

PCT Report
Irrigation Barley
2024



Barley PCT Report in the Irrigation area

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About this report

The main objective of the Pre-Commercial trial (PCT) is to plant the best lines from the breeding program under the exact same conditions (soil, climate, and management) to ensure that the yield, grading characteristics, and malting quality of the lines can be evaluated on a more comparative basis. During the 2024 season, seven trials were planted under irrigation to evaluate the lines. This report will cover all the line evaluation trials executed by SABBI during the 2024 season, including relevant climatic data, agronomic data, grading characteristics, and yield results.

Climatic conditions

The Irrigation area experienced significant fluctuations during 2024, with both positive and negative outcomes. One challenge was the presence of hail storms and bird damage in the barley fields, which contributed to a lower intake of the barley crop. However, on a positive note, the new experimental varieties showed promise.

Breeding strategy

Our breeding strategy is rooted in a collaborative approach that engages all stakeholders, from producers to malsters and brewers. By aligning with these key players, we aim to create a comprehensive understanding of the needs and goals of each group, and to develop solutions that meet their specific needs. Our breeding strategy is not only centered on innovation, but also on building strong relationships with all stakeholders, including farmers, researchers, and industry partners.

The localities

The present barley production area (Irrigation area) was divided into three sub areas, namely Central Irrigation area (Taung, Hartswater and Jan Kempdorp), Southern Irrigation area (Rietrivier, Douglas-East and Douglas-West), and Tyson area (Koedoeskop and Beestekraal). Each of these three sub areas was covered by two to three localities that are representative of the different homogeneous

agricultural areas in the respective sub areas. The different sub areas with their respective localities are listed in Table 17.

Breeding trials management

The trials consisted of 25 entries (3 replicates) from which one is commercially grown cultivars (standards); two experimental varieties, one sixth year line, one fifth year line, four third year lines, four second year lines and twelfth new lines. All the lines in the trials came from the SABBI breeding program and are listed in Table 22.

All the trials were laid out according to the nearest neighbour design and the data analysed with Genovix software. In order to standardise the trials, all were planted by SABBI with an Agri-Phyto trial plot planter. The individual plots consisted of 5 rows with an inter row spacing of 25 cm. Plots were planted at 5m in length. The seeding density of the different lines used in the trials varied according to their thousand-kernel weight. The aim was therefore to establish the same quantity of plants per unit area in a trial for a specific area.

Fertilisation of all the trials was applied according to the area, rotation system and individual recommendations obtained from soil analysis. Nitrogen top dressing was applied during the season at selected trials as indicated in Table 21.

Weed, pest and disease control were applied optimally as required in order to ensure a competitive free environment for the barley plants throughout the growing season.

At the end of the growing season trial plots were harvested with a Wintersteiger Delta trial plot combine harvester. The net trial plots consisted of 5 rows of 5 m length (6.0 m²). Yield in kg/ha was determined and a complete grading was done on the harvested samples with a Steinecker grading apparatus and nitrogen content of the kernels was determined with a Foss Infratec 1221 whole grain analyser. For the purpose of this report yield, percentage plumpness (> 2.5 mm), screenings (< 2.0 mm), percentage kernel nitrogen, 4ml 24h and 72h as well as 8ml 24h and 72h germinative energy will be represented.

Results

Average Yield

The average yield is expressed in kg/ha. Yield data is presented for each individual trial as well as averages for regions so that evaluation can also be done on a regional basis.

To simplify evaluation all tables will also include the following statistical measurements:

LSD(T0.05): Least significant difference that is significant at a 5% level

LSD(T0.10): Least significant difference that is significant at a 10% level

CV: Coefficient of variance

Grading characteristics

The following grading characteristics are presented:

Percentage plumpness (kernels > 2.5 mm)

Percentage screenings (kernels < 2.0 mm)

Percentage total kernel nitrogen

The same statistical measurements as mentioned under average yield are also used for these parameters.

General appearance

As determined on all trials throughout the season and indicated on a scale of 1 to 9. A figure of 9 indicates line with the best general performance.

Stage of ripeness

Determined on a scale of 1 to 5, where 1 indicates the early maturing lines and 5 the late maturing lines.

Straw height (cm)

This is the general height of an individual line measured from at least two points in the plot chosen at random. The measurement is from ground level to the top of the ear, ignoring awns.

Straw strength

Determined on a scale of 1 to 5, where 5 indicate total resistance to lodging and 1 no resistance to lodging.

TABLE 1: Mean yields and yield rankings of entries in the PCT Irrigation trial, 2024

Irrigation		Mean rel.		Mean		Localities																		
Entr.no.	Entry	yield %	of std.	Yield	Rk	HARTSWATER	Yield	Rk	JAN KEMP	Yield	Rk	RIETRIVIER	Yield	Rk	DOUGLAS OOS	Yield	Rk	WES	Yield	Rk	BEESTEKRAAL	Yield	Rk	KOEDOESKOP
1	Planet	100,0		9392	25	10055	17	10537	12	11189	22	6220	25	8950	21	9183	25	9610	24					
2	Errigal	114,4		10746	2	10654	11	11069	6	12696	2	8616	2	10826	1	10520	4	10838	10					
3	18-900-766	106,1		9968	18	10531	13	10041	19	11897	14	7504	18	10134	9	9363	21	10308	20					
4	17-077-02	106,4		9994	16	9138	25	9623	24	12435	5	8539	3	9476	20	9898	15	10849	9					
5	15-060-01	106,3		9979	17	9911	20	9980	20	12004	11	7616	17	8746	23	10693	2	10906	7					
6	20-900-267	109,6		10295	9	10814	6	11211	4	11899	13	7260	22	10436	4	9628	20	10814	11					
7	16-021-01	107,5		10101	13	10542	12	10446	14	11722	15	7653	14	10015	14	10002	13	10328	18					
8	21-900-01	107,2		10073	14	10214	16	10697	11	11509	20	7325	21	9881	16	9639	19	11244	4					
9	21-900-02	110,6		10391	6	10320	15	10701	10	12075	9	8414	6	9605	19	10175	11	11444	2					
10	21-900-460	104,4		9807	22	10983	4	10869	7	11566	16	7249	23	10501	3	9300	23	8183	25					
11	19-900-1705	109,3		10262	10	10910	5	10707	9	12249	8	7884	13	10637	2	9658	18	9787	23					
12	17-141-03	111,5		10468	4	11245	2	11451	1	11560	17	8481	4	10306	5	9921	14	10313	19					
13	22-900-21	106,8		10029	15	9715	21	9703	23	11031	23	7916	12	10125	10	10170	12	11540	1					
14	22-900-24	110,6		10387	7	10720	8	11201	5	12859	1	7955	11	10212	7	9667	17	10095	22					
15	17-141-01	114,6		10766	1	11329	1	11378	2	12302	7	8101	9	9827	18	11033	1	11392	3					
16	18-155-01	108,5		10195	11	10667	9	10049	18	11515	19	8103	8	10229	6	9871	16	10930	6					
17	18-187-01	111,9		10514	3	10395	14	11332	3	12440	4	8448	5	9888	15	10342	8	10752	12					
18	18-191-02	107,8		10126	12	10772	7	10331	15	12075	10	8290	7	10028	12	9223	24	10164	21					
19	18-208-02	110,2		10351	8	10665	10	10484	13	11427	21	8642	1	10026	13	10573	3	10643	14					
20	18-211-02	103,6		9732	23	9497	23	10065	17	10884	24	8099	10	8709	24	10458	6	10412	16					
21	23-900-03	111,3		10455	5	11239	3	10243	16	12468	3	7450	20	10206	8	10478	5	11099	5					
22	23-900-05	104,6		9826	21	9973	18	10759	8	10831	25	7492	19	8930	22	10248	9	10545	15					
23	23-900-08	106,1		9962	19	9952	19	9860	22	11531	18	7637	15	9836	17	10176	10	10738	13					
24	23-900-25	105,9		9942	20	9538	22	9861	21	12326	6	7625	16	10054	11	9329	22	10861	8					
25	23-900-30	101,1		9492	24	9203	24	9521	25	11903	12	6967	24	8042	25	10407	7	10399	17					
AVERAGE				10130		10359		10485		11856		7819		9825		9998		10568						
CV						4,9		5,8		5,1		5,9		8,5		4,6		5,3						
LSD (T0.10)						542		642		645		490		884		492		597						

TABLE 2: Mean yields and yield rankings of entries in the PCT Irrigation trial Central, 2024

Irrigation		Mean rel. yield % of std.	Mean		Localities			
Entr.no.	Entry		Yield	Rk	HARTSWATER		JAN KEMP	
					Yield	Rk	Yield	Rk
1	Planet	100,0	10296	17	10055	17	10537	12
2	Errigal	105,5	10861	7	10654	11	11069	6
3	18-900-766	99,9	10286	18	10531	13	10041	19
4	17-077-02	91,1	9380	24	9138	25	9623	24
5	15-060-01	96,6	9946	19	9911	20	9980	20
6	20-900-267	107,0	11013	3	10814	6	11211	4
7	16-021-01	101,9	10494	13	10542	12	10446	14
8	21-900-01	101,5	10456	14	10214	16	10697	11
9	21-900-02	102,1	10510	12	10320	15	10701	10
10	21-900-460	106,1	10926	5	10983	4	10869	7
11	19-900-1705	105,0	10808	8	10910	5	10707	9
12	17-141-03	110,2	11348	2	11245	2	11451	1
13	22-900-21	94,3	9709	22	9715	21	9703	23
14	22-900-24	106,5	10961	4	10720	8	11201	5
15	17-141-01	110,3	11353	1	11329	1	11378	2
16	18-155-01	100,6	10358	16	10667	9	10049	18
17	18-187-01	105,5	10864	6	10395	14	11332	3
18	18-191-02	102,5	10551	11	10772	7	10331	15
19	18-208-02	102,7	10574	10	10665	10	10484	13
20	18-211-02	95,0	9781	21	9497	23	10065	17
21	23-900-03	104,3	10741	9	11239	3	10243	16
22	23-900-05	100,7	10366	15	9973	18	10759	8
23	23-900-08	96,2	9906	20	9952	19	9860	22
24	23-900-25	94,2	9699	23	9538	22	9861	21
25	23-900-30	90,9	9362	25	9203	24	9521	25
AVERAGE			10422		10359		10485	
CV					4,9		5,8	
LSD (T0.10)					542		642,0	

TABLE 3: Mean yields and yield rankings of entries in the PCT Irrigation trial South, 2024

Irrigation		Mean rel. yield % of std.	Localities							
Entr.no.	Entry		Mean		RIETRIVIER		DOUGLAS OOS		DOUGLAS WES	
			Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk
1	Planet	100,0	8786	25	11189	22	6220	25	8950	21
2	Errigal	121,9	10713	1	12696	2	8616	2	10826	1
3	18-900-766	112,1	9845	15	11897	14	7504	18	10134	9
4	17-077-02	115,5	10150	5	12435	5	8539	3	9476	20
5	15-060-01	107,6	9455	21	12004	11	7616	17	8746	23
6	20-900-267	112,3	9865	14	11899	13	7260	22	10436	4
7	16-021-01	111,5	9796	16	11722	15	7653	14	10015	14
8	21-900-01	108,9	9572	20	11509	20	7325	21	9881	16
9	21-900-02	114,2	10031	11	12075	9	8414	6	9605	19
10	21-900-460	111,2	9772	17	11566	16	7249	23	10501	3
11	19-900-1705	116,7	10257	4	12249	8	7884	13	10637	2
12	17-141-03	115,1	10116	7	11560	17	8481	4	10306	5
13	22-900-21	110,3	9691	18	11031	23	7916	12	10125	10
14	22-900-24	117,7	10342	2	12859	1	7955	11	10212	7
15	17-141-01	114,7	10077	8	12302	7	8101	9	9827	18
16	18-155-01	113,2	9949	13	11515	19	8103	8	10229	6
17	18-187-01	116,8	10259	3	12440	4	8448	5	9888	15
18	18-191-02	115,3	10131	6	12075	10	8290	7	10028	12
19	18-208-02	114,2	10032	10	11427	21	8642	1	10026	13
20	18-211-02	105,1	9231	22	10884	24	8099	10	8709	24
21	23-900-03	114,3	10041	9	12468	3	7450	20	10206	8
22	23-900-05	103,4	9084	23	10831	25	7492	19	8930	22
23	23-900-08	110,0	9668	19	11531	18	7637	15	9836	17
24	23-900-25	113,8	10002	12	12326	6	7625	16	10054	11
25	23-900-30	102,1	8971	24	11903	12	6967	24	8042	25
AVERAGE			9833		11856		7819		9825	
CV					5,1		5,9		8,5	
LSD (T0.10)					645		490		884,2	

TABLE 4: Mean yields and yield rankings of entries in the PCT Irrigation trial North, 2024

Irrigation		Mean rel. yield % of std.	Mean		Localities			
Entr.no.	Entry		Yield	Rk	BEESTEKRAAL		KOEDOESKOP	
					Yield	Rk	Yield	Rk
1	Planet	100,0	9397	24	9183	25	9610	24
2	Errigal	113,6	10679	6	10520	4	10838	10
3	18-900-766	104,7	9835	21	9363	21	10308	20
4	17-077-02	110,4	10374	15	9898	15	10849	9
5	15-060-01	114,9	10799	4	10693	2	10906	7
6	20-900-267	108,8	10221	16	9628	20	10814	11
7	16-021-01	108,2	10165	17	10002	13	10328	18
8	21-900-01	111,1	10442	10	9639	19	11244	4
9	21-900-02	115,0	10810	3	10175	11	11444	2
10	21-900-460	93,0	8741	25	9300	23	8183	25
11	19-900-1705	103,5	9722	22	9658	18	9787	23
12	17-141-03	107,7	10117	18	9921	14	10313	19
13	22-900-21	115,5	10855	2	10170	12	11540	1
14	22-900-24	105,2	9881	20	9667	17	10095	22
15	17-141-01	119,3	11213	1	11033	1	11392	3
16	18-155-01	110,7	10400	13	9871	16	10930	6
17	18-187-01	112,2	10547	8	10342	8	10752	12
18	18-191-02	103,2	9694	23	9223	24	10164	21
19	18-208-02	112,9	10608	7	10573	3	10643	14
20	18-211-02	111,1	10435	11	10458	6	10412	16
21	23-900-03	114,8	10788	5	10478	5	11099	5
22	23-900-05	110,6	10397	14	10248	9	10545	15
23	23-900-08	111,3	10457	9	10176	10	10738	13
24	23-900-25	107,4	10095	19	9329	22	10861	8
25	23-900-30	110,7	10403	12	10407	7	10399	17
AVERAGE			10283		9998		10568	
CV					4,6		5,3	
LSD (T0.10)					492		597	

TABLE 5: Mean plumpness (>2,5mm) and rankings of entries in the PCT Irrigation trial, 2024

Mean rel. plump%				Localities															
Entr.no. Entry		of std.	Mean	HARTSWATER		RIETRIVIER		DOUGLAS OOS		DOUGLAS WES		BEESTEKRAAL		KOEDOESKOP					
			Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk			
1	Planet	100,0	94	8	92	4	87	18	95	14	94	13	97	6	97	7			
2	Errigal	100,1	94	6	93	3	89	9	97	4	94	14	94	19	96	15			
3	18-900-766	98,6	92	17	90	11	85	23	95	12	91	20	96	10	97	8			
4	17-077-02	97,0	91	23	87	22	82	24	95	19	90	22	95	11	95	16			
5	15-060-01	98,6	92	18	92	6	90	4	98	1	95	11	88	25	91	25			
6	20-900-267	94,7	89	25	82	24	80	25	91	25	89	24	93	24	97	5			
7	16-021-01	98,7	92	16	90	10	88	15	96	6	91	19	96	8	93	22			
8	21-900-01	99,0	93	13	88	17	89	9	93	23	95	6	95	12	95	18			
9	21-900-02	100,1	94	7	90	9	87	19	96	11	95	9	97	4	97	3			
10	21-900-460	99,4	93	12	91	8	91	3	97	2	92	17	95	17	92	24			
11	19-900-1705	99,4	93	11	92	5	88	13	92	24	95	7	95	16	96	9			
12	17-141-03	101,1	95	2	92	7	91	1	95	17	96	3	96	9	98	1			
13	22-900-21	98,9	93	14	88	15	87	16	96	7	95	10	94	21	96	14			
14	22-900-24	100,4	94	3	89	14	90	5	97	5	96	2	94	18	97	6			
15	17-141-01	98,6	92	19	86	23	86	20	95	16	92	16	98	2	96	11			
16	18-155-01	99,9	94	9	94	1	86	22	96	8	96	5	94	20	96	12			
17	18-187-01	101,1	95	1	93	2	91	2	97	3	97	1	95	15	95	20			
18	18-191-02	100,1	94	5	90	12	89	6	96	9	95	8	95	14	97	4			
19	18-208-02	98,4	92	20	88	20	88	14	95	13	93	15	94	22	96	13			
20	18-211-02	99,8	93	10	90	13	89	8	96	10	94	12	96	7	95	17			
21	23-900-03	97,2	91	22	88	19	89	12	93	22	89	23	94	23	93	21			
22	23-900-05	98,8	92	15	88	16	89	11	95	18	92	18	98	1	93	23			
23	23-900-08	97,9	92	21	87	21	87	17	94	21	91	21	95	12	96	10			
24	23-900-25	100,3	94	4	88	18	89	7	95	15	96	4	97	3	97	2			
25	23-900-30	96,4	90	24	82	25	86	21	94	20	87	25	97	5	95	19			
AVERAGE			93		89		88		95		93		95		95				
CV					2,0		3,4		1,3		3,5		2,2		2,4				
LSD (T0.10)					1,8		3,2		1,3		3,5		2,3		2,4				

TABLE 6: Mean plumpness (>2,5mm) and rankings of entries in the PCT Irrigation trial Central, 2024

Entr.no.	Entry	Mean rel.	Mean		Localities	
		plump % of std.	Plump	Rk	HARTSWATER Plump	Rk
1	Planet	100,0	92	4	92	4
2	Errigal	100,3	93	3	93	3
3	18-900-766	97,3	90	11	90	11
4	17-077-02	93,7	87	22	87	22
5	15-060-01	99,5	92	6	92	6
6	20-900-267	88,5	82	24	82	24
7	16-021-01	97,4	90	10	90	10
8	21-900-01	95,2	88	17	88	17
9	21-900-02	97,5	90	9	90	9
10	21-900-460	98,5	91	8	91	8
11	19-900-1705	99,7	92	5	92	5
12	17-141-03	99,3	92	7	92	7
13	22-900-21	95,5	88	15	88	15
14	22-900-24	96,9	89	14	89	14
15	17-141-01	93,1	86	23	86	23
16	18-155-01	101,5	94	1	94	1
17	18-187-01	100,7	93	2	93	2
18	18-191-02	97,2	90	12	90	12
19	18-208-02	94,8	88	20	88	20
20	18-211-02	97,1	90	13	90	13
21	23-900-03	94,9	88	19	88	19
22	23-900-05	95,2	88	16	88	16
23	23-900-08	94,2	87	21	87	21
24	23-900-25	95,0	88	18	88	18
25	23-900-30	88,4	82	25	82	25
AVERAGE			89		89	
CV					2,0	
LSD (T0.10)					1,8	

TABLE 7: Mean plumpness (>2,5mm) and rankings of entries in the PCT Irrigation trial South, 2024

Entr.no.	Entry	Mean rel. plump% of std.	Mean		Localities					
			Plump	Rk	RIETRIVIER		DOUGLAS OOS		DOUGLAS WES	
					Plump	Rk	Plump	Rk	Plump	Rk
1	Planet	100,0	92	14	87	18	95	14	94	13
2	Errigal	101,4	93	8	89	9	97	4	94	14
3	18-900-766	98,6	91	20	85	23	95	12	91	20
4	17-077-02	96,9	89	24	82	24	95	19	90	22
5	15-060-01	102,5	94	3	90	4	98	1	95	11
6	20-900-267	94,1	86	25	80	25	91	25	89	24
7	16-021-01	99,9	92	16	88	15	96	6	91	19
8	21-900-01	100,7	93	11	89	9	93	23	95	6
9	21-900-02	100,6	92	12	87	19	96	11	95	9
10	21-900-460	101,7	93	7	91	3	97	2	92	17
11	19-900-1705	99,8	92	18	88	13	92	24	95	7
12	17-141-03	102,4	94	4	91	1	95	17	96	3
13	22-900-21	100,8	93	10	87	16	96	7	95	10
14	22-900-24	102,6	94	2	90	5	97	5	96	2
15	17-141-01	99,3	91	19	86	20	95	16	92	16
16	18-155-01	100,6	92	13	86	22	96	8	96	5
17	18-187-01	103,5	95	1	91	2	97	3	97	1
18	18-191-02	101,7	93	5	89	6	96	9	95	8
19	18-208-02	99,9	92	17	88	14	95	13	93	15
20	18-211-02	101,4	93	9	89	8	96	10	94	12
21	23-900-03	98,4	90	22	89	12	93	22	89	23
22	23-900-05	100,0	92	15	89	11	95	18	92	18
23	23-900-08	98,4	90	21	87	17	94	21	91	21
24	23-900-25	101,7	93	6	89	7	95	15	96	4
25	23-900-30	97,3	89	23	86	21	94	20	87	25
AVERAGE			92		88		95		93	
CV					3,4		1,3		3,5	
LSD (T0.10)					3,2		1,3		3,5	

TABLE 8: Mean plumpness (>2,5mm) and rankings of entries in the PCT Irrigation trial North, 2024

Entr.no.	Entry	Mean rel. plump% of std.	Mean		Localities			
			Plump	Rk	BEESTEKRAAL Plump	Rk	KOEDOESKOP Plump	Rk
1	Planet	100,0	97	5	97	6	97	7
2	Errigal	98,1	95	18	94	19	96	15
3	18-900-766	99,3	96	7	96	10	97	8
4	17-077-02	98,5	95	14	95	11	95	16
5	15-060-01	92,6	90	25	88	25	91	25
6	20-900-267	98,4	95	15	93	24	97	5
7	16-021-01	97,6	94	22	96	8	93	22
8	21-900-01	98,4	95	16	95	12	95	18
9	21-900-02	100,5	97	2	97	4	97	3
10	21-900-460	96,5	93	23	95	17	92	24
11	19-900-1705	98,7	95	13	95	16	96	9
12	17-141-03	100,0	97	4	96	9	98	1
13	22-900-21	97,9	95	20	94	21	96	14
14	22-900-24	98,9	96	12	94	18	97	6
15	17-141-01	100,2	97	3	98	2	96	11
16	18-155-01	98,3	95	17	94	20	96	12
17	18-187-01	97,9	95	21	95	15	95	20
18	18-191-02	99,3	96	6	95	14	97	4
19	18-208-02	97,9	95	19	94	22	96	13
20	18-211-02	99,0	96	9	96	7	95	17
21	23-900-03	96,5	93	23	94	23	93	21
22	23-900-05	98,9	96	11	98	1	93	23
23	23-900-08	98,9	96	10	95	12	96	10
24	23-900-25	100,7	97	1	97	3	97	2
25	23-900-30	99,0	96	8	97	5	95	19
AVERAGE			95		94		98	
CV					2,2		2,4	
LSD (T0.10)					2,3		2,4	

TABLE 9: Mean screenings (<2,0mm) and rankings of entries in the PCT Irrigation trial, 2024

Mean rel. screen%				Localities															
Entr.no. Entry		of std.	Screen	Rk	Mean	HARTSWATER		JAN KEMP		RIETRIVIER		DOUGLAS OOS		DOUGLAS WES		BEESTEKRAAL		KOEDOESKOP	
						Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk
1	Planet	100,0	2,1	3		1,6	2	2,0	10	3,4	17	1,3	13	0,7	2	1,9	12	3,9	15
2	Errigal	107,8	2,3	10		1,3	1	1,4	3	2,7	8	1,0	4	1,1	5	4,6	24	3,8	14
3	18-900-766	116,1	2,5	15		3,3	16	2,2	13	4,8	23	1,4	16	0,9	3	1,6	6	3,1	8
4	17-077-02	139,4	2,9	23		4,5	23	3,0	21	5,3	25	1,2	8	2,4	21	1,8	8	2,5	5
5	15-060-01	138,8	2,9	22		2,4	8	2,0	10	1,6	1	0,9	2	1,8	16	4,8	25	7,2	25
6	20-900-267	202,2	4,3	25		6,5	25	4,3	25	5,3	24	1,9	25	3,4	25	3,6	22	5,0	23
7	16-021-01	109,8	2,3	12		2,9	14	2,1	12	3,1	13	0,8	1	1,6	12	1,9	11	4,0	16
8	21-900-01	105,5	2,2	7		3,7	18	2,2	15	2,2	4	1,6	20	1,1	7	3,0	20	1,9	2
9	21-900-02	89,0	1,9	2		2,8	10	2,3	16	3,0	11	1,0	3	1,7	15	0,3	2	2,1	3
10	21-900-460	101,8	2,2	5		2,1	6	1,8	7	1,6	2	1,2	9	1,2	8	2,5	16	4,7	22
11	19-900-1705	105,6	2,2	8		2,1	7	1,6	5	3,5	18	1,7	23	0,5	1	1,7	7	4,6	21
12	17-141-03	78,5	1,7	1		1,7	3	0,2	1	2,7	7	1,5	17	1,2	9	2,1	14	2,3	4
13	22-900-21	132,7	2,8	21		4,0	22	2,8	20	4,8	22	1,2	10	2,0	18	1,8	10	3,1	7
14	22-900-24	111,2	2,4	13		3,2	15	1,8	8	2,6	6	1,1	6	1,0	4	3,8	23	3,0	6
15	17-141-01	107,5	2,3	9		3,8	19	1,6	6	3,9	21	1,3	13	2,3	20	1,8	8	1,2	1
16	18-155-01	109,2	2,3	11		1,8	4	1,1	2	3,3	15	1,3	12	2,1	19	3,3	21	3,2	10
17	18-187-01	101,8	2,2	4		1,9	5	1,5	4	2,1	3	1,1	5	1,6	13	2,7	17	4,3	20
18	18-191-02	121,4	2,6	17		2,8	11	3,3	22	3,0	12	1,1	7	1,7	14	2,8	18	3,2	11
19	18-208-02	119,2	2,5	16		2,9	13	2,2	14	3,7	20	1,3	13	1,4	11	2,1	15	4,1	18
20	18-211-02	104,9	2,2	6		2,7	9	1,9	9	2,8	9	1,2	10	1,3	10	2,0	13	3,7	13
21	23-900-03	131,5	2,8	20		3,8	20	2,5	18	3,5	19	1,6	19	2,5	22	1,4	5	4,2	19
22	23-900-05	129,6	2,7	18		2,8	11	2,6	19	2,9	10	1,6	18	1,8	17	1,1	4	6,4	24
23	23-900-08	146,9	3,1	24		3,8	20	4,0	24	3,4	16	1,6	21	2,9	23	3,0	19	3,2	9
24	23-900-25	112,7	2,4	14		3,4	17	2,3	17	3,3	14	1,9	24	1,1	5	0,6	3	4,1	17
25	23-900-30	129,6	2,7	7		5,2	2	3,4	3	2,3	21	1,7	4	3,1	2	0,2	25	3,5	14
AVERAGE			2,5			3,1		2,2		3,2		1,3		1,7		2,2		3,7	
CV						20,9		27,1		25,3		30,3		54,8		63,8		48,3	
LSD (T0.10)						0,7		0,6		0,9		0,4		1,0		1,5		1,9	

TABLE 10: Mean kernel nitrogen and rankings of entries in the PCT Irrigation trial, 2024

Mean rel.			Localities															
Entr.no.	Entry	TN % of std.	Mean		HARTSWATER		JAN KEMP		RIETRIVIER		DOUGLAS OOS		DOUGLAS WES		BEESTEKRAAL		KOEDOESKOP	
			TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk
1	Planet	100,0	1,89	15	2,09	20	1,93	11	1,71	22	1,70	22	1,83	2	2,03	16	1,95	4
2	Errigal	97,7	1,85	23	1,96	24	1,95	6	1,82	9	1,72	17	1,69	17	1,95	23	1,84	22
3	18-900-766	101,1	1,91	7	2,12	12	1,84	23	1,89	2	1,76	9	1,84	1	2,09	10	1,85	19
4	17-077-02	99,3	1,88	19	2,05	21	1,90	14	1,63	24	1,84	2	1,82	4	2,02	17	1,89	12
5	15-060-01	101,1	1,91	6	2,20	2	1,86	20	1,82	9	1,74	14	1,83	2	2,04	14	1,90	10
6	20-900-267	100,3	1,90	11	2,12	12	1,89	15	1,76	18	1,71	19	1,67	21	2,12	6	2,01	3
7	16-021-01	99,6	1,88	16	2,14	7	1,83	25	1,78	16	1,71	19	1,75	7	2,04	14	1,94	6
8	21-900-01	101,7	1,92	4	2,12	12	1,89	15	1,89	2	1,78	7	1,75	7	2,17	5	1,86	16
9	21-900-02	99,5	1,88	18	2,13	8	1,95	6	1,84	7	1,75	11	1,72	12	1,99	22	1,80	23
10	21-900-460	101,1	1,91	8	2,13	8	1,96	4	1,63	24	1,66	25	1,62	23	2,24	1	2,14	1
11	19-900-1705	102,0	1,93	3	2,13	8	1,94	8	1,70	23	1,76	9	1,71	14	2,18	3	2,09	2
12	17-141-03	99,2	1,88	20	1,86	25	2,02	1	1,74	19	1,75	11	1,61	24	2,22	2	1,93	7
13	22-900-21	102,3	1,94	2	2,16	4	1,91	13	1,85	6	1,81	5	1,79	5	2,11	8	1,92	8
14	22-900-24	100,0	1,89	13	2,10	18	2,00	2	1,79	13	1,73	15	1,64	22	2,08	11	1,90	10
15	17-141-01	98,6	1,87	22	2,04	22	1,96	4	1,73	21	1,75	11	1,71	14	2,01	20	1,86	16
16	18-155-01	100,1	1,89	12	2,11	15	1,86	20	1,92	1	1,84	2	1,71	14	1,95	23	1,86	16
17	18-187-01	100,8	1,91	9	2,15	6	1,97	3	1,87	5	1,72	17	1,73	10	2,02	17	1,88	13
18	18-191-02	100,6	1,90	10	2,13	8	1,85	22	1,79	13	1,73	15	1,69	17	2,18	3	1,95	4
19	18-208-02	101,5	1,92	5	2,16	4	1,94	8	1,82	9	1,80	6	1,78	6	2,07	12	1,87	14
20	18-211-02	102,9	1,95	1	2,27	1	1,84	23	1,88	4	1,86	1	1,74	9	2,12	6	1,91	9
21	23-900-03	99,6	1,88	16	2,18	3	1,94	8	1,74	19	1,77	8	1,69	17	2,02	17	1,85	19
22	23-900-05	100,0	1,89	13	2,11	15	1,93	11	1,77	17	1,84	2	1,68	20	2,06	13	1,85	19
23	23-900-08	98,9	1,87	21	2,03	23	1,88	18	1,79	13	1,71	19	1,72	12	2,10	9	1,87	14
24	23-900-25	97,3	1,84	24	2,10	18	1,89	15	1,80	12	1,70	22	1,61	24	2,01	20	1,77	25
25	23-900-30	96,3	1,82	25	2,11	15	1,87	19	1,83	8	1,70	22	1,73	10	1,71	25	1,80	23
AVERAGE			1,89		2,11		1,91		1,79		1,75		1,72		2,06		1,90	
CV					2,4		4,0		6,5		2,6		5,8		3,6		2,8	
LSD (T0.10)					0,05		0,08		0,12		0,05		0,11		0,08		0,06	

TABLE 11: Mean kernel nitrogen and rankings of entries in the PCT Irrigation trial Central, 2024

Entr.no.	Entry	Mean rel.			Localities			
		TN %	Mean		HARTSWATER		JAN KEMP	
		of std.	TN	Rk	TN	Rk	TN	Rk
1	Planet	100,0	2,01	12	2,09	20	1,93	11
2	Errigal	97,3	1,96	23	1,96	24	1,95	6
3	18-900-766	98,5	1,98	21	2,12	12	1,84	23
4	17-077-02	98,3	1,98	22	2,05	21	1,90	14
5	15-060-01	101,0	2,03	10	2,20	2	1,86	20
6	20-900-267	99,8	2,01	13	2,12	12	1,89	15
7	16-021-01	98,8	1,99	19	2,14	7	1,83	25
8	21-900-01	99,8	2,01	13	2,12	12	1,89	15
9	21-900-02	101,5	2,04	7	2,13	8	1,95	6
10	21-900-460	101,7	2,05	6	2,13	8	1,96	4
11	19-900-1705	101,2	2,04	8	2,13	8	1,94	8
12	17-141-03	96,5	1,94	25	1,86	25	2,02	1
13	22-900-21	101,2	2,04	8	2,16	4	1,91	13
14	22-900-24	102,0	2,05	4	2,10	18	2,00	2
15	17-141-01	99,5	2,00	15	2,04	22	1,96	4
16	18-155-01	98,8	1,99	20	2,11	15	1,86	20
17	18-187-01	102,5	2,06	1	2,15	6	1,97	3
18	18-191-02	99,0	1,99	17	2,13	8	1,85	22
19	18-208-02	102,0	2,05	4	2,16	4	1,94	8
20	18-211-02	102,2	2,06	3	2,27	1	1,84	23
21	23-900-03	102,5	2,06	1	2,18	3	1,94	8
22	23-900-05	100,5	2,02	11	2,11	15	1,93	11
23	23-900-08	97,3	1,96	24	2,03	23	1,88	18
24	23-900-25	99,3	2,00	16	2,10	18	1,89	15
25	23-900-30	99,0	1,99	17	2,11	15	1,87	19
AVERAGE			2,01		2,11		1,91	
CV					2,4		4,0	
LSD (T0.10)					0,05		0,08	

TABLE 12: Mean kernel nitrogen and rankings of entries in the PCT Irrigation trial South, 2024

Entr.no.	Entry	Mean rel.			Localities					
		TN %	Mean		RIETRIVIER		DOUGLAS OOS		DOUGLAS WES	
		of std.	TN	Rk	TN	Rk	TN	Rk	TN	Rk
1	Planet	100,0	1,31	13	1,71	22	1,70	23	1,83	2
2	Errigal	99,8	1,31	15	1,82	9	1,72	18	1,69	17
3	18-900-766	104,8	1,37	1	1,89	2	1,76	9	1,84	1
4	17-077-02	101,0	1,32	10	1,63	24	1,84	2	1,82	4
5	15-060-01	102,9	1,35	7	1,82	9	1,74	14	1,83	2
6	20-900-267	98,1	1,29	22	1,76	18	1,71	20	1,67	21
7	16-021-01	100,0	1,31	13	1,78	16	1,71	20	1,75	7
8	21-900-01	103,4	1,36	5	1,89	2	1,78	7	1,75	7
9	21-900-02	101,3	1,33	9	1,84	7	1,75	11	1,72	12
10	21-900-460	93,7	1,23	25	1,63	24	1,66	25	1,62	23
11	19-900-1705	98,7	1,29	20	1,70	23	1,76	9	1,71	14
12	17-141-03	97,3	1,28	24	1,74	19	1,75	11	1,61	24
13	22-900-21	104,0	1,36	4	1,85	6	1,81	5	1,79	5
14	22-900-24	98,5	1,29	21	1,79	13	1,73	15	1,64	22
15	17-141-01	99,0	1,30	19	1,73	21	1,75	11	1,71	14
16	18-155-01	104,4	1,37	3	1,92	1	1,84	2	1,71	14
17	18-187-01	101,5	1,33	8	1,87	5	1,72	18	1,73	10
18	18-191-02	99,4	1,30	17	1,79	13	1,73	15	1,69	17
19	18-208-02	103,1	1,35	6	1,82	9	1,80	6	1,78	6
20	18-211-02	104,6	1,37	2	1,88	4	1,86	1	1,74	9
21	23-900-03	99,2	1,30	18	1,74	19	1,77	8	1,69	17
22	23-900-05	101,0	1,32	10	1,77	17	1,84	2	1,68	20
23	23-900-08	99,6	1,31	16	1,79	13	1,71	20	1,72	12
24	23-900-25	97,5	1,28	23	1,80	12	1,70	23	1,61	24
25	23-900-30	101,0	1,32	10	1,83	8	1,73	15	1,73	10
AVERAGE			1,32		1,79		1,75		1,72	
CV			5,0		6,5		2,6		5,8	
LSD (T0.10)			0,08		0,12		0,05		0,11	

TABLE 13: Mean kernel nitrogen and rankings of entries in the PCT Irrigation trial North, 2024

		Mean rel.			Localities			
		TN %	Mean		BEESTEKRAAL		KOEDOESKOP	
Entr.no.	Entry	of std.	TN	Rk	TN	Rk	TN	Rk
1	Planet	100,0	1,99	11	2,03	14	1,95	12
2	Errigal	95,2	1,90	22	1,95	5	1,84	8
3	18-900-766	99,0	1,97	13	2,09	8	1,85	4
4	17-077-02	98,2	1,96	16	2,02	3	1,89	1
5	15-060-01	99,0	1,97	13	2,04	1	1,90	2
6	20-900-267	103,8	2,07	4	2,12	13	2,01	15
7	16-021-01	100,0	1,99	9	2,04	11	1,94	7
8	21-900-01	101,3	2,02	6	2,17	8	1,86	4
9	21-900-02	95,2	1,90	22	1,99	8	1,80	11
10	21-900-460	110,1	2,19	1	2,24	3	2,14	8
11	19-900-1705	107,3	2,14	2	2,18	6	2,09	4
12	17-141-03	104,3	2,08	3	2,22	25	1,93	18
13	22-900-21	101,3	2,02	8	2,11	20	1,92	18
14	22-900-24	100,0	1,99	9	2,08	23	1,90	14
15	17-141-01	97,2	1,94	19	2,01	22	1,86	23
16	18-155-01	95,7	1,91	21	1,95	7	1,86	13
17	18-187-01	98,0	1,95	18	2,02	14	1,88	16
18	18-191-02	103,8	2,07	4	2,18	24	1,95	17
19	18-208-02	99,0	1,97	13	2,07	11	1,87	8
20	18-211-02	101,3	2,02	6	2,12	19	1,91	18
21	23-900-03	97,2	1,94	19	2,02	2	1,85	2
22	23-900-05	98,2	1,96	16	2,06	17	1,85	23
23	23-900-08	99,7	1,99	12	2,10	20	1,87	18
24	23-900-25	95,0	1,89	24	2,01	18	1,77	25
25	23-900-30	88,2	1,76	25	1,71	14	1,80	22
AVERAGE			1,98		2,06		1,90	
CV			5,5		3,6		2,4	
LSD (T0.10)			0,1		0,1		2,4	

TABLE 14: Mean germinative energy (4ml; 24h) and rankings of entries in the PCT Irrigation trial, 2024

Entr.no. Entry	Mean rel. plump%		Mean		HARTSWATER		JAN KEMP		RIETRIVIER		DOUGLAS OOS		DOUGLAS WES		BEESTEKRAAL		KOEDOESKOP	
	of std.	OE 4ml/24h	Rk	OE 4ml/24h	OE 4ml/24h	Rk	OE 4ml/24h	OE 4ml/24h	OE 4ml/24h	Rk	OE 4ml/24h	Rk	OE 4ml/24h	Rk	OE 4ml/24h	Rk	OE 4ml/24h	Rk
1 Planet	100,0	53	21	80	16	22	38	16	24	25	59	5	48	24	67	5		
2 Errigal	118,0	62	6	82	9	5	44	10	35	23	57	6	79	3	66	6		
3 18-900-766	113,7	60	13	84	5	1	35	20	44	17	37	25	78	5	64	25		
4 17-077-02	126,5	66	1	91	1	12	37	17	62	4	59	4	75	7	78	4		
5 15-060-01	116,4	61	9	82	11	11	50	2	54	9	44	17	69	11	65	17		
6 20-900-267	111,3	58	16	83	8	20	42	11	62	5	51	9	59	17	56	9		
7 16-021-01	120,9	63	4	80	15	15	31	25	71	2	53	8	85	1	64	8		
8 21-900-01	118,3	62	5	83	7	4	49	3	77	1	65	2	42	25	47	2		
9 21-900-02	115,7	61	11	77	20	16	47	7	52	11	47	13	78	4	66	13		
10 21-900-460	118,0	62	6	75	22	21	46	8	45	16	74	1	82	2	57	1		
11 19-900-1705	99,1	52	23	73	24	24	33	21	39	20	40	24	61	16	71	24		
12 17-141-03	124,4	65	2	81	12	2	47	6	69	3	46	14	65	14	76	14		
13 22-900-21	99,3	52	22	79	17	18	31	24	38	21	45	16	58	18	57	16		
14 22-900-24	115,9	61	10	77	19	8	40	14	51	12	45	15	72	10	73	15		
15 17-141-01	95,1	50	24	78	18	23	37	18	54	8	41	23	55	20	32	23		
16 18-155-01	110,1	58	18	86	3	19	37	19	35	22	42	19	75	8	71	19		
17 18-187-01	117,4	62	8	83	6	14	39	15	46	15	61	3	72	9	69	3		
18 18-191-02	124,1	65	3	84	4	13	42	12	60	6	57	7	61	15	89	7		
19 18-208-02	109,4	57	19	81	13	3	40	13	40	19	44	18	76	6	48	18		
20 18-211-02	105,6	55	20	82	10	7	32	23	47	14	42	21	50	23	67	21		
21 23-900-03	112,3	59	14	75	23	10	33	22	53	10	42	22	68	12	77	22		
22 23-900-05	111,3	58	15	81	14	6	47	5	56	7	49	12	56	19	52	12		
23 23-900-08	111,0	58	17	76	21	9	59	1	43	18	42	19	50	22	71	19		
24 23-900-25	115,1	60	12	87	2	17	49	4	51	13	50	10	67	13	61	10		
25 23-900-30	90,7	48	25	65	25	25	44	9	30	24	50	11	53	21	52	11		
AVERAGE		59		80		62	41		49		50		65		64			
CV				8,0		14,3	24,6		23,7		18,1		19,7		23,9			
LSD (T0.10)				6,8		9,4	10,8		12,4		9,5		13,6		16,2			

TABLE 15: Mean germinative energy (4ml; 72h) and rankings of entries in the PCT Irrigation trial, 2024

Entr.no. Entry		Mean rel. plump%		Mean		HARTSWATER		JAN KEMP		RIETRIVIER		Localities		DOUGLAS WES		BEESTEKRAAL		KOEDOESKOP		
		of std.		OE	4ml/72h	Rk	OE	4ml/72h	Rk	OE	4ml/72h	Rk	OE	4ml/72h	Rk	OE	4ml/72h	Rk	OE	4ml/72h
1	Planet	100,0		95		11	98	6	100	1	93	11	87	23	92	9	98	8	97	16
2	Errigal	100,6		95		6	98	2	95	15	93	9	98	7	96	1	90	24	97	14
3	18-900-766	101,0		96		5	94	22	95	11	94	6	93	19	94	5	100	1	100	1
4	17-077-02	101,9		97		2	98	4	96	9	90	14	97	8	96	2	100	1	98	3
5	15-060-01	102,7		97		1	95	17	98	5	99	1	100	1	91	14	100	3	99	2
6	20-900-267	99,1		94		16	95	16	91	21	92	13	93	16	93	7	96	18	97	11
7	16-021-01	99,9		95		13	97	9	94	19	92	12	95	14	90	19	97	14	98	10
8	21-900-01	101,1		96		4	98	3	98	3	95	4	99	6	90	18	94	22	96	17
9	21-900-02	99,1		94		17	96	13	94	18	90	16	95	15	89	21	96	16	98	6
10	21-900-460	98,6		93		20	95	18	86	24	98	2	88	22	90	20	100	4	97	12
11	19-900-1705	94,1		89		24	96	10	88	23	86	22	73	25	88	23	97	13	96	21
12	17-141-03	101,5		96		3	99	1	94	17	93	8	99	5	94	6	98	9	96	20
13	22-900-21	97,8		93		23	94	20	86	25	89	18	93	17	93	8	96	19	98	9
14	22-900-24	100,2		95		10	97	7	98	6	87	21	100	2	87	25	99	5	98	7
15	17-141-01	99,9		95		12	97	8	99	2	90	17	96	11	92	10	96	15	93	25
16	18-155-01	98,5		93		21	96	12	95	14	90	15	93	20	87	24	98	11	95	22
17	18-187-01	97,9		93		22	96	11	90	22	79	25	99	4	91	15	98	10	96	19
18	18-191-02	100,5		95		7	96	15	95	12	93	10	96	12	91	16	98	7	98	4
19	18-208-02	99,7		95		14	93	24	94	16	94	7	96	10	95	3	96	20	93	24
20	18-211-02	99,0		94		19	98	5	98	4	85	23	92	21	90	17	96	21	98	5
21	23-900-03	99,0		94		18	94	19	95	13	88	20	97	9	88	22	99	6	97	13
22	23-900-05	99,6		94		15	93	23	96	10	94	5	95	13	91	13	93	23	98	8
23	23-900-08	100,3		95		9	94	21	97	8	97	3	93	18	91	12	96	17	97	15
24	23-900-25	100,4		95		8	96	14	97	7	88	19	99	3	92	11	98	12	96	18
25	23-900-30	93,4		89		25	91	25	91	20	84	24	79	24	95	4	86	25	95	23
AVERAGE				94			96		94		91		94		91		97		97	
CV							2,2		4,6		6,2		4,0		4,9		3,4		2,7	
LSD (T0.10)							2,2		4,7		6,0		4,0		4,8		3,5		2,7	

TABLE 16: Mean germinative energy (8ml; 24h) and rankings of entries in the PCT Irrigation trial, 2024

Entr.no. Entry		Mean rel. plump% of std.		Mean OE 8ml/24h		HARTSWATER 42,0		JAN KEMP OE 8ml/24h		RIETRIVIER OE 8ml/24h		Localities				DOUGLAS WES OE 8ml/24h		BEESTEKRAAL OE 8ml/24h		KOEDOESKOP OE 8ml/24h	
												DOUGLAS OOS		DOUGLAS							
				Rk		Rk		OE 8ml/24h	Rk	OE 8ml/24h	Rk	OE 8ml/24h	Rk	OE 8ml/24h	Rk	OE 8ml/24h	Rk	OE 8ml/24h	Rk	OE 8ml/24h	
1	Planet	100,0	52	14	61	18	59	15	50	8	31	17	49	12	65	7	50	20			
2	Errigal	138,0	72	1	79	1	73	2	80	1	44	8	63	3	84	1	80	1			
3	18-900-766	92,8	48	21	63	14	56	18	48	12	37	13	37	22	48	20	50	19			
4	17-077-02	103,6	54	10	68	9	60	13	45	18	38	12	45	15	66	5	56	12			
5	15-060-01	104,7	55	8	63	13	57	17	50	11	53	1	40	19	63	9	56	13			
6	20-900-267	108,9	57	6	60	19	63	7	50	9	40	9	60	5	72	2	52	16			
7	16-021-01	108,9	57	5	59	20	61	12	53	5	45	6	44	17	61	10	74	2			
8	21-900-01	117,0	61	2	74	4	77	1	79	2	49	3	64	2	39	25	45	21			
9	21-900-02	112,9	59	4	65	10	66	4	64	4	49	2	51	10	65	6	52	17			
10	21-900-460	114,6	60	3	69	7	62	9	71	3	23	20	65	1	57	14	71	3			
11	19-900-1705	82,4	43	24	62	15	51	22	47	14	16	24	33	23	49	19	42	24			
12	17-141-03	87,7	46	22	55	22	55	19	31	23	35	15	41	18	46	21	57	11			
13	22-900-21	97,4	51	19	64	12	62	8	47	16	30	18	53	8	57	13	42	23			
14	22-900-24	96,8	50	20	51	23	61	10	44	20	23	23	46	14	67	4	62	5			
15	17-141-01	86,3	45	23	47	24	52	21	44	19	27	19	29	25	58	12	58	10			
16	18-155-01	100,3	52	13	75	3	61	10	40	22	23	21	39	20	70	3	58	9			
17	18-187-01	108,1	56	7	70	6	69	3	52	6	39	10	56	6	52	17	55	15			
18	18-191-02	103,7	54	9	72	5	64	6	43	21	46	4	50	11	53	16	51	18			
19	18-208-02	97,6	51	18	65	11	59	16	47	13	39	11	45	16	58	11	43	22			
20	18-211-02	100,6	52	12	68	8	65	5	51	7	23	22	55	7	45	22	59	7			
21	23-900-03	99,2	52	16	55	21	50	23	50	10	45	5	39	21	56	15	67	4			
22	23-900-05	101,5	53	11	78	2	49	24	47	15	35	14	62	4	41	24	58	8			
23	23-900-08	98,4	51	17	61	17	60	14	46	17	35	16	48	13	50	18	60	6			
24	23-900-25	99,5	52	15	61	16	55	20	31	24	44	7	52	9	64	8	55	14			
25	23-900-30	62,7	33	25	46	25	37	25	29	25	10	25	30	24	41	23	35	25			
AVERAGE			53		64		59		49		35		48		57		56				
CV					10,1		10,9		17,8		23,6		20,7		18,2		11,9				
LSD (T0.10)					6,8		6,8		9,4		8,8		10,5		11,0		7,0				

TABLE 17: Mean germinative energy (8ml; 72h) and rankings of entries in the PCT Irrigation trial, 2024

Entr.no.		Entry	Mean rel. plump%		Mean		HARTSWATER		JAN KEMP		RIETRIVIER		Localities				DOUGLAS WES		BEESTEKRAAL		KOEDOESKOP	
			of std.	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	OE 8ml/72h	Rk	
1		Planet	100,0	72	11	74	17	73	21	77	8	59	11	70	12	83	6	70	20			
2		Errigal	121,5	88	1	84	3	90	2	91	1	74	2	82	1	100	1	92	1			
3		18-900-766	95,8	69	17	75	16	82	8	75	14	47	18	68	15	59	22	79	8			
4		17-077-02	104,2	75	5	81	8	83	5	74	15	61	9	66	17	86	2	76	14			
5		15-060-01	107,5	78	2	82	6	81	10	80	5	78	1	70	13	77	12	77	12			
6		20-900-267	103,4	75	8	70	20	80	13	78	6	65	6	75	7	84	5	72	18			
7		16-021-01	105,0	76	3	69	21	80	12	81	3	66	4	71	10	80	9	83	4			
8		21-900-01	100,7	73	9	88	1	92	1	81	3	59	10	78	3	47	25	64	22			
9		21-900-02	103,5	75	7	75	15	84	3	78	6	66	5	65	18	78	10	76	13			
10		21-900-460	103,5	75	6	80	9	77	14	82	2	46	19	77	5	85	4	78	10			
11		19-900-1705	82,8	60	24	71	18	63	24	70	17	28	25	64	22	62	20	61	23			
12		17-141-03	95,7	69	18	76	13	74	19	63	22	56	12	81	2	58	23	77	11			
13		22-900-21	94,7	68	20	77	12	75	16	74	15	39	23	75	6	71	15	67	21			
14		22-900-24	97,6	71	14	63	22	82	6	59	23	51	15	67	16	85	3	86	3			
15		17-141-01	91,8	66	21	62	24	72	22	76	10	42	21	51	24	81	8	81	6			
16		18-155-01	96,1	69	16	84	5	80	11	70	17	41	22	65	21	73	13	73	17			
17		18-187-01	104,4	75	4	81	7	83	4	67	20	70	3	78	4	68	16	82	5			
18		18-191-02	95,7	69	19	84	4	75	17	68	19	54	13	72	9	60	21	72	19			
19		18-208-02	91,6	66	23	78	11	74	18	66	21	50	17	65	18	72	14	57	24			
20		18-211-02	99,2	72	13	76	14	81	9	75	12	54	14	69	14	67	17	80	7			
21		23-900-03	91,7	66	22	63	23	74	20	75	11	44	20	57	23	78	11	73	16			
22		23-900-05	99,5	72	12	85	2	69	23	75	12	62	8	72	8	65	18	75	15			
23		23-900-08	97,5	70	15	70	19	82	7	76	9	50	16	65	20	62	19	86	2			
24		23-900-25	100,5	73	10	79	10	77	15	57	24	63	7	71	11	82	7	79	9			
25		23-900-30	72,7	53	25	58	25	59	25	57	24	36	24	47	25	54	24	56	25			
GEMIDD/AVERAGE				71		75		78		73		55		69		73		75				
KV/CV						6,4		7,8		13,5		15,9		12,1		12,3		9,1				
KBV/LSD (T0.10)						5,1		6,4		10,4		9,2		8,9		9,5		7,3				

TABLE 18: Agronomic performance of the entries in the PCT Irrigation trial Central, 2024

Entry nr.	Entry	General appearance	Stage of Ripeness	Plant Height (cm)	Resistance to Lodging
1	Planet	5,4	3,0	96	5,0
2	Errigal	5,9	3,4	98	5,0
3	18-900-766	5,5	3,1	75	5,0
4	17-077-02	5,0	3,3	83	5,0
5	15-060-01	6,0	2,9	87	5,0
6	20-900-267	5,9	3,2	90	5,0
7	16-021-01	5,8	3,0	82	5,0
8	21-900-01	5,5	3,2	86	5,0
9	21-900-02	5,9	3,2	83	5,0
10	21-900-460	5,7	3,1	89	5,0
11	19-900-1705	5,8	3,1	70	5,0
12	17-141-03	5,9	3,5	78	5,0
13	22-900-21	5,6	3,1	86	5,0
14	22-900-24	5,7	3,1	88	5,0
15	17-141-01	5,9	3,2	92	5,0
16	18-155-01	5,0	2,9	93	5,0
17	18-187-01	5,6	3,1	99	5,0
18	18-191-02	5,8	3,1	91	5,0
19	18-208-02	5,2	3,1	96	5,0
20	18-211-02	6,6	2,7	89	5,0
21	23-900-03	5,6	3,2	90	5,0
22	23-900-05	5,7	2,8	91	5,0
23	23-900-08	5,7	3,1	86	5,0
24	23-900-25	5,9	3,1	82	5,0
25	23-900-30	6,4	3,1	86	5,0

(Localities:Hartswater & Jan Kempdorp)

Legend:

General appearance

9 - Good

1 - Bad

Straw Length

S - Short

MS - Medium short

M - Medium

ML - Medium long

L - Long

Stage of Ripeness

1 - Early

5 - Late

Straw strength

1 - No resistance to lodging

5 - Total resistance to lodging

TABLE 19: Agronomic performance of the entries in the PCT Irrigation trial South, 2024

Entry nr.	Entry	General appearance	Stage of Ripeness	Plant Height (cm)	Resistance to Lodging
1	Planet	5,2	3,3	90	5,0
2	Errigal	7,2	3,8	91	5,0
3	18-900-766	5,6	3,6	87	5,0
4	17-077-02	5,7	3,3	87	5,0
5	15-060-01	5,5	3,3	87	5,0
6	20-900-267	5,9	3,5	85	5,0
7	16-021-01	5,8	3,5	84	5,0
8	21-900-01	6,0	3,7	88	5,0
9	21-900-02	5,8	3,7	83	5,0
10	21-900-460	6,0	3,5	89	5,0
11	19-900-1705	5,9	3,6	93	5,0
12	17-141-03	5,9	3,8	89	5,0
13	22-900-21	6,2	3,7	89	5,0
14	22-900-24	6,0	3,6	86	5,0
15	17-141-01	6,5	3,7	86	5,0
16	18-155-01	6,4	3,8	94	5,0
17	18-187-01	5,6	3,6	89	5,0
18	18-191-02	5,7	3,8	90	5,0
19	18-208-02	6,1	3,7	91	5,0
20	18-211-02	5,8	3,5	90	5,0
21	23-900-03	6,7	3,7	85	5,0
22	23-900-05	5,1	3,3	87	5,0
23	23-900-08	5,8	3,6	90	5,0
24	23-900-25	6,6	3,8	90	5,0
25	23-900-30	5,3	3,7	86	5,0

(Localities:Rietrivier, Douglas-Oos & Douglas-Wes)

Legend:

General appearance

9 - Good

1 - Bad

Straw Length

S - Short

MS - Medium short

M - Medium

ML - Medium long

L - Long

Stage of Ripeness

1 - Early

5 - Late

Straw strength

1 - No resistance to lodging

5 - Total resistance to lodging

TABLE 20: Agronomic performance of the entries in the PCT Irrigation trial North, 2024

Entry nr.	Entry	General appearance	Stage of Ripeness	Plant Height (cm)	Resistance to Lodging
1	Planet	5,0	2,8	72	5,0
2	Errigal	6,8	3,5	75	5,0
3	18-900-766	5,3	3,1	73	5,0
4	17-077-02	5,9	2,7	74	5,0
5	15-060-01	4,9	3,1	67	5,0
6	20-900-267	5,0	3,2	73	5,0
7	16-021-01	5,4	2,9	74	5,0
8	21-900-01	5,6	3,2	79	5,0
9	21-900-02	5,6	3,2	75	5,0
10	21-900-460	6,0	3,3	74	5,0
11	19-900-1705	5,5	2,8	70	5,0
12	17-141-03	5,4	3,1	72	5,0
13	22-900-21	5,4	3,4	70	5,0
14	22-900-24	5,6	3,3	77	5,0
15	17-141-01	5,8	3,2	79	5,0
16	18-155-01	5,8	3,0	73	5,0
17	18-187-01	5,6	3,3	80	5,0
18	18-191-02	5,5	3,3	73	5,0
19	18-208-02	5,6	3,2	75	5,0
20	18-211-02	5,3	3,3	67	5,0
21	23-900-03	5,1	3,1	74	5,0
22	23-900-05	6,1	3,1	79	5,0
23	23-900-08	4,9	3,5	71	5,0
24	23-900-25	6,1	3,3	80	4,8
25	23-900-30	5,5	3,3	76	5,0

(Localities:Beestekraal & Koedoeskop)

Legend:

General appearance

9 - Good

1 - Bad

Straw Length

S - Short

MS - Medium short

M - Medium

ML - Medium long

L - Long

Stage of Ripeness

1 - Early

5 - Late

Straw strength

1 - No resistance to lodging

5 - Total resistance to lodging

Table 21: Production statistics of the trial localities for the Line Evaluation Trial in the Irrigation area, 2024

AREA	LOCALITIES	PLANTING DATE	ROTATION 2023/24 SUMMER CROP	PLANT DENSITY	FERTILIZER		TOTAL (N)	HERBICIDE			FUNGICIDE/INSECTICIDE	
					PLANTING	TOP		PRE PLANT	POST PLANT	POST PLANT	1ST APPLICATION	2ND APPLICATION
Irrigation Sentraal	Hartswater	11 June 2024	Maize	70kg/ha	132	27	150	NONE	BROMOTRIL, MCPA	NONE	DEUETTE STAR	AVIATOR
	Jan Kempdorp	7 June 2024	Popcorn	70kg/ha	124	43	167	NONE	BROMOTRIL, MCPA	NONE	DEUETTE STAR	NONE
Irrigation Suid	Rietrivier	13 June 2024	Maize	70kg/ha	49	85	134	NONE	RAMATREX	STOMMAX, LI 700	NONE	NONE
	Douglas-Oos	18 June 2024	Maize	70kg/ha	27	122,7	149,7	NONE	RAMATREX	NONE	AVIATOR	NONE
	Douglas-Wes	14 June 2024	Maize	70kg/ha	60	101	161	NONE	RAMATREX	NONE	AVIATOR	NONE
Irrigation Noord	Koedoeskop	25 May 2024	Soja Beans	70kg/ha	27,5	70	90	NONE	RESOLVE AXIAL	NONE	CUSTODIA	NONE
	Beestekraal	25 May 2024	Soja Beans	70kg/ha	60	20	80	NONE	RESOLVE AXIAL	NONE	CUSTODIA	NONE

TABLE 22: List of entries in the Line Evaluation trial in the Irrigation area, 2024

Entr.no.	Entry	Years in PCT	Program
1	Planet	Control	SABBI
2	Errigal	6	SABBI
3	18-900-766	6	SABBI
4	17-077-02	5	SABBI
5	15-060-01	4	SABBI
6	20-900-267	3	SABBI
7	16-021-01	3	SABBI
8	21-900-01	3	SABBI
9	21-900-02	3	SABBI
10	21-900-460	2	SABBI
11	19-900-1705	2	SABBI
12	17-141-03	2	SABBI
13	22-900-21	2	SABBI
14	22-900-24	1	SABBI
15	17-141-01	1	SABBI
16	18-155-01	1	SABBI
17	18-187-01	1	SABBI
18	18-191-02	1	SABBI
19	18-208-02	1	SABBI
20	18-211-02	1	SABBI
21	23-900-03	1	SABBI
22	23-900-05	1	SABBI
23	23-900-08	1	SABBI
24	23-900-25	1	SABBI
25	23-900-30	1	SABBI

Figure 1: Average grain yield and quality parameters for the PCT trials in the Irrigation area, 2024.

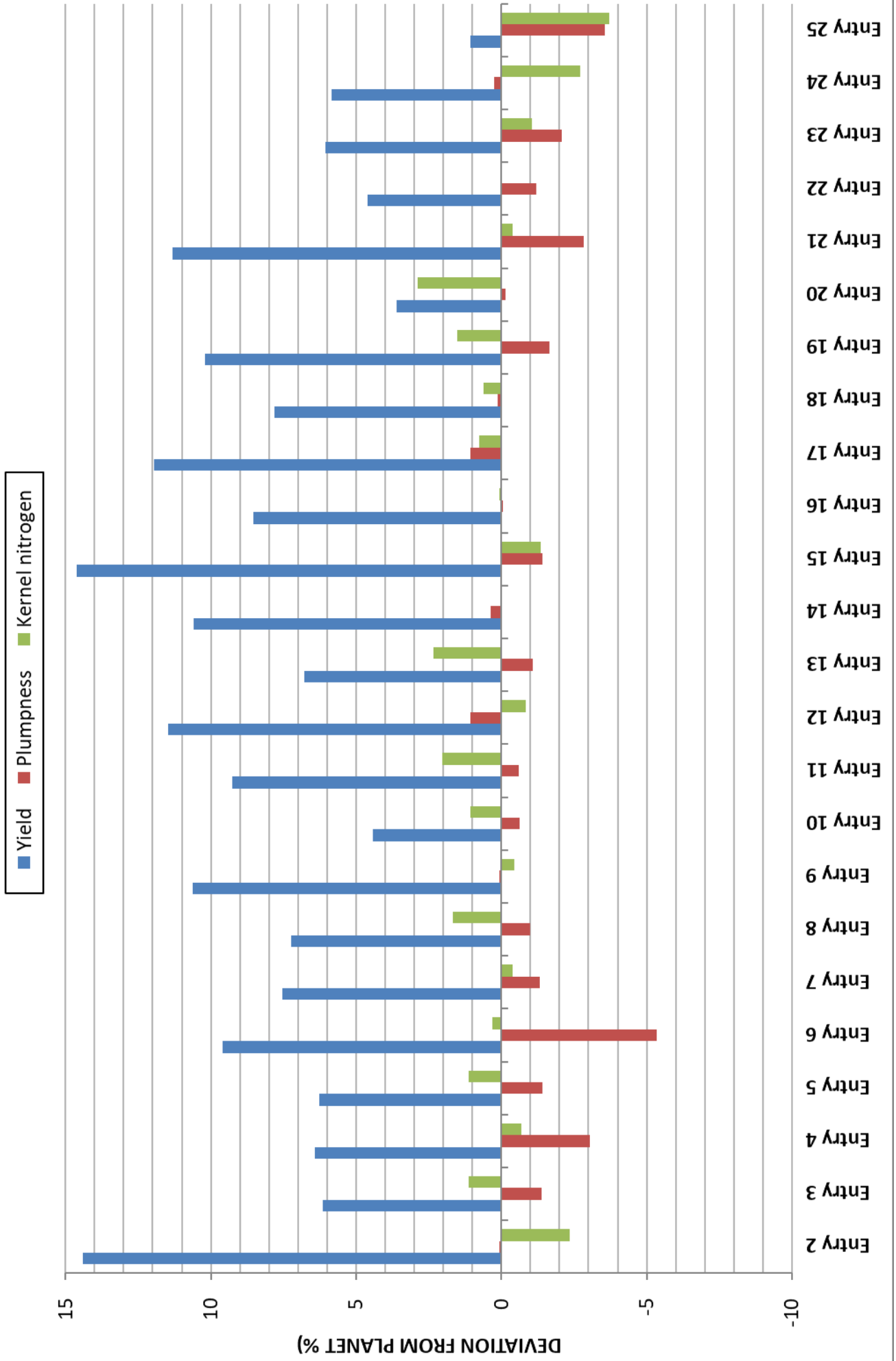


Figure 2: Long term relative performance of lines in the PCT 2024 (6th year)

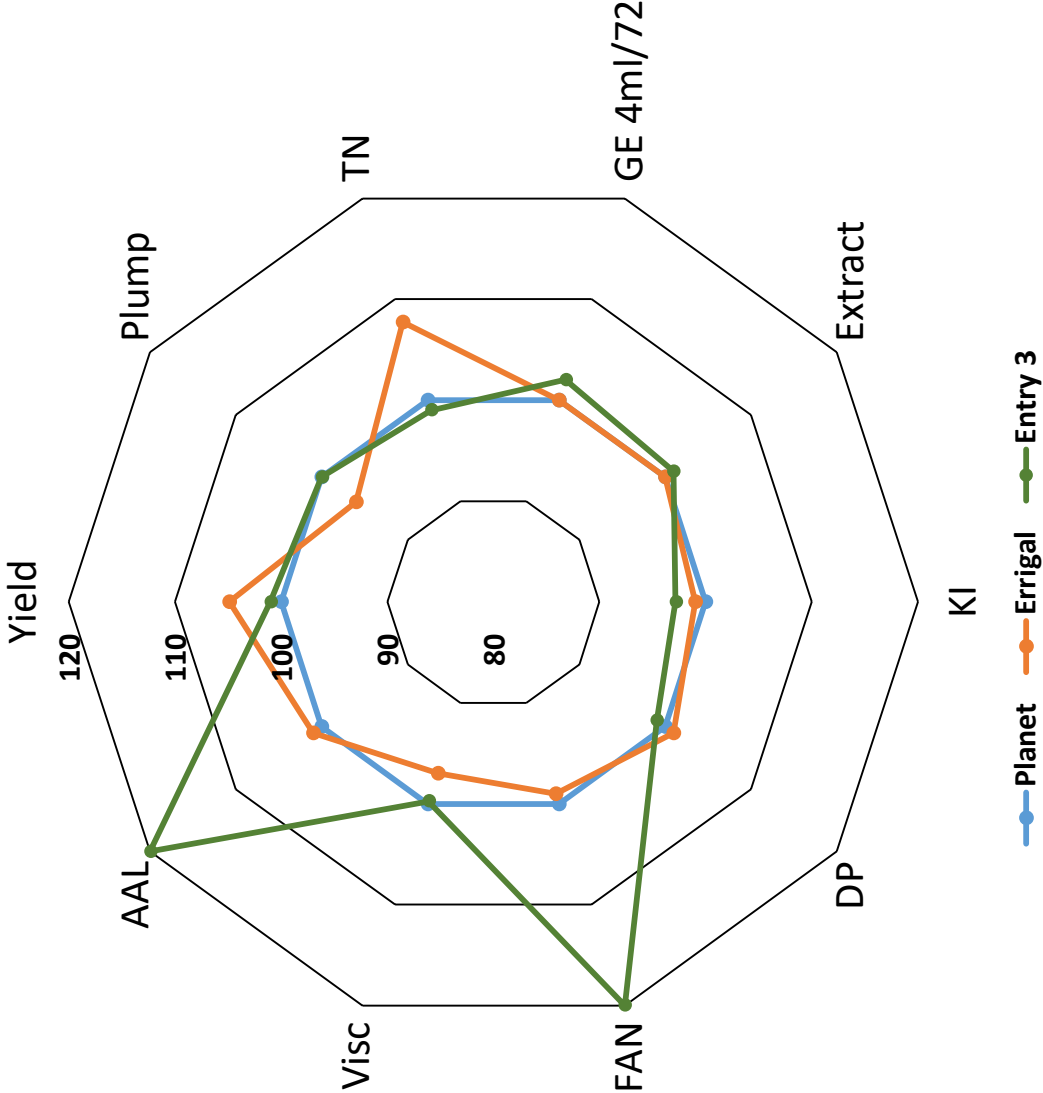


Figure 3: Long term relative performance of lines in the PCT 2024 (5th year)

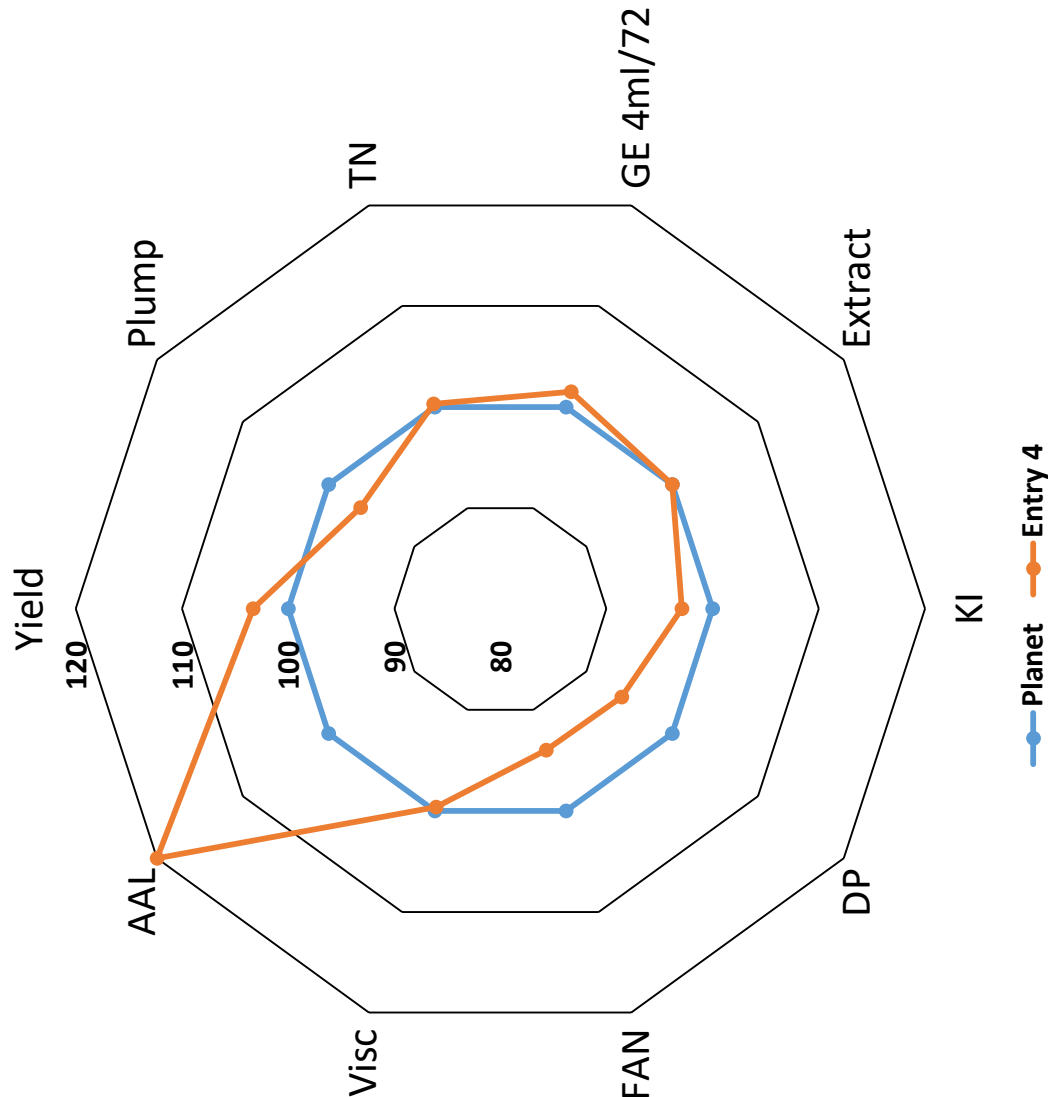


Figure 4: Long term relative performance of lines in the PCT 2024 (4th year)

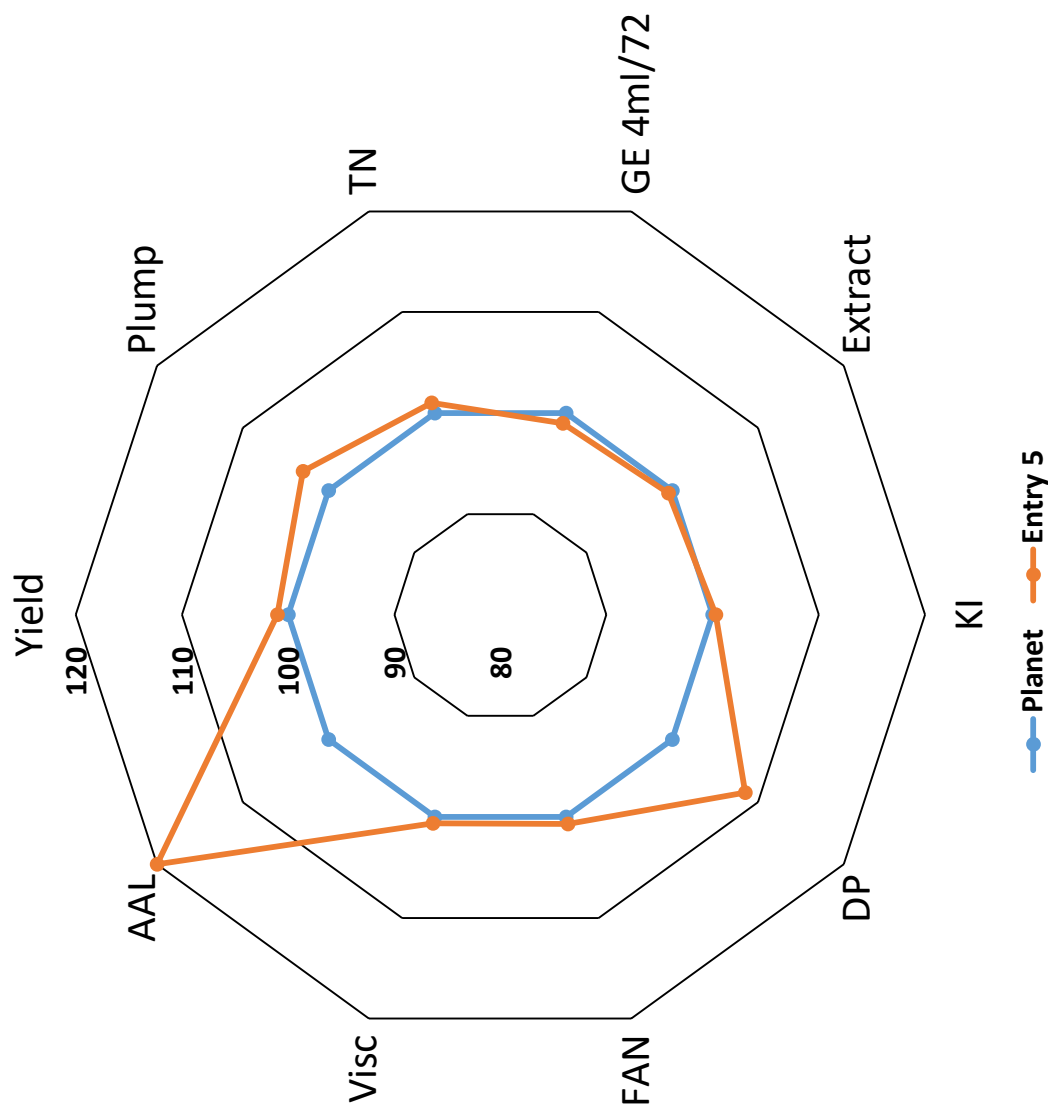


Figure 5: Long term relative performance of lines in the PCT 2024 (3rd year)

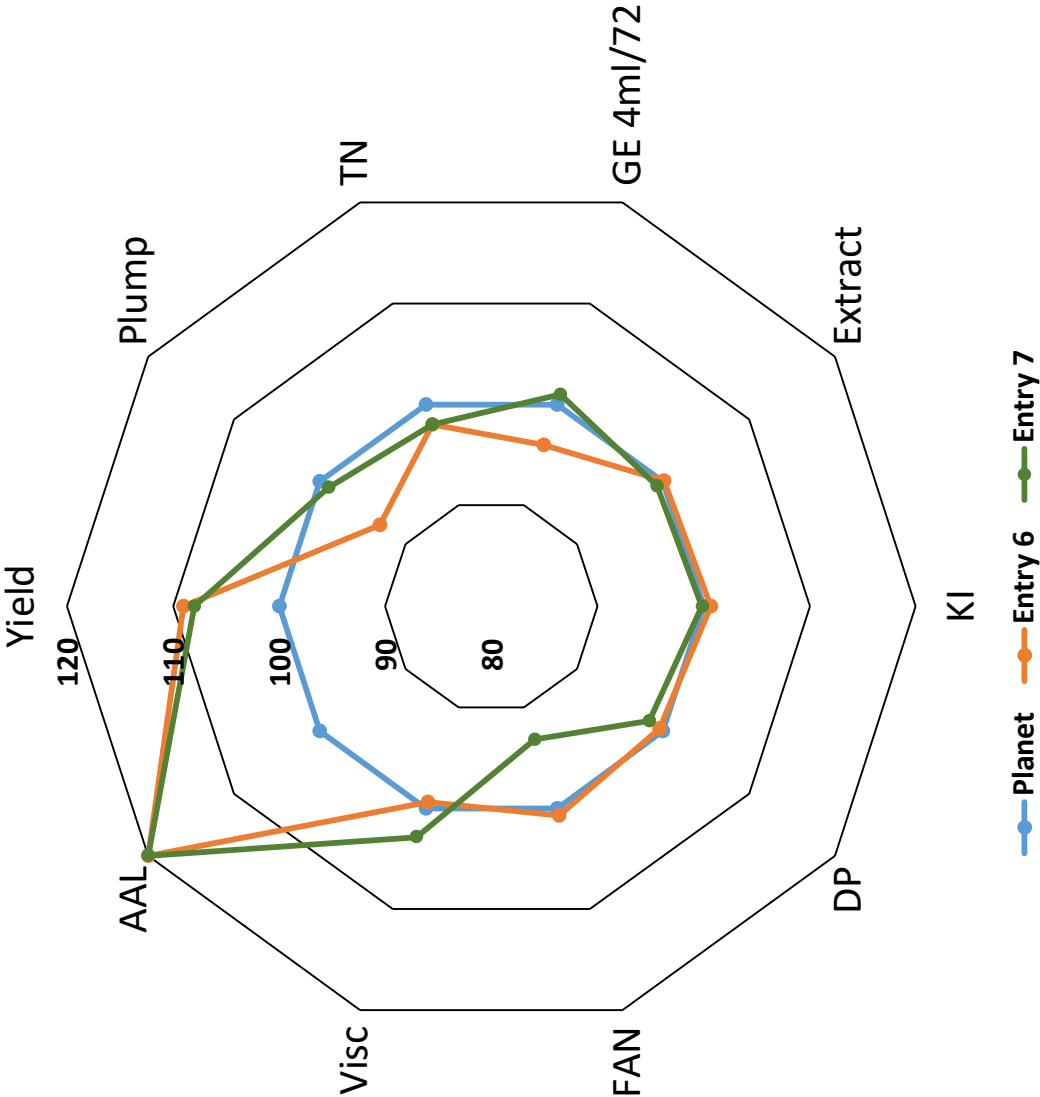


Figure 6: Long term relative performance of lines in the PCT 2024 (3rd year)

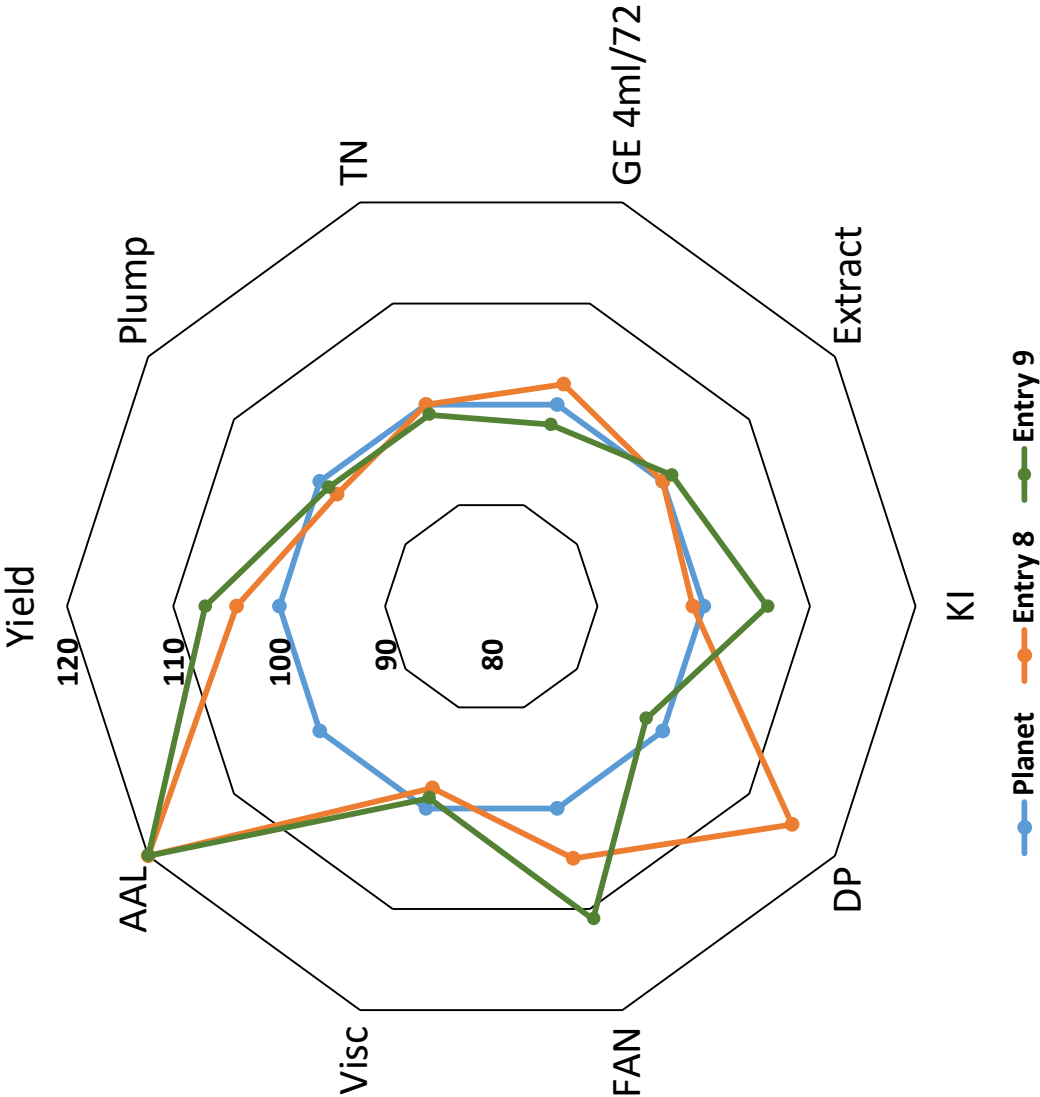


Figure 7: Long term relative performance of lines in the PCT 2024 (2nd year)

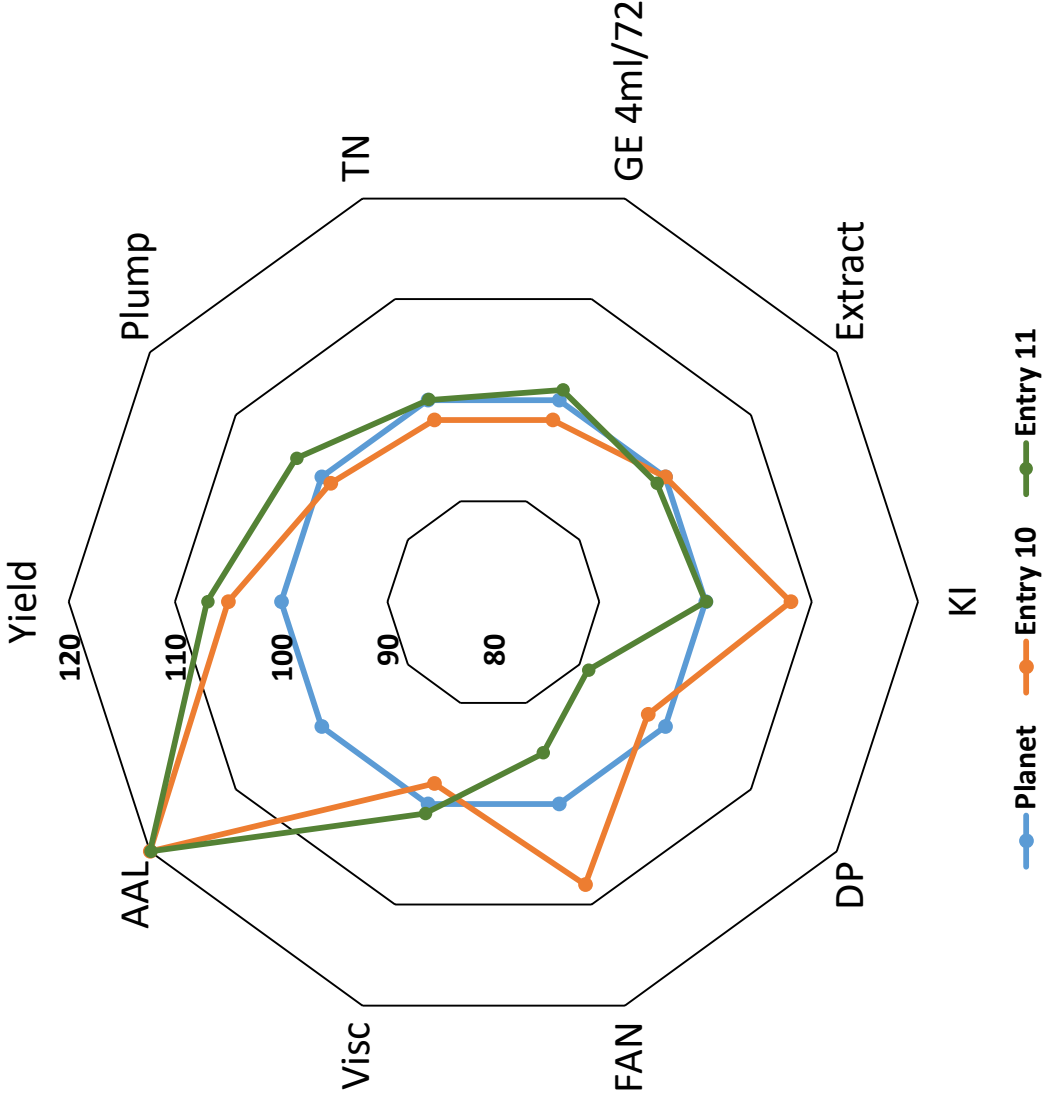


Figure 8: Long term relative performance of lines in the PCT 2024 (2nd year)

