oil %		3.022	49.98
	ASReml	CV%	6.1	0.917
	Statistical	AVSED	0.147459	0.41
	Analysis	LSD (5%)	0.296487	0.927

	Variety Technology Entry	Population Target Plants per m2	Gross Return ($/ha) CND
CLEARFIELD TECHNOLOGY	44Y94	15	$2,746
	44Y94	25	$2,661
	44Y94	40	$2,681
	45Y95	15	$3,281
	45Y95	25	$2,892
	45Y95	40	$3,360
	Hyola Continuum CL	15	$2,875
	Hyola Continuum CL	25	$3,066
	Hyola Continuum CL	40	$2,963
	Hyola Solstice CL	15	$3,020
	Hyola Solstice CL	25	$2,866
	Hyola Solstice CL	40	$2,980
TRUFLX OR TRUFLEX + CLEARFIELD TECHNOLOGY	Condor TF	15	$2,578
	Condor TF	25	$3,061
	Condor TF	40	$2,756
	InVigor R 4520P	15	$2,360
	InVigor R 4520P	25	$2,640
	InVigor R 4520P	40	$3,011
	XC210034	15	$2,809
	XC210034	25	$3,082
	XC210034	40	$3,212
	Emu TF	15	$1,603
	Emu TF	25	$2,104
	Emu TF	40	$2,157
TRIAZINE, CLEARFIELD + TRIAZINE OR LIBERTY + TRIAZINE TECHNOLOGY	Hyola Blazer TT	15	$2,811
	Hyola Blazer TT	25	$2,863
	Hyola Blazer TT	40	$3,087
	Hyola Defender CT	15	$2,899
	Hyola Defender CT	25	$2,825
	Hyola Defender CT	40	$2,874
	Hyola Enforcer CT	15	$2,479
	Hyola Enforcer CT	25	$2,679
	Hyola Enforcer CT	40	$2,613
	HyTTec Trident TT	15	$2,636
	HyTTec Trident TT	25	$2,544
	HyTTec Trident TT	40	$2,491
	HyTTec Trifecta TT	15	$2,986
	HyTTec Trifecta TT	25	$3,246
	HyTTec Trifecta TT	40	$2,665
	InVigor LT 4530P	15	$2,347
	InVigor LT 4530P	25	$2,257
	InVigor LT 4530P	40	$2,384
	ATR Bonito	15	$1,724
	ATR Bonito	25	$1,645
	ATR Bonito	40	$1,622
	DG Bidgee	15	$2,318
	DG Bidgee	25	$2,401
	DG Bidgee	40	$2,589
	Mean Gross Return ($/ha)		$2,662
	Oil Bonification / Deduction		1.5% for every 1% Gross Price
	Gross Price Assumption per MT		$850 - nonGM & $800 for GM
	Effective Sowing Rates		1.1kg/ha, 1.8kg/ha & 2.85kg/ha

High
Medium
Low

Table 2: Single site results for Lake Hinds 2022 Hyola systems population trial, grain yield, oil % and gross margin

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