PCT Report

Rainfed Barley

2024

Barley PCT Report in the Rainfed area for 2024

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SUMMARY

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, 12 trials were planted under rainfed conditions in the Southern Cape, of which ten were used 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 rainfed area experienced significant fluctuations during 2024, with both positive and negative outcomes. One challenge was that the area experienced higher rainfall during the critical months, which likely had an effect on the yield and quality. However, on a positive note, the new experimental varieties showed promise.

The 2024 and long-term average rainfall figures as measured at the weather station at Steenboksrivier is indicated in Figure 1.

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 (Rûens) was divided into three sub areas, namely Western Rûens (Caledon, Greyton, Rietpoel and Tygerhoek), Southern Rûens (Napier, Bredasdorp, Klipdale and Protem) and Eastern Rûens (Napkei, Swellendam, Heidelberg and Heidelberg Vlakte). Each of these three sub areas were covered by four localities that are representative of the different homogeneous agricultural areas in the respective sub areas.

Breeding trials management

The relevant information on the procedures and statistics of all the line evaluation trials executed in the Rûens are provided in Table 21.

The trial in the Rûens consisted of 25 entries (3 replicates) from which two are commercially grown varieties (standards); three experimental varieties, one fourth year line, one third year line, five second year lines and 13 new lines displayed 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 5 m 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 competition free environment for the barley plants throughout the growing season. Weed control was achieved by application before planting with Trifluralin/Paraquat/Pyrinex at 2000 mL/700 mL per hectare and application after planting with Boxer/Logran at 2000 mL/30g per hectare. A second application of herbicide was made after planting with MCPA/Quilex/Brush-off/Axial at 750 mL/4 g/50g/1000 mL per hectare according to Table 21. All the trials received two applications of fungicide and insecticide. The first application

occurred at 8 weeks after planting was Abacus (1000 mL/ha) and was followed up with Ceriax (800 mL/ha) at the flag leaf stage.

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 trial for the Rûens, 2024

Rûens		Mean rel.			Localities																	
		yield %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG	
Entr.no.	Entry	of std.	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk
1	Kadie	100,0	4072	13	4378	7	2956	14	5406	12	3647	21	3260	22	4984	4	4806	14	2916	24	4293	5
2	Bitou	80,5	3277	25	2925	25	2586	25	3829	25	3409	25	2715	25	3777	25	3768	25	3141	15	3346	22
3	Malgas	98,1	3996	18	4043	14	2843	16	4944	20	3915	16	3777	10	4705	12	4930	10	3270	10	3540	21
4	22-900-01	102,6	4179	8	4350	9	2710	23	5125	16	4102	9	3709	13	4880	9	5053	8	3100	19	4581	1
5	13-039-06	102,0	4153	10	4119	12	3062	8	5624	5	3659	20	3419	18	5153	3	4830	13	3221	12	4290	6
6	13-041-02	106,2	4325	2	4356	8	2831	18	5942	1	3986	13	3708	14	5558	1	4998	9	2982	22	4559	2
7	13-041-03	109,9	4476	1	4213	11	2831	19	5807	2	4443	2	4448	2	5331	2	5477	1	3471	4	4263	7
8	14-008-14	100,1	4077	12	3565	20	3135	7	5088	18	4129	7	3831	7	4684	13	5237	4	3062	20	3967	12
9	15-040-04	98,5	4009	16	3437	24	3040	10	5448	9	4089	11	3753	11	4485	19	4731	17	3345	8	3755	17
10	15-042-04	103,1	4198	7	4486	5	2824	21	5301	13	4501	1	3426	17	4942	7	5436	2	3534	2	3330	23
11	15-046-03	104,8	4267	4	4951	1	2978	12	5421	10	4393	3	3746	12	4295	21	4836	12	3546	1	4238	8
12	18-900-746	103,9	4229	6	4025	15	3181	5	5421	11	4179	6	3797	8	4503	17	5230	5	3288	9	4438	3
13	16-002-13	98,4	4008	17	3557	21	2836	17	4916	21	3946	14	4050	4	4885	8	4736	16	3361	7	3789	14
14	16-011-08	94,3	3840	22	3489	23	2749	22	4360	23	3469	24	3438	16	4947	6	4925	11	3451	5	3729	18
15	16-012-05	97,9	3985	19	4086	13	3225	4	5472	7	3840	18	3200	23	4357	20	5194	6	3200	14	3291	24
16	16-015-02	98,7	4019	15	4009	16	2829	20	5468	8	3936	15	3414	19	4626	14	4454	22	3402	6	4035	11
17	16-079-01	93,2	3794	23	3519	22	2882	15	4700	22	4006	12	3054	24	4293	22	4777	15	2805	25	4106	10
18	16-079-03	95,4	3883	21	3705	19	3275	1	5099	17	3778	19	3670	15	4056	23	4481	20	3114	17	3768	16
19	16-079-05	96,4	3925	20	3800	18	3160	6	5267	15	4186	5	3346	21	4015	24	4402	23	3024	21	4126	9
20	16-082-01	102,1	4158	9	4312	10	3029	11	5707	4	4097	10	4086	3	4713	11	4455	21	3140	16	3888	13
21	16-091-01	104,0	4235	5	4786	2	2632	24	5507	6	4293	4	3909	6	4978	5	5112	7	3264	11	3639	19
22	17-058-01	105,6	4301	3	4751	3	3274	2	5793	3	3889	17	3952	5	4498	18	5241	3	3520	3	3787	15
23	17-107-02	92,7	3774	24	4386	6	3061	9	4136	24	3509	23	3401	20	4596	15	4190	24	3107	18	3583	20
24	18-023D-03	100,9	4108	11	4498	4	2974	13	5034	19	3519	22	4453	1	4510	16	4647	18	2977	23	4358	4
25	19-007D-05	98,9	4026	14	3976	17	3248	3	5274,7	14	4122	8	3795	9	4808	10	4637	19	3208	13	3161	25
MEAN			4052,6		4068,8		2966,0		5203,5		3961,6		3654,4		4663,1		4823,3		3217,9		3914,5	
CV					9,2		7,7		7,1		9,4		9,1		8,5		7,7		10,6		9,8	
LSD (0,10)					397,8		241,0		391,5		395,0		353,1		418,5		396,0		360,8		408,8	
LSD (0,05)					513,5		311,1		505,4		509,9		455,7		540,2		511,2		465,7		527,7	

TABLE 2: Mean yields and yield rankings of entries in the PCT trial for the Western Rûens, 2024

Western Rûens		Mean rel.			Localities							
		yield %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK	
Entr.no.	Entry	of std.	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk
1	Kadie	100,0	4097	13	4378	7	2956	14	5406	12	3647	21
2	Bitou	77,8	3187	25	2925	25	2586	25	3829	25	3409	25
3	Malgas	96,1	3936	20	4043	14	2843	16	4944	20	3915	16
4	22-900-01	99,4	4072	14	4350	9	2710	23	5125	16	4102	9
5	13-039-06	100,5	4116	11	4119	12	3062	8	5624	5	3659	20
6	13-041-02	104,5	4279	6	4356	8	2831	18	5942	1	3986	13
7	13-041-03	105,5	4323	3	4213	11	2831	19	5807	2	4443	2
8	14-008-14	97,1	3979	18	3565	20	3135	7	5088	18	4129	7
9	15-040-04	97,7	4003	17	3437	24	3040	10	5448	9	4089	11
10	15-042-04	104,4	4278	7	4486	5	2824	21	5301	13	4501	1
11	15-046-03	108,3	4436	1	4951	1	2978	12	5421	10	4393	3
12	18-900-746	102,6	4201	8	4025	15	3181	5	5421	11	4179	6
13	16-002-13	93,1	3814	21	3557	21	2836	17	4916	21	3946	14
14	16-011-08	85,8	3517	24	3489	23	2749	22	4360	23	3469	24
15	16-012-05	101,4	4156	9	4086	13	3225	4	5472	7	3840	18
16	16-015-02	99,1	4060	15	4009	16	2829	20	5468	8	3936	15
17	16-079-01	92,2	3777	22	3519	22	2882	15	4700	22	4006	12
18	16-079-03	96,8	3964	19	3705	19	3275	1	5099	17	3778	19
19	16-079-05	100,2	4103	12	3800	18	3160	6	5267	15	4186	5
20	16-082-01	104,6	4286	5	4312	10	3029	11	5707	4	4097	10
21	16-091-01	105,1	4304	4	4786	2	2632	24	5507	6	4293	4
22	17-058-01	108,1	4427	2	4751	3	3274	2	5793	3	3889	17
23	17-107-02	92,1	3773	23	4386	6	3061	9	4136	24	3509	23
24	18-023D-03	97,8	4006	16	4498	4	2974	13	5034	19	3519	22
25	19-007D-05	101,4	4155	10	3976	17	3248	3	5275	14	4122	8
MEAN			4050,0		4068,8		2966,0		5203,5		3961,6	
CV					9,2		7,7		7,1		9,4	
LSD (0,10)					397,8		241,0		391,5		395,0	

TABLE 3: Mean yields and yield rankings of entries in the PCT trial for the Southern Rûens, 2024

Southern Rûens		Mean rel.			Localities					
		yield %	Mean		NAPIER		PROTEM		KLIPDALE	
Entr.no.	Entry	of std.	Yield	Rk	Yield	Rk	Yield	Rk	Yield	Rk
1	Kadie	100,0	3263	16	3260	22	4984	4	4806	14
2	Bitou	78,6	2565	25	2715	25	3777	25	3768	25
3	Malgas	102,8	3353	11	3777	10	4705	12	4930	10
4	22-900-01	104,5	3410	8	3709	13	4880	9	5053	8
5	13-039-06	102,7	3350	12	3419	18	5153	3	4830	13
6	13-041-02	109,3	3566	2	3708	14	5558	1	4998	9
7	13-041-03	116,9	3814	1	4448	2	5331	2	5477	1
8	14-008-14	105,4	3438	5	3831	7	4684	13	5237	4
9	15-040-04	99,4	3242	17	3753	11	4485	19	4731	17
10	15-042-04	105,8	3451	4	3426	17	4942	7	5436	2
11	15-046-03	98,7	3219	18	3746	12	4295	21	4836	12
12	18-900-746	103,7	3383	10	3797	8	4503	17	5230	5
13	16-002-13	104,7	3418	7	4050	4	4885	8	4736	16
14	16-011-08	102,0	3328	13	3438	16	4947	6	4925	11
15	16-012-05	97,7	3188	19	3200	23	4357	20	5194	6
16	16-015-02	95,7	3123	20	3414	19	4626	14	4454	22
17	16-079-01	92,9	3031	23	3054	24	4293	22	4777	15
18	16-079-03	93,5	3052	21	3670	15	4056	23	4481	20
19	16-079-05	90,1	2941	24	3346	21	4015	24	4402	23
20	16-082-01	101,6	3314	14	4086	3	4713	11	4455	21
21	16-091-01	107,3	3500	3	3909	6	4978	5	5112	7
22	17-058-01	104,9	3423	6	3952	5	4498	18	5241	3
23	17-107-02	93,4	3047	22	3401	20	4596	15	4190	24
24	18-023D-03	104,3	3402	9	4453	1	4510	16	4647	18
25	19-007D-05	101,5	3310	15	3795	9	4808	10	4637	19
MEAN			3285,2		3654,4		4663,1		4823,3	
CV					9,1		8,5		7,7	
LSD (0,10)					353,1		418,5		396,0	

Eastern Rûens		Mean rel.			Localities			
		yield %	Mean		NAPKEI		HEIDELBERG	
Entr.no.	Entry	of std.	Yield	Rk	Yield	Rk	Yield	Rk
1	Kadie	100,0	3604	10	2916	24	4293	5
2	Bitou	90,0	3244	24	3141	15	3346	22
3	Malgas	94,5	3405	21	3270	10	3540	21
4	22-900-01	106,6	3841	4	3100	19	4581	1
5	13-039-06	104,2	3756	6	3221	12	4290	6
6	13-041-02	104,6	3770	5	2982	22	4559	2
7	13-041-03	107,3	3867	2	3471	4	4263	7
8	14-008-14	97,5	3514	15	3062	20	3967	12
9	15-040-04	98,5	3550	14	3345	8	3755	17
10	15-042-04	95,2	3432	20	3534	2	3330	23
11	15-046-03	108,0	3892	1	3546	1	4238	8
12	18-900-746	107,2	3863	3	3288	9	4438	3
13	16-002-13	99,2	3575	13	3361	7	3789	14
14	16-011-08	99,6	3590	11	3451	5	3729	18
15	16-012-05	90,0	3245	23	3200	14	3291	24
16	16-015-02	103,2	3718	7	3402	6	4035	11
17	16-079-01	95,9	3456	17	2805	25	4106	10
18	16-079-03	95,5	3441	19	3114	17	3768	16
19	16-079-05	99,2	3575	12	3024	21	4126	9
20	16-082-01	97,5	3514	16	3140	16	3888	13
21	16-091-01	95,7	3451	18	3264	11	3639	19
22	17-058-01	101,4	3654	9	3520	3	3787	15
23	17-107-02	92,8	3345	22	3107	18	3583	20
24	18-023D-03	101,7	3667	8	2977	23	4358	4
25	19-007D-05	88,4	3184,8	25	3208,3	13	3161,3	25
MEAN			3566,2		3217,9		3914,5	
CV					10,6		9,8	
LSD (0,10)					360,8		408,8	

TABLE 5: Mean plumpness (>2,5mm) of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel.			Localities																	
		plump	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr.no.	Entry	of std.	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk
1	Kadie	100,0	90	13	90	4	95	13	95	6	85	6	67	25	98	2	87	5	96	3	95	4
2	Bitou	99,9	90	14	80	14	97	7	91	19	89	19	83	14	95	16	81	13	89	19	93	8
3	Malgas	96,7	87	19	81	13	94	15	91	17	83	17	86	11	96	13	73	23	86	23	86	23
4	22-900-01	102,3	92	6	95	1	97	6	95	7	92	7	86	10	97	7	85	9	92	11	91	13
5	13-039-06	100,0	90	11	80	15	95	10	97	1	87	1	77	18	97	8	81	15	93	9	92	9
6	13-041-02	101,7	91	8	94	2	95	12	95	8	82	8	88	8	98	4	87	7	100	1	88	21
7	13-041-03	98,7	89	16	85	9	94	14	97	2	81	2	79	16	96	14	85	10	89	17	88	17
8	14-008-14	98,8	89	15	72	22	93	17	92	14	84	14	85	12	97	10	79	18	90	15	91	11
9	15-040-04	95,3	86	21	63	25	93	18	87	23	79	23	71	22	95	18	80	16	90	16	90	14
10	15-042-04	100,2	90	10	63	24	92	19	92	16	83	16	96	1	94	21	78	19	94	5	92	10
11	15-046-03	101,8	92	7	83	11	94	16	94	12	89	12	90	5	97	11	89	4	91	13	90	16
12	18-900-746	105,1	95	3	86	7	97	5	94	11	93	11	96	2	97	12	95	1	92	12	94	7
13	16-002-13	93,2	84	22	68	23	92	20	86	24	79	24	73	21	94	19	75	21	86	24	85	24
14	16-011-08	103,2	93	5	88	5	97	4	91	20	92	20	89	6	98	5	87	6	93	10	95	5
15	16-012-05	98,4	88	17	79	16	95	9	94	10	77	10	83	15	97	6	81	14	89	20	91	12
16	16-015-02	91,6	82	24	73	21	85	25	85	25	81	25	73	20	93	23	67	24	87	22	88	18
17	16-079-01	97,4	88	18	82	12	91	21	92	15	85	15	79	17	95	17	77	20	91	14	90	15
18	16-079-03	103,9	93	4	75	20	98	3	97	3	95	3	88	9	97	9	84	11	94	7	96	2
19	16-079-05	101,6	91	9	84	10	97	7	91	18	90	18	88	7	93	22	82	12	93	8	95	3
20	16-082-01	91,3	82	25	75	19	90	24	89	21	79	21	68	23	91	25	75	22	81	25	85	25
21	16-091-01	100,0	90	12	85	8	95	11	94	9	90	9	83	13	96	15	79	17	94	6	88	19
22	17-058-01	96,3	87	20	77	18	91	22	89	22	81	22	75	19	94	20	86	8	89	18	88	22
23	17-107-02	92,6	83	23	78	17	91	23	93	13	81	13	68	24	93	24	65	25	87	21	88	20
24	18-023D-03	106,7	96	1	93	3	99	1	96	4	92	4	93	4	98	1	93	2	97	2	98	1
25	19-007D-05	106,2	95	2	87	6	98	2	96	5	95	5	96	3	98	3	92	3	94	4	95	6
MEAN			89,3		80,7		94,2		92,5		85,8		82,4		95,8		81,7		91,2		90,9	
CV					5,4		1,3		2,2		5,8		8,5		1,6		4,6		4,2		3,2	
LSD (0,10)					4,6		1,3		2,2		5,3		7,5		1,6		4,0		4,1		3,1	
LSD (0,05)					6,0		1,6		2,8		6,9		9,6		2,1		5,2		5,2		4,0	

TABLE 6: Mean plumpness (>2,5mm) of entries in the PCT trial for the Western Rûens, 2024

Western Rûens		Mean rel.			Localities							
		plump %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK	
Entr.no.	Entry	of std.	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk
1	Kadie	100,0	91	8	90	4	95	13	95	6	85	13
2	Bitou	98,0	89	13	80	14	97	7	91	19	89	10
3	Malgas	95,9	87	16	81	13	94	15	91	17	83	16
4	22-900-01	104,0	95	2	95	1	97	6	95	7	92	5
5	13-039-06	98,4	90	12	80	15	95	10	97	1	87	11
6	13-041-02	100,2	91	6	94	2	95	12	95	8	82	17
7	13-041-03	98,0	89	14	85	9	94	14	97	2	81	19
8	14-008-14	93,7	85	19	72	22	93	17	92	14	84	14
9	15-040-04	88,4	81	25	63	25	93	18	87	23	79	22
10	15-042-04	90,5	82	22	63	24	92	19	92	16	83	15
11	15-046-03	98,6	90	11	83	11	94	16	94	12	89	9
12	18-900-746	101,5	93	4	86	7	97	5	94	11	93	3
13	16-002-13	89,1	81	23	68	23	92	20	86	24	79	23
14	16-011-08	101,2	92	5	88	5	97	4	91	20	92	6
15	16-012-05	94,6	86	17	79	16	95	9	94	10	77	25
16	16-015-02	89,0	81	24	73	21	85	25	85	25	81	20
17	16-079-01	96,3	88	15	82	12	91	21	92	15	85	12
18	16-079-03	100,0	91	7	75	20	98	3	97	3	95	2
19	16-079-05	99,5	91	10	84	10	97	7	91	18	90	8
20	16-082-01	91,4	83	21	75	19	90	24	89	21	79	24
21	16-091-01	100,0	91	9	85	8	95	11	94	9	90	7
22	17-058-01	92,8	85	20	77	18	91	22	89	22	81	18
23	17-107-02	94,0	86	18	78	17	91	23	93	13	81	21
24	18-023D-03	104,2	95	1	93	3	99	1	96	4	92	4
25	19-007D-05	103,2	94	3	87	6	98	2	96	5	95	1
MEAN			88,3		80,7		94,2		92,5		85,8	
CV					5,4		1,3		2,2		5,8	
LSD (0,10)					4,6		1,3		2,2		5,3	

TABLE 7: Mean plumpness (>2,5mm) of entries in the PCT trial for the Southern Rûens, 2024

Southern Rûens		Mean rel.			Localities			
		Plump %	Mean		PROTEM		KLIPDALE	
Entr.no.	Entry	of std.	Plump	Rk	Plump	Rk	Yield	Rk
1	Kadie	100,0	55	23	67	9	98	2
2	Bitou	107,7	59	15	83	24	95	16
3	Malgas	109,9	61	10	86	2	96	13
4	22-900-01	110,9	61	9	86	23	97	7
5	13-039-06	105,4	58	17	77	1	97	8
6	13-041-02	112,3	62	7	88	21	98	4
7	13-041-03	105,5	58	16	79	25	96	14
8	14-008-14	109,8	61	12	85	13	97	10
9	15-040-04	100,2	55	22	71	15	95	18
10	15-042-04	114,9	63	4	96	5	94	21
11	15-046-03	112,4	62	6	90	20	97	11
12	18-900-746	116,2	64	2	96	10	97	12
13	16-002-13	101,0	56	20	73	19	94	19
14	16-011-08	112,9	62	5	89	18	98	5
15	16-012-05	108,9	60	13	83	14	97	6
16	16-015-02	100,4	55	21	73	8	93	23
17	16-079-01	105,0	58	18	79	16	95	17
18	16-079-03	111,4	62	8	88	7	97	9
19	16-079-05	109,8	61	11	88	22	93	22
20	16-082-01	95,9	53	25	68	12	91	25
21	16-091-01	108,0	60	14	83	17	96	15
22	17-058-01	102,0	56	19	75	6	94	20
23	17-107-02	97,1	54	24	68	4	93	24
24	18-023D-03	115,5	64	3	93	11	98	1
25	19-007D-05	117,1	65	1	96	3	98	3
MEAN			59,4		82,4		95,8	
CV					8,5		1,6	
LSD (0,10)					7,5		1,6	

TABLE 8: Mean plumpness (>2,5mm) of entries in the PCT trial for the Eastern Rûens, 2024

Eastern Rûens		Mean rel.			Localities					
		Plump %	Mean		NAPKEI		HEIDELBERG		H/VLAKTE	
Entr.no.	Entry	of std.	Plump	Rk	Plump	Rk	Plump	Rk	Plump	Rk
1	Kadie	100,0	93	4	87	10	96	3	95	5
2	Bitou	94,5	88	13	81	13	89	20	93	20
3	Malgas	88,0	82	22	73	2	86	5	86	6
4	22-900-01	96,2	89	10	85	20	92	7	91	4
5	13-039-06	95,5	89	11	81	1	93	1	92	3
6	13-041-02	98,3	91	6	87	21	100	16	88	16
7	13-041-03	94,2	88	15	85	23	89	22	88	8
8	14-008-14	93,2	87	19	79	12	90	15	91	14
9	15-040-04	93,4	87	18	80	14	90	9	90	11
10	15-042-04	94,7	88	12	78	18	94	11	92	2
11	15-046-03	96,8	90	9	89	6	91	13	90	12
12	18-900-746	100,4	93	3	95	9	92	8	94	10
13	16-002-13	88,2	82	21	75	4	86	10	85	17
14	16-011-08	98,6	92	5	87	8	93	12	95	15
15	16-012-05	93,7	87	16	81	24	89	25	91	25
16	16-015-02	86,6	81	23	67	7	87	4	88	18
17	16-079-01	92,5	86	20	77	15	91	19	90	24
18	16-079-03	98,2	91	7	84	16	94	24	96	22
19	16-079-05	97,0	90	8	82	19	93	18	95	21
20	16-082-01	86,1	80	25	75	17	81	2	85	7
21	16-091-01	93,6	87	17	79	25	94	23	88	23
22	17-058-01	94,3	88	14	86	22	89	17	88	19
23	17-107-02	86,4	80	24	65	5	87	21	88	9
24	18-023D-03	103,6	96	1	93	3	97	6	98	13
25	19-007D-05	100,6	94	2	92	11	94	14	95	1
MEAN			87,9		81,7		91,2		90,9	
CV					4,6		4,2		3,2	
LSD (0,10)					4,0		4,1		3,1	

TABLE 9 :Mean Screen (<2,2mm) of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel.			Localities																			
		SIFS %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr.no.	Entry	of std.	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk	Screen	Rk
1	Kadie	100,0	4	10	3	7	1	17	2	18	8	6	2	8	13	13	1	8	4	7	1	4	2	10
2	Bitou	122,0	5	13	6	20	1	7	3	21	8	7	5	22	14	15	1	17	5	18	2	19	2	7
3	Malgas	143,4	5	19	4	12	1	14	2	8	15	18	3	14	12	12	1	11	8	23	3	22	3	21
4	22-900-01	93,8	3	7	1	1	1	18	2	10	9	8	2	9	9	7	1	4	4	14	1	6	2	8
5	13-039-06	127,3	5	14	4	10	1	8	1	6	10	10	4	21	19	20	1	2	4	15	1	7	1	5
6	13-041-02	96,4	4	8	1	2	1	10	2	13	11	12	1	3	10	9	1	9	4	9	1	3	2	11
7	13-041-03	129,3	5	15	4	11	1	13	2	14	12	14	1	1	18	18	1	9	4	11	2	18	1	4
8	14-008-14	135,6	5	16	7	21	1	16	1	3	13	15	3	15	14	14	1	16	7	22	2	16	3	19
9	15-040-04	179,0	7	21	8	24	2	19	3	19	17	23	5	25	24	23	1	18	4	12	2	15	2	17
10	15-042-04	121,2	5	11	8	23	1	12	2	16	15	20	4	20	9	6	1	19	5	16	1	11	1	2
11	15-046-03	89,4	3	6	3	9	1	14	1	5	9	9	2	10	11	10	1	7	2	3	1	5	2	8
12	18-900-746	47,1	2	2	3	4	1	3	1	2	6	4	2	5	4	1	1	6	1	1	1	1	2	6
13	16-002-13	196,9	7	23	9	25	2	23	4	24	18	24	4	17	22	22	2	22	6	20	5	25	4	23
14	16-011-08	75,7	3	4	3	5	1	5	2	17	5	3	2	7	9	8	1	3	4	10	1	2	1	3
15	16-012-05	138,3	5	17	5	17	1	11	2	10	15	19	3	12	15	16	1	12	5	17	2	17	3	20
16	16-015-02	205,6	8	24	6	19	3	25	4	25	17	21	5	24	22	21	2	24	10	25	3	21	2	18
17	16-079-01	139,8	5	18	5	17	2	24	2	15	12	13	4	18	16	17	2	21	6	19	2	14	2	14
18	16-079-03	88,0	3	5	7	22	1	4	2	9	7	5	4	16	8	4	1	14	3	6	2	12	2	16
19	16-079-05	99,7	4	9	4	13	1	6	2	12	11	11	2	6	9	5	2	23	4	8	1	10	2	15
20	16-082-01	214,7	8	25	5	16	2	22	3	22	20	25	5	23	24	24	2	25	7	21	4	24	4	24
21	16-091-01	121,7	5	12	3	6	1	9	2	7	15	17	3	13	11	11	1	14	4	13	1	9	2	13
22	17-058-01	163,0	6	20	4	14	2	20	4	23	17	22	3	11	19	19	1	20	3	5	2	20	4	25
23	17-107-02	193,0	7	22	5	15	2	21	3	20	14	16	4	19	25	25	1	12	10	24	3	23	3	22
24	18-023D-03	44,8	2	1	2	3	1	1	1	4	2	1	1	2	6	3	1	1	2	4	1	7	0	1
25	19-007D-05	52,4	2	3	3	8	1	2	0	1	4	2	2	4	5	2	1	5	2	2	2	13	2	12
MEAN			5		4,6		1,3		2,0		11,7		3,0		13,8		1,1		4,6		1,9		2,2	
CV					28,7		22,9		40,7		38,8		40,1		24,9		35,0		28,0		45,2		30,2	
LSD (0,10)					1,4		0,3		0,9		4,8		1,3		3,6		0,4		1,4		0,9		0,7	
LSD (0,05)					1,8		0,4		1,1		6,2		1,7		4,7		0,5		1,8		1,2		0,9	

TABLE 10: Mean kernel nitrogen of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel,			Localities																			
		TN %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr,no,	Entry	of std,	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk
1	Kadie	100,0	1,60	16	1,65	15	1,25	17	1,83	3	1,74	13	1,34	15	1,86	7	1,49	19	1,39	24	1,68	6	1,8	15
2	Bitou	104,2	1,66	2	1,76	3	1,37	3	1,84	2	1,78	5	1,40	7	1,80	12	1,64	1	1,55	4	1,72	2	1,9	4
3	Malgas	101,4	1,62	8	1,75	4	1,31	5	1,76	13	1,77	8	1,36	11	1,76	19	1,57	10	1,50	14	1,74	1	1,8	14
4	22-900-01	95,5	1,52	24	1,56	24	1,26	16	1,57	25	1,52	25	1,43	3	1,75	21	1,44	23	1,42	23	1,66	10	1,7	22
5	13-039-06	101,0	1,61	12	1,81	1	1,29	11	1,78	9	1,68	20	1,45	1	1,79	14	1,52	15	1,48	18	1,65	13	1,9	5
6	13-041-02	102,2	1,63	6	1,70	8	1,40	1	1,73	20	1,77	8	1,43	3	1,78	16	1,52	15	1,54	7	1,61	19	1,9	3
7	13-041-03	97,2	1,55	23	1,65	15	1,29	11	1,67	23	1,62	22	1,33	16	1,77	18	1,47	21	1,45	20	1,65	13	1,7	20
8	14-008-14	101,5	1,62	7	1,71	7	1,31	5	1,76	13	1,73	14	1,41	5	1,80	12	1,61	3	1,45	20	1,66	10	1,9	6
9	15-040-04	98,2	1,57	22	1,73	5	1,22	21	1,76	13	1,73	14	1,38	9	1,82	9	1,42	24	1,44	22	1,55	25	1,8	15
10	15-042-04	98,4	1,57	21	1,69	10	1,21	24	1,80	7	1,72	16	1,29	21	1,63	25	1,59	9	1,51	10	1,63	16	1,8	18
11	15-046-03	101,1	1,61	9	1,68	11	1,25	17	1,75	16	1,76	10	1,37	10	1,79	14	1,61	3	1,47	19	1,7	4	1,8	10
12	18-900-746	93,1	1,49	25	1,59	22	1,28	13	1,64	24	1,60	24	1,15	25	1,70	22	1,42	24	1,39	24	1,57	22	1,6	25
13	16-002-13	101,0	1,61	10	1,68	11	1,22	21	1,81	6	1,70	18	1,30	19	1,88	5	1,56	11	1,51	10	1,72	2	1,8	11
14	16-011-08	100,6	1,60	13	1,66	13	1,27	15	1,70	21	1,83	2	1,30	19	1,87	6	1,54	13	1,51	10	1,59	21	1,8	8
15	16-012-05	100,3	1,60	14	1,61	21	1,31	5	1,75	16	1,81	3	1,29	21	1,78	16	1,51	17	1,49	16	1,7	4	1,8	17
16	16-015-02	98,5	1,57	20	1,63	20	1,30	9	1,78	9	1,72	16	1,31	18	1,70	22	1,54	13	1,50	14	1,56	24	1,7	19
17	16-079-01	103,1	1,64	4	1,65	15	1,24	19	1,75	16	1,76	10	1,35	12	1,96	2	1,60	6	1,55	4	1,64	15	2,0	2
18	16-079-03	100,1	1,60	15	1,73	5	1,28	13	1,77	11	1,66	21	1,39	8	1,90	4	1,51	17	1,49	16	1,57	22	1,8	12
19	16-079-05	103,4	1,65	3	1,78	2	1,30	9	1,88	1	1,86	1	1,32	17	1,81	10	1,64	1	1,54	7	1,67	8	1,8	8
20	16-082-01	99,6	1,59	18	1,64	18	1,21	24	1,82	5	1,62	22	1,23	24	1,81	10	1,61	3	1,62	1	1,68	6	1,7	21
21	16-091-01	99,9	1,59	17	1,57	23	1,35	4	1,70	21	1,81	3	1,35	12	1,76	19	1,60	6	1,51	10	1,61	19	1,7	22
22	17-058-01	98,9	1,58	19	1,56	24	1,22	21	1,80	7	1,78	5	1,25	23	1,69	24	1,56	11	1,58	3	1,66	10	1,7	22
23	17-107-02	102,8	1,64	5	1,66	13	1,31	5	1,83	3	1,70	18	1,45	1	1,93	3	1,47	21	1,55	4	1,67	8	1,9	6
24	18-023D-03	105,2	1,68	1	1,64	18	1,38	2	1,74	19	1,75	12	1,35	12	2,10	1	1,60	6	1,59	2	1,62	18	2,0	1
25	19-007D-05	101,0	1,61	10	1,70	8	1,24	19	1,77	11	1,78	5	1,41	5	1,86	7	1,49	19	1,53	9	1,63	16	1,8	12
MEAN			1,60		1,67		1,28		1,76		1,73		1,35		1,81		1,54		1,50		1,65		1,79	
CV					3,8		3,6		4,3		4,9		5,8		5,8		5,1		4,7		5,1		5,4	
LSD (0,10)					0,07		0,05		0,08		0,09		0,08		0,11		0,08		0,07		0,1		0,1	
LSD (0,05)					0,09		0,06		0,10		0,12		0,11		0,14		0,11		0,10		0,1		0,1	

TABLE 11: Mean kernel nitrogen of entries in the PCT trial for the Western Rûens, 2024

Western Rûens		Mean rel.			Localities							
		TN %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK	
Entr.no.	Entry	of std.	TN	Rk	TN	Rk	TN	Rk	TN	Rk	TN	Rk
1	Kadie	100,0	1,62	11	1,65	15	1,25	17	1,83	3	1,74	13
2	Bitou	104,3	1,69	2	1,76	3	1,37	3	1,84	2	1,78	5
3	Malgas	101,9	1,65	4	1,75	4	1,31	5	1,76	13	1,77	8
4	22-900-01	91,3	1,48	25	1,56	24	1,26	16	1,57	25	1,52	25
5	13-039-06	101,4	1,64	5	1,81	1	1,29	11	1,78	9	1,68	20
6	13-041-02	102,0	1,65	3	1,70	8	1,40	1	1,73	20	1,77	8
7	13-041-03	96,3	1,56	23	1,65	15	1,29	11	1,67	23	1,62	22
8	14-008-14	100,6	1,63	6	1,71	7	1,31	5	1,76	13	1,73	14
9	15-040-04	99,5	1,61	13	1,73	5	1,22	21	1,76	13	1,73	14
10	15-042-04	99,2	1,61	18	1,69	10	1,21	24	1,80	7	1,72	16
11	15-046-03	99,5	1,61	13	1,68	11	1,25	17	1,75	16	1,76	10
12	18-900-746	94,4	1,53	24	1,59	22	1,28	13	1,64	24	1,60	24
13	16-002-13	99,1	1,60	19	1,68	11	1,22	21	1,81	6	1,70	18
14	16-011-08	99,8	1,62	12	1,66	13	1,27	15	1,70	21	1,83	2
15	16-012-05	100,2	1,62	10	1,61	21	1,31	5	1,75	16	1,81	3
16	16-015-02	99,4	1,61	16	1,63	20	1,30	9	1,78	9	1,72	16
17	16-079-01	98,9	1,60	20	1,65	15	1,24	19	1,75	16	1,76	10
18	16-079-03	99,5	1,61	13	1,73	5	1,28	13	1,77	11	1,66	21
19	16-079-05	105,4	1,71	1	1,78	2	1,30	9	1,88	1	1,86	1
20	16-082-01	97,2	1,57	22	1,64	18	1,21	24	1,82	5	1,62	22
21	16-091-01	99,4	1,61	16	1,57	23	1,35	4	1,70	21	1,81	3
22	17-058-01	98,3	1,59	21	1,56	24	1,22	21	1,80	7	1,78	5
23	17-107-02	100,5	1,63	8	1,66	13	1,31	5	1,83	3	1,70	18
24	18-023D-03	100,6	1,63	6	1,64	18	1,38	2	1,74	19	1,75	12
25	19-007D-05	100,3	1,62	9	1,70	8	1,24	19	1,77	11	1,78	5
MEAN			1,61		1,67		1,28		1,76		1,73	
CV			3,8		3,8		3,6		4,28		4,93	
LSD (0,10)			0,1		0,1		0,0		0,08		0,09	

TABLE 12: Mean kernel nitrogen of entries in the PCT trial for the Southern Rûens, 2024

Southern Rûens		Mean rel.			Localities					
		TN %	Mean		NAPIER		PROTEM		KLIPDALE	
Entr.no.	Entry	of std.	TN	Rk	TN	Rk	TN	Rk	Yield	Rk
1	Kadie	100,0	1,17	15	1,34	15	1,86	7	1,49	19
2	Bitou	103,2	1,21	4	1,40	7	1,80	12	1,64	1
3	Malgas	100,0	1,17	15	1,36	11	1,76	19	1,57	10
4	22-900-01	98,5	1,16	18	1,43	3	1,75	21	1,44	23
5	13-039-06	101,5	1,19	9	1,45	1	1,79	14	1,52	15
6	13-041-02	100,9	1,18	12	1,43	3	1,78	16	1,52	15
7	13-041-03	97,4	1,14	21	1,33	16	1,77	18	1,47	21
8	14-008-14	102,8	1,21	5	1,41	5	1,80	12	1,61	3
9	15-040-04	98,5	1,16	18	1,38	9	1,82	9	1,42	24
10	15-042-04	96,2	1,13	23	1,29	21	1,63	25	1,59	9
11	15-046-03	101,7	1,19	7	1,37	10	1,79	14	1,61	3
12	18-900-746	91,0	1,07	25	1,15	25	1,70	22	1,42	24
13	16-002-13	101,1	1,19	11	1,30	19	1,88	5	1,56	11
14	16-011-08	100,4	1,18	14	1,30	19	1,87	6	1,54	13
15	16-012-05	97,7	1,15	20	1,29	21	1,78	16	1,51	17
16	16-015-02	97,0	1,14	22	1,31	18	1,70	22	1,54	13
17	16-079-01	104,7	1,23	2	1,35	12	1,96	2	1,60	6
18	16-079-03	102,3	1,20	6	1,39	8	1,90	4	1,51	17
19	16-079-05	101,7	1,19	7	1,32	17	1,81	10	1,64	1
20	16-082-01	99,1	1,16	17	1,23	24	1,81	10	1,61	3
21	16-091-01	100,4	1,18	13	1,35	12	1,76	19	1,60	6
22	17-058-01	95,9	1,13	24	1,25	23	1,69	24	1,56	11
23	17-107-02	103,4	1,21	3	1,45	1	1,93	3	1,47	21
24	18-023D-03	107,7	1,26	1	1,35	12	2,10	1	1,60	6
25	19-007D-05	101,5	1,19	9	1,41	5	1,86	7	1,49	19
MEAN			1,17		1,35		1,81		1,54	
CV					5,8		5,8		5,1	
LSD (0,10)					0,08		0,11		0,08	

TABLE 13: Mean kernel nitrogen of entries in the PCT trial for the Eastern Rûens, 2024

Eastern Rûens		Mean rel.			Localities					
		TN %	Mean		NAPKEI		HEIDELBERG		H/VLAKTE	
Entr.no.	Entry	of std.	TN	Rk	TN	Rk	TN	Rk	TN	Rk
1	Kadie	100,0	1,62	19	1,39	24	1,68	6	1,78	15
2	Bitou	106,0	1,71	2	1,55	4	1,72	2	1,87	4
3	Malgas	103,7	1,68	8	1,50	14	1,74	1	1,79	14
4	22-900-01	97,7	1,58	24	1,42	23	1,66	10	1,66	22
5	13-039-06	102,9	1,66	10	1,48	18	1,65	13	1,86	5
6	13-041-02	103,9	1,68	5	1,54	7	1,61	19	1,89	3
7	13-041-03	99,2	1,60	20	1,45	20	1,65	13	1,71	20
8	14-008-14	102,3	1,65	12	1,45	20	1,66	10	1,85	6
9	15-040-04	98,4	1,59	23	1,44	22	1,55	25	1,78	15
10	15-042-04	100,8	1,63	17	1,51	10	1,63	16	1,75	18
11	15-046-03	102,9	1,66	10	1,47	19	1,70	4	1,82	10
12	18-900-746	94,4	1,53	25	1,39	24	1,57	22	1,62	25
13	16-002-13	103,9	1,68	5	1,51	10	1,72	2	1,81	11
14	16-011-08	101,6	1,64	15	1,51	10	1,59	21	1,83	8
15	16-012-05	102,3	1,65	12	1,49	16	1,70	4	1,77	17
16	16-015-02	98,8	1,60	21	1,50	14	1,56	24	1,73	19
17	16-079-01	106,0	1,71	2	1,55	4	1,64	15	1,95	2
18	16-079-03	100,2	1,62	18	1,49	16	1,57	22	1,80	12
19	16-079-05	103,9	1,68	5	1,54	7	1,67	8	1,83	8
20	16-082-01	103,1	1,67	9	1,62	1	1,68	6	1,70	21
21	16-091-01	98,6	1,59	22	1,51	10	1,61	19	1,66	22
22	17-058-01	101,0	1,63	16	1,58	3	1,66	10	1,66	22
23	17-107-02	104,5	1,69	4	1,55	4	1,67	8	1,85	6
24	18-023D-03	106,8	1,73	1	1,59	2	1,62	18	1,97	1
25	19-007D-05	102,3	1,65	12	1,53	9	1,63	16	1,80	12
MEAN			1,65		1,50		1,65		1,79	
CV					4,7		5,1		5,4	
LSD (0,10)					0,07		0,09		0,10	

TABLE 14 : Mean germinative energey (4ml24h) and rankings of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel.			Localities																					
		GE %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr.no.	Entry	of std.	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk	4ml24h	Rk
1	Kadie	100,0	31	15	41	18	46	9	43	4	16	22	14	11	43	17	31	18	34	8	32	14	16	17
2	Bitou	85,8	26	18	38	21	46	8	24	23	17	21	9	18	39	19	24	19	27	18	35	11	16	20
3	Malgas	188,7	58	1	79	1	77	1	50	1	56	1	34	1	82	1	63	1	59	1	61	2	37	1
4	22-900-01	114,9	35	9	51	11	48	6	27	19	24	17	14	12	59	4	44	7	37	7	42	6	21	8
5	13-039-06	78,5	24	23	45	16	30	25	35	11	12	25	11	15	40	18	22	21	29	14	22	25	16	18
6	13-041-02	115,9	35	7	49	13	39	16	47	2	43	4	9	16	45	15	41	9	27	17	40	10	27	4
7	13-041-03	115,3	35	8	40	20	55	4	30	17	47	2	11	14	52	7	43	8	26	19	28	19	25	7
8	14-008-14	135,1	41	3	63	5	61	2	37	7	46	3	15	8	55	6	49	4	52	2	32	12	26	5
9	15-040-04	102,3	31	14	40	19	52	5	32	16	29	13	5	23	38	22	33	16	44	4	29	17	19	13
10	15-042-04	92,7	28	17	44	17	38	17	33	14	24	16	3	25	51	10	35	14	26	20	24	22	20	12
11	15-046-03	112,2	34	10	51	10	39	15	35	10	38	6	15	9	56	5	37	12	32	9	41	7	16	19
12	18-900-746	127,0	39	5	63	4	42	12	41	6	43	5	19	5	48	12	52	3	42	6	52	4	12	24
13	16-002-13	74,7	23	24	32	24	45	10	21	24	26	14	9	17	36	24	21	22	19	25	24	24	4	25
14	16-011-08	78,6	24	22	48	15	34	21	26	20	32	9	7	20	37	23	21	22	20	24	27	20	12	23
15	16-012-05	83,8	26	19	61	6	31	23	24	22	12	24	16	7	38	21	35	13	30	12	32	16	12	22
16	16-015-02	109,2	33	11	48	14	40	14	35	9	30	11	15	10	52	8	33	15	44	5	32	15	21	10
17	16-079-01	81,7	25	20	31	25	32	22	32	15	21	20	7	22	35	25	23	20	31	10	28	18	17	16
18	16-079-03	106,0	32	12	66	3	38	18	33	13	26	15	24	3	44	16	32	17	25	22	41	9	30	3
19	16-079-05	117,1	36	6	51	12	41	13	29	18	32	8	13	13	49	11	41	10	29	15	64	1	25	6
20	16-082-01	142,0	43	2	67	2	60	3	46	3	31	10	27	2	61	3	45	6	44	3	45	5	32	2
21	16-091-01	79,6	24	21	58	7	42	11	14	25	23	18	5	24	46	14	18	24	29	13	32	13	12	21
22	17-058-01	103,7	32	13	37	22	35	19	33	12	22	19	16	6	52	9	38	11	31	11	41	8	18	14
23	17-107-02	72,3	22	25	34	23	30	24	25	21	14	23	8	19	39	20	10	25	28	16	27	21	18	15
24	18-023D-03	98,1	30	16	58	8	34	20	37	8	29	12	7	21	46	13	47	5	25	21	24	23	21	11
25	19-007D-05	133,8	41	4	54	9	48	7	43	5	36	7	20	4	72	2	53	2	24	23	53	3	21	9
MEAN			32,4		50,0		43,2		33,2		29,1		13,3		48,6		35,6		32,5		36,3		19,7	
CV					19,6		25,3		27,9		27,0		42,6		21,0		21,5		30,2		30,0		30,4	
LSD (0,10)					10,4		11,6		9,8		8,3		6,0		10,8		8,1		10,4		11,5		6,3	
LSD (0,05)					13,4		15,0		12,7		10,8		7,8		14,0		10,5		13,4		14,9		8,2	

TABLE 15: Mean germinative energy (4ml72h) and rankings of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel.			Localities																					
		GE %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr.no.	Entry	of std.	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk	4ml72h	Rk
1	Kadie	100,0	97	13	96	23	98	4	97	16	96	21	99	4	97	19	98	15	98	17	92	24	98	7
2	Bitou	99,8	97	14	97	17	97	14	97	18	97	20	91	21	98	13	95	23	99	7	100	1	97	13
3	Malgas	100,7	98	7	98	12	97	13	94	22	99	6	95	9	98	10	100	7	100	4	98	3	98	7
4	22-900-01	96,8	94	25	99	8	93	21	71	25	98	13	94	13	97	16	98	14	98	16	96	11	98	4
5	13-039-06	99,5	97	17	100	6	98	6	93	24	98	11	96	7	97	20	99	11	95	23	94	19	99	2
6	13-041-02	99,7	97	16	100	1	94	20	100	6	99	6	93	15	97	17	99	8	95	22	97	7	97	18
7	13-041-03	99,3	96	20	96	21	97	11	98	14	99	6	94	11	95	24	98	19	99	8	93	22	93	24
8	14-008-14	100,1	97	11	99	7	97	9	100	3	93	24	94	14	98	10	100	6	99	10	96	15	98	7
9	15-040-04	101,6	99	2	100	3	96	16	100	3	100	3	100	2	97	15	100	4	99	14	96	12	99	2
10	15-042-04	100,3	97	10	98	16	100	3	99	7	98	11	91	21	97	17	100	2	99	6	96	13	94	22
11	15-046-03	100,1	97	12	96	20	97	12	98	13	100	1	90	23	98	14	96	21	99	12	96	14	99	1
12	18-900-746	100,8	98	6	98	11	96	15	94	23	100	1	96	8	99	6	99	10	100	1	97	10	98	4
13	16-002-13	99,3	96	19	94	25	98	7	97	17	96	22	90	24	98	12	97	20	100	3	93	21	98	7
14	16-011-08	99,5	96	18	99	10	93	22	97	19	98	15	92	18	96	21	98	16	99	13	97	8	98	4
15	16-012-05	98,7	96	22	98	13	96	17	97	20	99	10	92	19	98	9	98	18	93	24	94	20	95	21
16	16-015-02	101,5	98	3	99	9	98	5	100	1	98	15	99	3	99	5	98	17	98	15	98	4	97	13
17	16-079-01	97,2	94	24	94	24	95	18	95	21	93	24	86	25	94	25	96	22	96	21	96	16	98	12
18	16-079-03	99,7	97	15	97	19	100	1	98	11	98	15	92	17	96	23	95	25	99	5	94	18	97	13
19	16-079-05	101,6	99	1	96	22	97	8	98	12	98	13	99	5	99	8	98	13	100	2	100	2	97	13
20	16-082-01	100,5	97	9	100	5	95	19	99	9	98	15	94	12	100	3	99	12	99	9	98	5	96	19
21	16-091-01	101,0	98	5	98	15	100	2	99	8	99	6	95	10	100	1	100	1	99	11	92	23	96	19
22	17-058-01	100,6	98	8	100	2	93	23	100	5	100	3	100	1	100	4	100	5	97	20	98	6	92	25
23	17-107-02	97,2	94	23	98	13	88	25	98	15	95	23	91	20	96	22	95	24	97	19	90	25	98	7
24	18-023D-03	98,9	96	21	97	18	91	24	99	10	98	15	93	16	99	7	99	9	92	25	95	17	97	17
25	19-007D-05	101,2	98	4	100	4	97	10	100	2	100	3	98	6	100	2	100	3	97	18	97	9	94	23
MEAN			96,8		97,8		96,1		96,8		97,8		94,3		97,7		98,2		97,9		95,7		96,9	
CV					1,9		4,4		9,0		1,8		3,3		1,8		1,3		2,1		2,4		3,5	
LSD (0,10)					2,0		4,5		9,2		1,9		3,3		1,9		1,3		2,2		2,5		3,6	
LSD (0,05)					2,5		5,8		11,9		2,5		4,3		2,4		1,7		2,8		3,2		4,7	

TABLE 16: Mean germinative energy (8ml24h) and rankings of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel.			Localities																					
		GE %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr.no.	Entry	of std.	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk	8ml24h	Rk
1	Kadie	100,0	7	23	2	24	10	21	5	20	4	17	3	20	18	19	7	12	13	18	4	22	0	25
2	Bitou	101,0	7	21	7	18	8	23	6	18	3	19	3	19	11	23	7	14	14	16	8	20	5	19
3	Malgas	314,1	22	1	26	2	41	1	12	4	14	1	11	2	52	1	15	3	29	2	16	5	12	1
4	22-900-01	253,7	18	2	30	1	31	2	13	2	9	7	6	8	37	2	12	4	27	3	17	4	10	6
5	13-039-06	91,2	7	25	10	13	7	25	2	24	3	22	1	24	19	17	9	10	8	25	4	23	5	14
6	13-041-02	244,8	18	3	4	23	21	6	12	3	12	5	5	11	29	7	16	2	43	1	12	12	8	8
7	13-041-03	182,7	13	10	8	17	23	3	10	7	12	4	4	16	21	10	17	1	10	23	13	8	7	9
8	14-008-14	190,4	14	7	11	12	20	7	9	11	8	8	5	10	32	5	10	7	19	10	8	19	11	5
9	15-040-04	111,9	8	19	13	10	15	14	12	5	3	23	2	22	17	21	1	25	11	21	4	24	8	7
10	15-042-04	121,0	9	17	7	19	12	19	0	25	5	15	3	18	17	20	7	13	20	9	10	18	4	23
11	15-046-03	184,0	13	9	21	5	22	4	8	12	6	11	5	13	31	6	7	11	22	6	12	11	5	15
12	18-900-746	213,2	15	4	23	4	21	5	16	1	9	6	11	1	20	14	12	5	21	7	16	6	11	4
13	16-002-13	100,4	7	22	9	15	10	22	8	13	2	25	4	15	10	24	4	20	11	22	11	13	5	16
14	16-011-08	98,4	7	24	10	14	8	24	5	19	8	9	5	12	9	25	3	22	10	24	11	15	5	21
15	16-012-05	192,8	14	6	24	3	13	17	9	10	4	18	10	3	21	9	12	6	18	11	25	1	12	3
16	16-015-02	126,3	9	16	6	22	13	18	7	15	7	10	5	14	20	15	4	18	12	19	11	16	4	22
17	16-079-01	114,5	8	18	9	16	14	15	4	21	6	14	4	17	14	22	5	17	11	20	10	17	6	12
18	16-079-03	171,2	12	12	16	6	20	9	7	16	6	12	7	7	21	11	10	8	21	8	14	7	5	17
19	16-079-05	173,5	12	11	14	8	14	16	10	8	5	16	9	5	28	8	4	19	17	13	19	3	6	10
20	16-082-01	186,4	13	8	6	20	16	13	7	14	6	13	9	4	34	4	7	15	26	4	11	14	5	18
21	16-091-01	129,2	9	15	11	11	16	12	2	23	3	21	2	21	20	13	2	23	24	5	8	21	6	13
22	17-058-01	155,8	11	14	6	21	17	10	6	17	2	24	5	9	36	3	1	24	17	13	12	10	4	24
23	17-107-02	101,6	7	20	0	25	12	20	4	22	3	20	1	23	20	16	3	21	14	16	3	25	5	20
24	18-023D-03	164,3	12	13	14	9	20	8	10	9	12	3	0	25	21	12	9	9	15	15	12	9	6	11
25	19-007D-05	193,8	14	5	16	7	16	11	10	6	14	2	8	6	18	18	5	16	17	12	24	2	12	2
MEAN			11,5		12,2		16,9		7,7		6,7		5,1		23,1		7,5		18,0		11,9		6,6	
CV					41,9		24,3		3,3		49,4		42,4		22,1		36,9		71,0		38,9		42,8	
LSD (0,10)					5,4		4,4		40,9		3,5		2,3		5,4		3,0		13,6		4,9		3,0	
LSD (0,05)					7,0		5,6		52,8		4,5		3,0		7,0		3,8		17,5		6,3		3,9	

TABLE 17: Mean germinative energey (8ml72h) and rankings of entries in the PCT trial for the Rûens, 2024

Rûens		Mean rel.			Localities																			
		yield %	Mean		CALEDON		GREYTON		RIETPOEL		TYGERHOEK		NAPIER		PROTEM		KLIPDALE		NAPKEI		HEIDELBERG		HBVLAKTE	
Entr.no.	Entry	of std.	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk	8ml72h	Rk
1	Kadie	100,0	26	19	18	24	38	15	16	25	13	24	14	18	48	16	29	12	35	22	16	23	23	19
2	Bitou	93,9	24	23	23	19	33	18	21	19	17	19	18	16	35	25	23	16	34	23	21	17	18	24
3	Malgas	202,5	52	1	59	1	59	2	43	3	40	4	43	2	83	1	54	1	69	1	32	5	44	3
4	22-900-01	148,8	38	7	43	4	49	4	28	12	14	23	38	3	59	6	33	7	51	16	28	9	46	1
5	13-039-06	98,4	25	21	28	15	21	25	22	18	17	20	10	22	48	18	35	6	30	24	23	13	23	20
6	13-041-02	175,6	45	2	36	8	60	1	54	1	43	1	19	14	58	8	54	2	45	20	40	1	36	7
7	13-041-03	172,0	44	3	36	10	58	3	54	2	36	5	44	1	48	17	48	3	45	19	32	4	33	9
8	14-008-14	142,7	37	10	37	7	41	11	33	9	24	14	31	5	65	4	32	8	52	13	19	20	35	8
9	15-040-04	80,8	21	25	26	17	34	17	24	15	0	25	10	23	43	22	14	23	30	25	17	22	15	25
10	15-042-04	117,2	30	18	23	18	31	19	27	13	21	16	24	12	46	20	22	17	52	14	23	14	26	16
11	15-046-03	163,0	42	4	45	3	48	6	36	5	27	13	25	11	74	2	29	11	58	8	35	3	45	2
12	18-900-746	151,8	39	6	41	5	46	7	33	7	32	10	29	8	51	12	31	9	68	2	31	8	30	12
13	16-002-13	93,7	24	24	21	22	25	24	16	24	15	22	15	17	37	24	12	24	64	6	15	24	18	22
14	16-011-08	125,4	32	15	33	13	42	10	17	23	29	12	30	6	47	19	31	10	48	18	23	12	25	18
15	16-012-05	155,9	40	5	52	2	28	23	31	10	34	7	32	4	59	7	46	4	51	15	37	2	43	4
16	16-015-02	118,6	31	17	22	20	30	21	18	21	41	3	12	21	52	10	23	15	48	17	20	18	30	13
17	16-079-01	99,4	26	20	27	16	31	20	17	22	23	15	13	20	37	23	21	19	44	21	24	11	21	21
18	16-079-03	143,2	37	8	32	14	42	9	22	17	33	8	29	7	55	9	27	14	57	10	24	10	42	5
19	16-079-05	135,6	35	13	36	9	49	5	24	14	34	6	28	9	51	11	16	22	53	12	31	7	28	15
20	16-082-01	125,2	32	16	20	23	38	13	24	16	19	18	14	19	62	5	22	18	66	3	17	21	29	14
21	16-091-01	136,7	35	12	34	11	45	8	29	11	32	9	18	15	50	13	17	21	65	5	20	19	41	6
22	17-058-01	131,5	34	14	21	21	40	12	33	8	16	21	8	25	72	3	18	20	66	4	21	15	32	11
23	17-107-02	95,9	25	22	9	25	29	22	20	20	20	17	10	24	50	14	10	25	57	9	8	25	18	23
24	18-023D-03	142,5	37	11	39	6	38	13	37	4	32	11	19	13	50	15	45	5	62	7	21	16	26	17
25	19-007D-05	143,0	37	9	33	12	35	16	34	6	42	2	27	10	46	21	27	13	57	11	32	6	32	10
MEAN			33,9		31,8		39,6		28,5		26,1		22,4		53,1		28,7		52,2		24,3		30,3	
CV					22,0		18,2		27,4		44,2		30,5		14,8		26,2		21,2		25,7		25,6	
LSD (0,10)					7,4		7,6		8,3		12,2		7,2		8,3		8,0		11,8		6,6		8,2	
LSD (0,05)					9,6		9,9		10,7		15,7		9,3		10,7		10,3		15,2		8,6		10,6	

TABLE 18: Agronomic characteristics of the entries in the PCT Trial in the Western Rûens, 2024

Western Rûens		General	Stage of	Straw	
Entry no.	Entry	appearance	Ripeness	Height (cm)	Strength
1	Kadie	5,5	3,0	95	5,0
2	Bitou	5,3	3,1	105	4,8
3	Malgas	5,7	3,0	95	5,0
4	22-900-01	5,4	3,0	100	5,0
5	13-039-06	5,5	3,0	90	5,0
6	13-041-02	5,2	3,2	90	5,0
7	13-041-03	5,3	3,0	90	4,6
8	14-008-14	5,5	3,0	100	4,9
9	15-040-04	5,4	2,9	100	5,0
10	15-042-04	5,0	2,9	100	5,0
11	15-046-03	6,0	3,0	100	5,0
12	18-900-746	5,9	3,3	105	5,0
13	16-002-13	4,7	3,0	100	4,9
14	16-011-08	5,3	3,0	105	4,9
15	16-012-05	5,5	3,0	100	4,9
16	16-015-02	5,2	2,9	95	4,9
17	16-079-01	5,2	2,9	105	5,0
18	16-079-03	5,3	3,0	100	4,9
19	16-079-05	5,2	2,9	95	4,8
20	16-082-01	5,0	3,0	90	5,0
21	16-091-01	5,1	2,9	90	5,0
22	17-058-01	5,4	3,1	90	5,0
23	17-107-02	5,0	2,9	95	5,0
24	18-023D-03	5,4	2,9	100	4,9
25	19-007D-05	5,5	2,9	110	4,9

(Localities: Caledon, Rietpoel & Greyton)

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 characteristics of the entries in the PCT trial in the Southern Rûens, 2024

Southern Rûens		General	Stage of	Straw	
Entry no.	Entry	appearance	Ripeness	Height (cm)	Strength
1	Kadie	5,6	3,0	90	5,0
2	Bitou	5,4	3,0	90	5,0
3	Malgas	5,6	3,0	90	5,0
4	22-900-01	5,5	3,0	85	5,0
5	13-039-06	5,6	3,0	90	5,0
6	13-041-02	6,0	3,1	85	5,0
7	13-041-03	6,3	3,0	90	5,0
8	14-008-14	6,1	3,1	80	5,0
9	15-040-04	5,1	3,0	90	5,0
10	15-042-04	5,7	3,0	90	5,0
11	15-046-03	5,6	2,9	95	5,0
12	18-900-746	5,6	3,1	95	5,0
13	16-002-13	5,5	2,6	90	5,0
14	16-011-08	6,1	2,9	90	5,0
15	16-012-05	5,7	2,9	95	5,0
16	16-015-02	5,3	2,9	90	5,0
17	16-079-01	5,5	2,9	100	5,0
18	16-079-03	5,2	2,8	85	4,7
19	16-079-05	5,2	3,0	95	5,0
20	16-082-01	5,4	3,0	90	5,0
21	16-091-01	5,4	2,9	100	5,0
22	17-058-01	5,6	2,9	100	5,0
23	17-107-02	4,7	3,1	90	5,0
24	18-023D-03	4,9	2,9	85	5,0
25	19-007D-05	5,5	3,2	90	5,0

(Localities: Napier, Klipdale & Protem)

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 characteristics of the entries in the PCT Trial in the Eastern Rûens, 2024

Eastern Rûens Entry no.	Entry	General appearance	Stage of Ripeness	Straw Strength
1	Kadie	5,3	3,2	5,0
2	Bitou	5,2	3,5	5,0
3	Malgas	5,6	3,3	5,0
4	22-900-01	6,0	3,0	5,0
5	13-039-06	5,6	3,5	5,0
6	13-041-02	5,5	3,2	5,0
7	13-041-03	5,5	3,3	5,0
8	14-008-14	5,1	3,2	5,0
9	15-040-04	4,9	3,5	5,0
10	15-042-04	5,3	3,3	5,0
11	15-046-03	5,7	3,4	5,0
12	18-900-746	5,1	4,0	5,0
13	16-002-13	5,7	3,2	5,0
14	16-011-08	6,0	3,2	5,0
15	16-012-05	5,3	3,5	5,0
16	16-015-02	5,4	3,2	5,0
17	16-079-01	4,8	3,3	5,0
18	16-079-03	5,0	3,3	5,0
19	16-079-05	5,0	3,4	5,0
20	16-082-01	5,4	3,3	5,0
21	16-091-01	4,8	3,7	5,0
22	17-058-01	5,8	3,7	4,9
23	17-107-02	5,6	3,2	4,9
24	18-023D-03	5,3	3,5	4,9
25	19-007D-05	5,3	3,2	4,9

(Localities: Napkei, Heidelberg & Heidelbergvlakte)

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

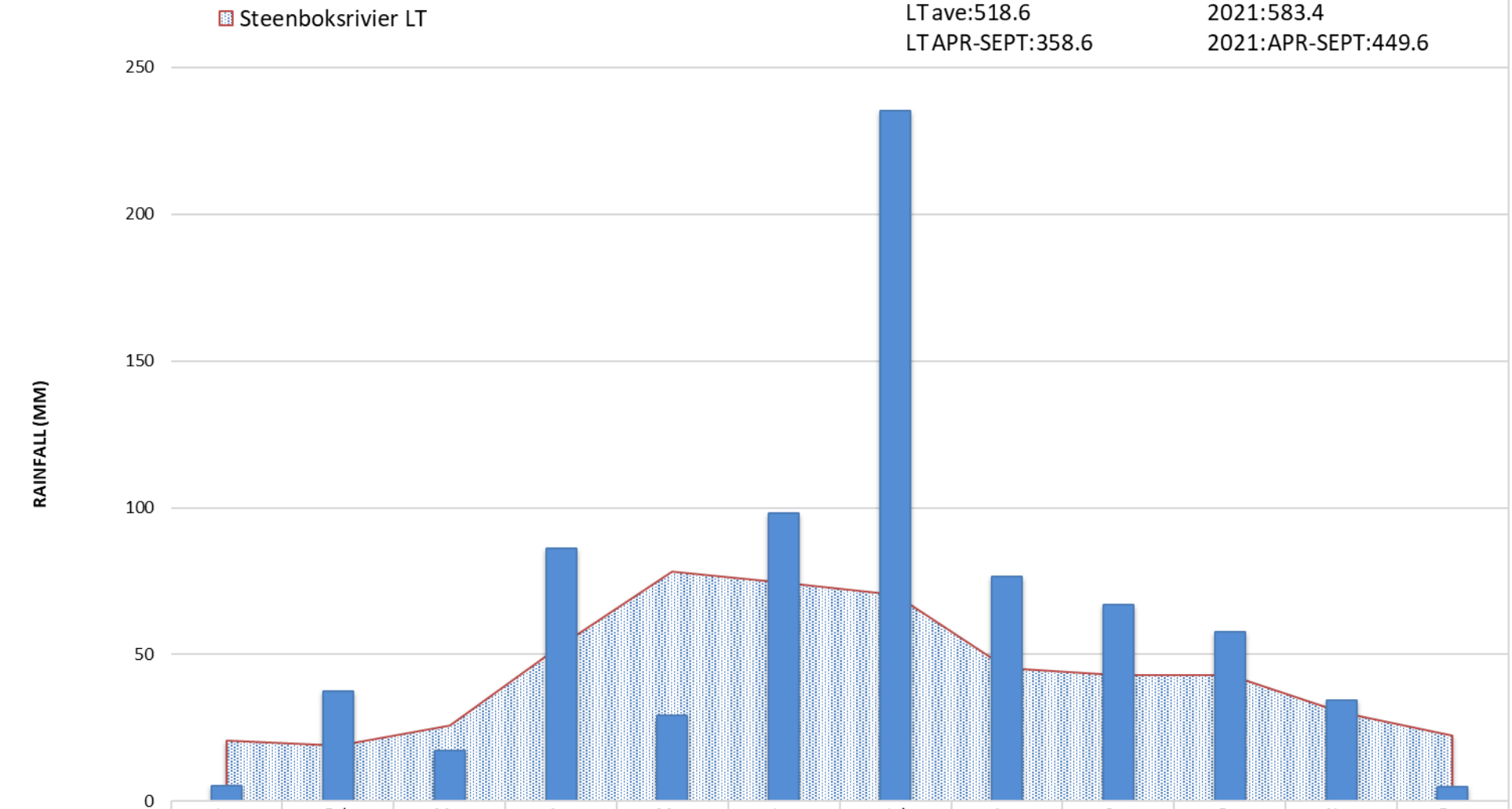
1 - No resistance to lodging

5 - Total resistance to lodging

TABLE 21: Production statistics of the trial localities for the PCT trials in the Rûens, 2024

AREA	LOCALITIES	PLANTING DATE	CROP 2024	FERTILIZER		TOTAL (N)	HERBICIDE			FUNGICIDE/PESTICIDE	
				PLANTING (N)	TOP						
				V1:1:0 (OMNIA)	GREENSULF 35		PRE PLANT	POST PLANT	POST PLANT	1ST APPLICATION	2ND APPLICATION
Wes-Rûens (OA)	CALEDON	20 May 2024	CANOLA	15	30	45	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	GREYTON	27 May 2024	BRAAK	15	60	75	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	RIETPOEL	8 May 2024	WHEAT	15	60	75	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	TYGERHOEK	17 May 2024	OATS	15	60	75	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
Suid-Rûens (OA)	BREDASDORP	8 May 2024	WHEAT	15	27	42	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	NONE	NONE	NONE
	NAPIER	2 May 2024	WHEAT	15	30	45	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/DIFFLAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	KLIPDALE	17 May 2024	WHEAT	15	10	45	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	PROTEM	7 May 2024	BRAAK	15	10	45	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
Oos-Rûens (SSK)	NAPKEI	7 May 2024	WHEAT	15	30	45	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	SWELLENDAM	29 Apr 2024	CANOLA	15	30	50	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	HEIDELBERG	6 May 2024	CANOLA	25	35	55	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/LOGRAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX
	HEIDELBERGVLAKTE	22 Apr 2024	WHEAT	15	0	15	TRIFLURALIN/PARAQUAT/PYRINEX	BOXER/DIFFLAN	MCPA, QUILEX, BRUSH-OFF, AXIAL	ABACUS	CERIAX

Figure 1: Rainfall patterns for Western Rûens: Long term vs. 2024
Steenboksrivier (Caledon)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Steenboksrivier LT	21	19	26	53	78	74	70	45	43	43	30	22
Steenboksrivier	5	37	17	86	29	98	235	76	67	58	35	5

Figure 2: Average grain yield and quality parameters for the PCT trials in the Rûens, 2024.

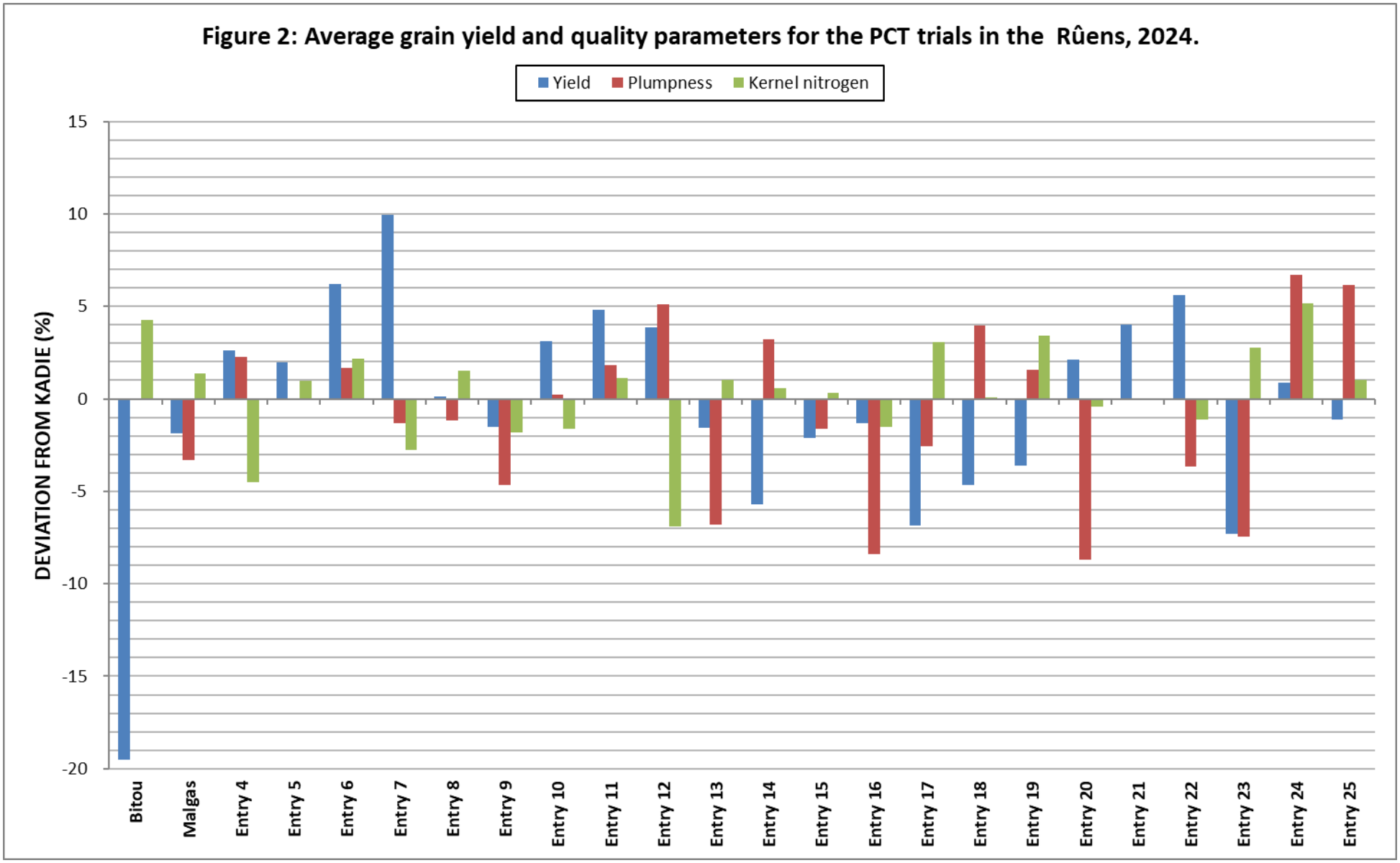


Figure 3: Long term relative performance of cultivars in the PCT 2024

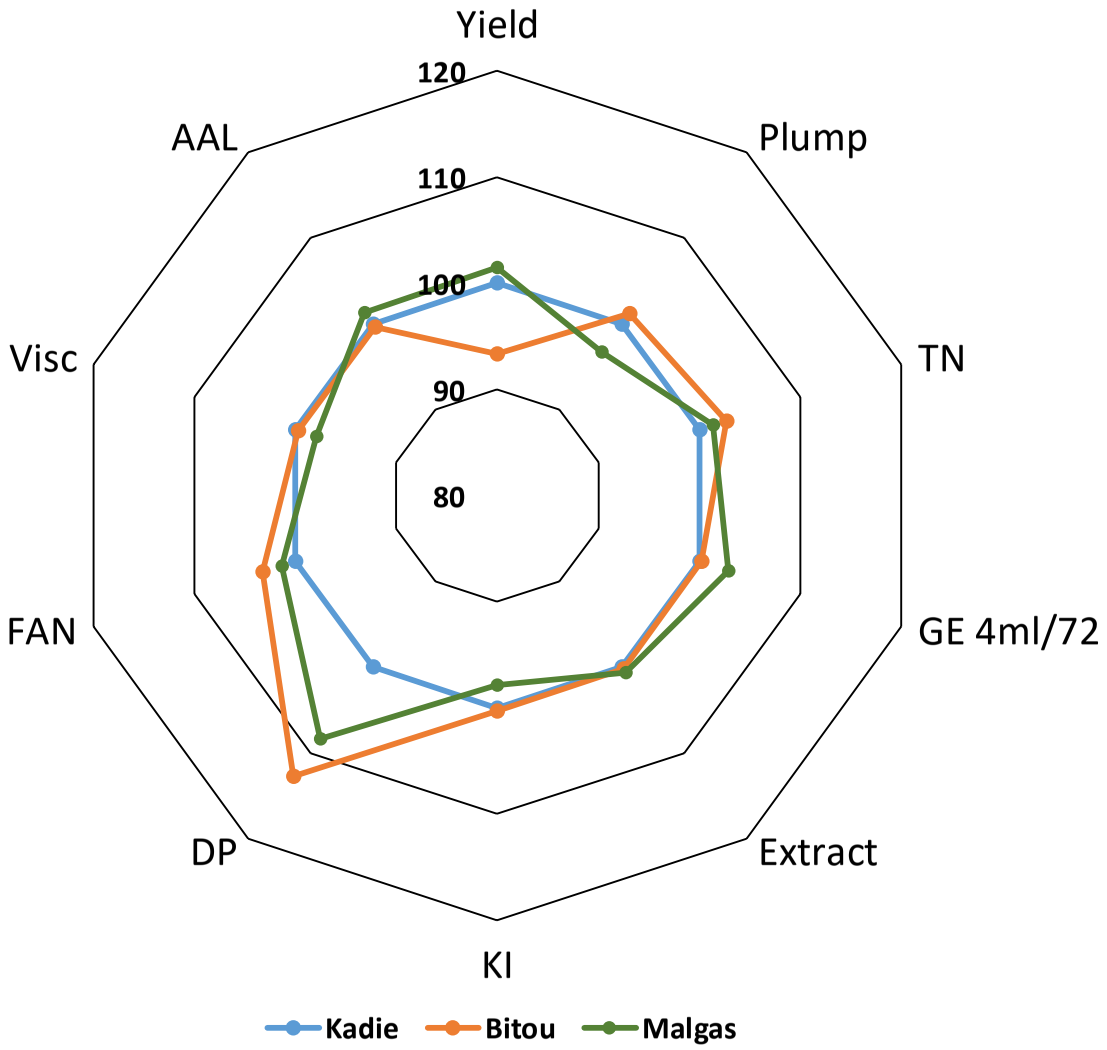


Figure 4: Long term relative performance of lines in the PCT 2024 (4th year)

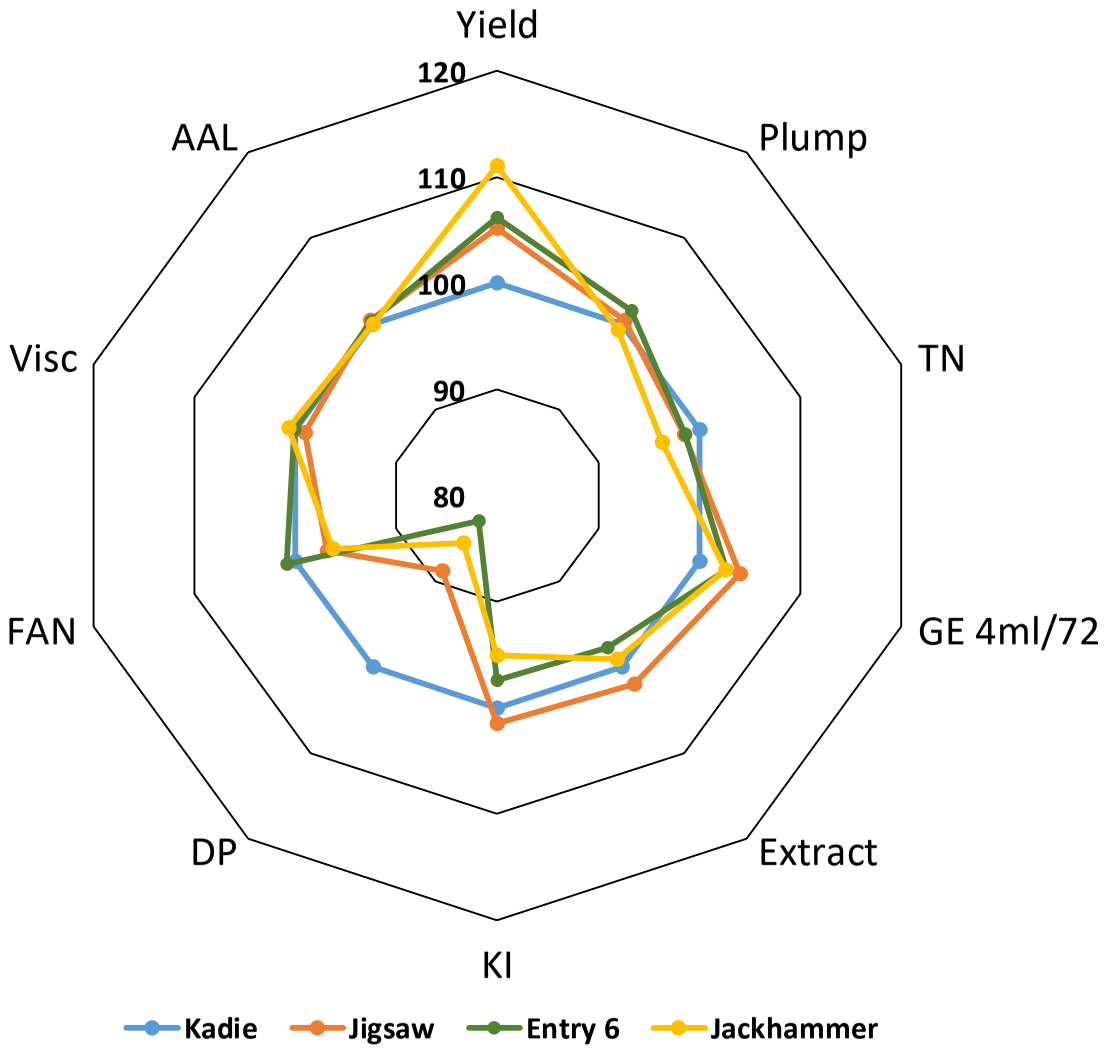


Figure 5: Long term relative performance of lines in the PCT 2024 (3rd year)

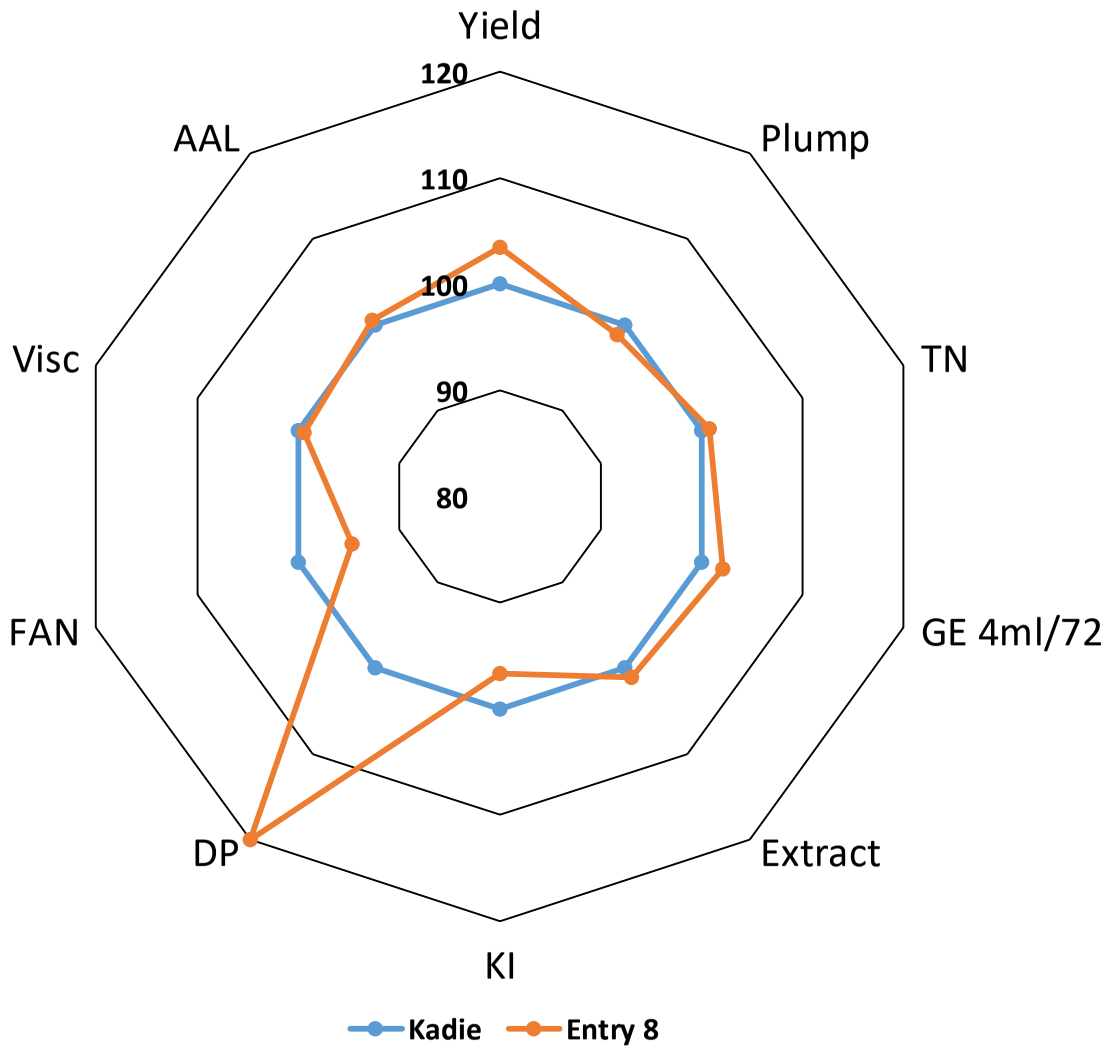


Figure 6: Long term relative performance of lines in the PCT 2024 (2nd year)

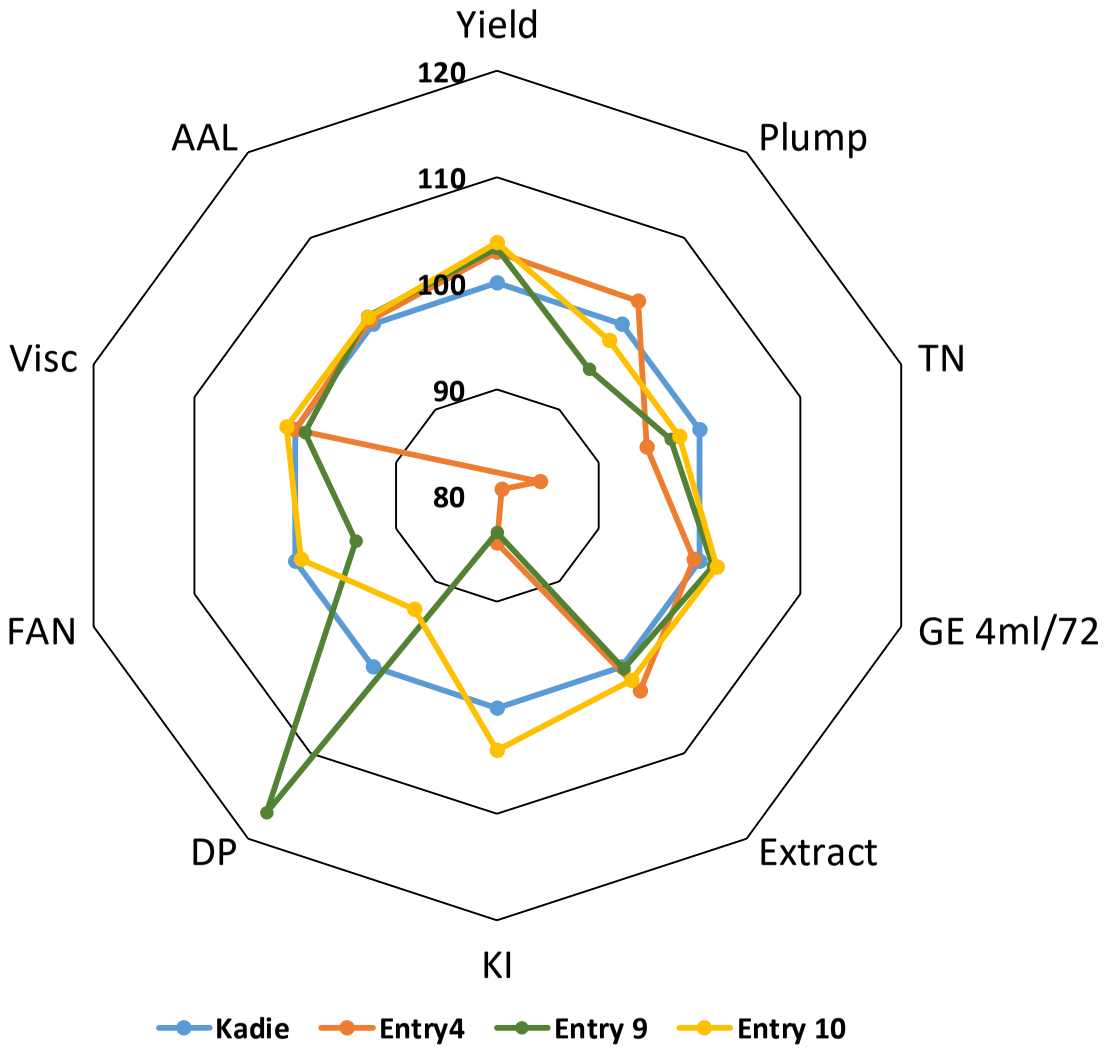


Figure 7: Long term relative performance of lines in the PCT 2024 (2nd year)