

2018 National Cultivar Evaluation results

Wheat yields on the increase under irrigation conditions

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At the recent annual meeting of the National Cultivar Evaluation Workgroup one cultivar, SST 8156, was added to the list of recommended cultivars. No existing cultivars were removed from the list.

The stabilising effect of wheat production under irrigation has been well documented. Production in the rain fed areas of the Western Cape and under dryland conditions in the summer rainfall area has varied considerably over the past seasons due to dry spells that occurred in both regions.

Looking at the wheat yield results under irrigation over the past three seasons, it seems that there is a steady increase in the yield obtained in all the production regions. In Table 1 the yields realised in the National Cultivar Evaluation Programme (NCEP) are summarised for all regions over three years.

TABLE 1: WHEAT YIELDS OBTAINED IN THE NCEP (EARLIER PLANTING) FROM 2016 - 2018.

PRODUCTION AREA	YIELD (T/HA)			PERCENTAGE INCREASE
	2016	2017	2018	
COOLER AREA	9,38	9,79	11,81	26
WARMER AREA	7,26	8,01	8,96	23
HIGHVELD	7,06	7,16	7,94	12
KWAZULU-NATAL	6,61	7,15	7,10	7
AVERAGE	7,58	8,03	8,95	18

TABLE 2: COOLER CENTRAL IRRIGATION AREA (EARLIER PLANTING). AVERAGE YIELD (T/HA) OF ENTRIES DURING THE FULL OR PARTIAL PERIOD FROM 2015 - 2018.

CULTIVAR	2018		2017		2016		2015		4 YEAR AVERAGE 2015 - 2018		3 YEAR AVERAGE 2016 - 2018		2 YEAR AVERAGE 2017 - 2018	
	Yield	R	Yield	R	Yield	R	Yield	R	Yield	R	Yield	R	Yield	R
BUFFELS	-	-	-	-	-	-	8,06	22	-	-	-	-	-	-
DUZI	11,99	9	9,50	19	9,36	12	8,28	21	9,78	14	10,28	10	10,74	13
KOEDOES	12,16	4	9,19	20	-	-	9,25	11	-	-	-	-	10,67	14
KROKODIL	10,68	22	9,84	8	10,06	3	9,20	13	9,94	11	10,19	12	10,26	19
PAN 3400	12,64	2	9,72	13	10,12	1	9,90	1	10,59	1	10,83	1	11,18	3
PAN 3471	11,47	17	10,22	2	10,08	2	8,81	18	10,15	7	10,59	4	10,85	10
PAN 3497	12,36	3	10,19	3	9,88	4	9,44	8	10,47	3	10,81	2	11,28	2
PAN 3515	11,70	15	10,42	1	9,15	14	9,18	14	10,11	8	10,42	8	11,06	4
PAN 3541	11,82	13	-	-	-	-	-	-	-	-	-	-	-	-
PAN 3623	11,38	19	9,77	9	8,71	19	9,45	7	9,83	12	9,95	16	10,58	16
PAN 3644	11,56	16	-	-	-	-	-	-	-	-	-	-	-	-
RENOSTER	12,07	7	9,52	17	-	-	8,90	16	-	-	-	-	10,80	12
SABIE	11,42	18	9,56	15	9,09	16	9,06	15	9,78	15	10,02	15	10,49	17
SST 806	12,65	1	9,91	6	9,76	5	9,70	3	10,51	2	10,78	3	11,28	1
SST 8125	-	-	-	-	9,56	9	9,74	2	-	-	-	-	-	-
SST 8134	-	-	-	-	-	-	9,31	10	-	-	-	-	-	-
SST 8135	12,04	8	10,08	5	9,63	7	9,55	5	10,33	4	10,58	5	11,06	4
SST 8154	11,89	12	9,73	12	8,95	18	-	-	-	-	10,19	13	10,81	11
SST 8155	-	-	-	-	9,13	15	-	-	-	-	-	-	-	-
SST 8156	12,10	5	9,76	10	-	-	-	-	-	-	-	-	10,93	7
SST 835	12,10	5	9,75	11	9,57	8	9,56	4	10,25	5	10,47	7	10,93	8
SST 843	10,86	21	9,50	18	7,62	20	8,02	23	9,00	16	9,33	17	10,18	20
SST 866	11,29	20	9,57	14	9,64	6	8,79	19	9,82	13	10,17	14	10,43	18
SST 867	-	-	-	-	-	-	8,53	20	-	-	-	-	-	-
SST 875	11,99	9	9,85	7	9,35	13	9,21	12	10,10	9	10,39	9	10,92	9
SST 877	-	-	-	-	9,09	17	8,83	17	-	-	-	-	-	-
SST 884	11,79	14	9,54	16	9,45	10	9,50	6	10,07	10	10,26	11	10,66	15
SST 895	11,90	11	10,14	4	9,45	10	9,32	9	10,20	6	10,50	6	11,02	6
MEAN	11,81	-	9,79	-	9,38	-	9,11	-	10,06	-	10,34	-	10,81	-
LSD_i (0,05)	0,60	-	0,49	-	0,44	-	0,26	-	0,24	-	0,30	-	0,38	-

The increase in yield was significant in all the regions, with an average increase of 18%. This is clearly positive news for the whole wheat value chain.

Irrigation wheat cultivar evaluation trials for 2018 were carried out in the Cooler Central irrigation areas, the Warmer Northern irrigation areas, KwaZulu-Natal and the Highveld. Yields were excellent in all the regions and no major problems were experienced in any production areas. The availability of wheat cultivars with high yield potential and acceptable grading quality is an important contributor to the profitability of wheat production under irrigation. Results from the National Cultivar Evaluation Programme under irrigation show that such cultivars are indeed available.

The results of the 2018 cultivar trials under irrigation were presented to the National Wheat Cultivar Evaluation Workgroup on 6 February 2019. The report was accepted and the new recommendations for the 2019 season were finalised.

The detailed results for the 2018 season, as well as the new recommendations are available on the Agricultural Research Council's website, www.arc.agric.za.

Results obtained in the 2018 season

Irrigation trials are planted at two different planting times in the irrigation areas, namely an 'earlier' and a 'later' planting, with the exact dates varying between regions. The exception is the KwaZulu-Natal area, where the planting window is too narrow for two planting dates. This information is valuable when deciding on a cultivar to be planted in a specific crop sequence situation where the planting date is determined by the crops produced before and after the wheat.

In Tables 2 to 8 the yield results for the 2018 season, as well as two, three and four year results for each region and planting date are presented.

More detailed information on the performance of irrigation wheat cultivars, including figures on the one year performance, as well as long term data for all the production regions and different planting times are available in the Production Guidelines published by ARC-Small Grain on an annual basis. These guidelines will be available to producers from middle March.

For any additional information, producers are welcome to contact Willem Kilian at 058 307 3498 or kilianw@arc.agric.za.



TABLE 3: COOLER CENTRAL IRRIGATION AREA (LATER PLANTING). AVERAGE YIELD (T/HA) OF ENTRIES DURING THE FULL OR PARTIAL PERIOD FROM 2015 - 2018.

CULTIVAR	2018		2017		2016		2015		4 YEAR AVERAGE 2015 - 2018		3 YEAR AVERAGE 2016 - 2018		2 YEAR AVERAGE 2017 - 2018	
		R		R		R		R		R		R		R
BUFFELS	-	-	-	-	-	-	6,68	23	-	-	-	-	-	-
DUZI	10,39	11	9,67	3	9,58	3	7,52	20	9,29	12	9,88	7	10,03	9
KOEDOES	11,06	3	9,52	8	-	-	9,25	3	-	-	-	-	10,29	3
KROKODIL	10,24	16	9,36	13	9,51	4	8,74	10	9,46	8	9,71	10	9,80	13
PAN 3400	10,56	9	9,51	9	9,67	2	9,04	7	9,69	4	9,91	6	10,03	8
PAN 3471	10,11	18	9,49	10	9,47	5	8,80	9	9,47	7	9,69	11	9,80	14
PAN 3497	10,17	17	9,03	18	9,43	9	8,34	16	9,24	13	9,54	14	9,60	17
PAN 3515	10,09	19	9,47	12	9,39	11	8,30	17	9,31	11	9,65	12	9,78	15
PAN 3541	10,68	8	-	-	-	-	-	-	-	-	-	-	-	-
PAN 3623	10,93	4	9,57	7	9,45	6	9,25	4	9,80	3	9,98	4	10,25	5
PAN 3644	10,26	15	-	-	-	-	-	-	-	-	-	-	-	-
RENOSTER	10,91	5	9,20	15	-	-	9,45	1	-	-	-	-	10,06	7
SABIE	9,34	22	9,10	16	8,91	17	7,40	21	8,69	16	9,12	16	9,22	20
SST 806	10,28	14	9,35	14	9,22	14	8,57	12	9,36	10	9,62	13	9,81	12
SST 8125	-	-	-	-	8,85	18	8,42	15	-	-	-	-	-	-
SST 8134	-	-	-	-	-	-	8,95	8	-	-	-	-	-	-
SST 8135	10,32	12	9,48	11	9,36	12	8,43	14	9,40	9	9,72	9	9,90	11
SST 8154	11,22	2	9,74	2	9,31	13	-	-	-	-	10,09	1	10,48	1
SST 8155	-	-	-	-	8,85	19	-	-	-	-	-	-	-	-
SST 8156	10,43	10	8,98	19	-	-	-	-	-	-	-	-	9,70	16
SST 835	10,08	20	9,03	17	9,19	15	8,19	18	9,12	14	9,43	15	9,55	18
SST 843	9,70	21	8,96	20	8,49	20	8,43	13	8,89	15	9,05	17	9,33	19
SST 866	10,30	13	9,67	4	9,45	6	9,11	6	9,63	6	9,81	8	9,98	10
SST 867	-	-	-	-	-	-	6,74	22	-	-	-	-	-	-
SST 875	10,71	7	9,74	1	9,45	8	8,65	11	9,64	5	9,97	5	10,23	6
SST 877	-	-	-	-	9,01	16	7,70	19	-	-	-	-	-	-
SST 884	11,23	1	9,58	6	9,42	10	9,15	5	9,85	2	10,08	2	10,41	2
SST 895	10,91	5	9,62	5	9,69	1	9,25	2	9,87	1	10,07	3	10,27	4
MEAN	10,45	-	9,40	-	9,28	-	8,45	-	9,42	-	9,72	-	9,93	-
LSD: (0,05)	0,49	-	0,44	-	0,33	-	0,28	-	0,20	-	0,24	-	0,33	-