Aspects influencing the choice of canola cultivars in 2019

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During the 2018 season a total of 18 cultivars were tested in the cultivar evaluation programme. The cultivars tested included six conventional, six CL (ClearfieldR, Imazamox tolerance) and six from the TT group (Triazine tolerance). All 18 cultivars were hybrids. One new conventional cultivar, Quartz, and one new TT cultivar, Hyola 350TT, were tested. The cultivar AG4510 TT underwent a name change and is now known as Alpha TT.

Physiological development

The speed of physiological development is determined by the season. In the Swartland the average number of days to flowering per trial varied from 67 to 90 days last year. This means the Swartland and the Southern Cape will differ from year to year.

It is important that cultivars maintain their position relative to other cultivars; fast cultivars must remain fast and slow cultivars must remain slow. *Table 1* contains a summary of the characteristics of all locally tested cultivars. When choosing a cultivar, it is important that producers keep certain aspects in mind.

Available seed

It is important for producers to know if their selected cultivar is available. If this is not the case, does the expected yield of the producer's second or third choice match that of the first? Is the cultivar proven (previously tested in the national cultivar trials)?

Yield potential and yields are summarised in *Table 2* and *Table 3*. The ideal is to compare more than one year's data. Evaluation of cultivar performance in the Swartland and in the Southern Cape region indicates adaptability. This can also influence management decisions.

Open pollinated cultivars are virtually unobtainable. Producers are advised not to keep back the seed of hybrid varieties. This practice leads to reduced yields and uneven ripening.

Table 1: Characteristics of the cultivars trialled from 2017 to 2018.

Cultivar	Type		Year 1st test	Days to flower Rûens	Days to flower Swartl.	Growth period. Days to flower	Days to end flowering (Lang.)	Yield (% trial ave.) Swartl.	Yield (% trial ave.) Rûens	Black stem index	Black stem index + Jockey #	Black stem resistance group #
CB Agamax	Conv	Agricol	2008	99	77	med. early	med. early	100	99	ms^{2014}	mr^{2014}	AB
Hyola 50	Conv	K2 Seed	2009	103	86	med.	late	100	100	r^{2016}	r^{2016}	AD
CB Tango	Conv	Agricol	2013	84	70	early	early	103	98	ms^{2014}	mr^{2014}	B
Belinda	Conv	Bayer	2014	100	81	med.	late	99	98	-	r^{s}	-
Diamond	Conv	Agricol	2015	86	68	early	early	114	113	mr^{2017}	-	ABF
Quartz	Conv	Agricol	2018	101	80	-	-	110^{2018}	120^{2018}	r^{2018}	-	ABD
Hyola 575CL	CL	K2 Seed	2011	101	79	med.	med.	101	94	r^{2017}	r^{2015}	BF
44Y89CL	CL	Pioneer	2014	96	77	med. early	med. early	110	106	mr^{2017}	r^{2017}	BC
Hyola 577CL	CL	Barenbrug	2014	107	85	late	late	95	94	r^{2016}	r^{2015}	B
44Y90CL	CL	Pioneer	2016	98	79	med.	med. early	113	116	r-mr^{2017}	r^{2017}	B
45Y91CL	CL	Pioneer	2016	107	88	late	med.	103	105	mr^{2017}	r^{2017}	B
43Y92	CL	Pioneer	2017	95	80	med. early	med. early	101	111	r-mr^{2017}	r^{2017}	B
CB Atomic HT	TT	Agricol	2013	99	80	med.	med.	82	89	ms^{2015}	mr^{2015}	AB
Hyola 555TT	TT	K2 Seed	2011	93	76	med. early	med. early	92	88	mr^{2014}	r^{2014}	D
Hyola 559TT	TT	Barenbrug	2014	97	80	med. early	med.	91	92	r-mr^{2017}	-	ABD
Hyola 650TT	TT	Barenbrug	2017	97	84	med.	late	91	93	r^{2017}	-	ABD
Alpha TT	TT	Agricol	2017	99	79	med. early	med.	96	106	ms-mr^{2018}	r^{2018}	BF
Hyola 350TT	TT	K2 Seed	2018	88	72	-	-	104^{2018}	97^{2018}	r^{2017}	-	ABDF

r = resistance; mr = moderate resistance; ms = moderately susceptible; s = susceptible. # Data from Australia in 'Blackleg Management Guide Fact Sheet – Western and Southern Regions' (2014 to 2017). Swartland black stem data has been used where no other data was available.

The rate of physiological development, especially the days to flowering and the flowering period, is important. Early moisture will occasionally be available in the Rûens area. For early planting (beginning of April), cultivars with a slightly longer growing season are recommended. Fast-growing cultivars can be planted too early. In areas where there are brief rainfall periods, short growing season cultivars are preferable (*Table 1*).

Resistant weeds

Cultivar selection may be determined by the presence of resistant weeds. The vigorous growth and establishment of conventional and CL cultivars helps to suppress weeds. Producers must plan properly beforehand and consider weed history before deciding on a cultivar. The type of cultivar (conventional, TT or CL) planted will determine the annual chemical herbicide programme. The possibility of group two herbicide transfer (SU) may also influence cultivar selection.

Conventional and CL cultivars are more vigorous than TT cultivars. The average yields of the first two groups were approximately 10 to 15% higher than those of the TT group.

Disease threats

Growers who plant in areas where the risk of black stem is high should plant cultivars with good black stem resistance. (*Table 1* and *Canola Focus 51*). In 2018, black stem occurrence in the Swartland was 51,2% lower in the corresponding trials than it had been in 2017. Alternate planting of cultivars with varying genetic resistance is recommended.

There were only a few cases of Sclerotinia in 2018, but the range of the disease expanded in the Swartland. Sclerotinia is common in the Rûens and there is no resistant cultivar. The sclerotia, the fungal storage bodies, may go dormant in the soil for a few seasons, emerging when conditions are favourable. The disease must be managed (see *Canola Focus 63*).

Information and cultivar traits are summarised in *Table 1*. The information includes days to flowering and flowering period, as well as yield potential, which has been recently added. The black stem index is divided into two columns. The second column

Table 2: Swartland seed yields expressed as a percentage for 2016 to 2018.

	2016	2017	2018	2016-2018		2017-2018	
Diamond	113	108	119	116	1	114	1
Belinda	101	103	96	102	5	99	5
CB Tango	103	105	101	106	2	103	2
Hyola 50	102	100	100	103	4	100	4
CB Agamax	102	98	102	103	3	100	3
Quartz			110				
Conv. ave.	**104**	**103**	**103**	**106**		**103**	
44Y90	106	114	110	112	1	113	1
45Y91	110	104	101	108	3	103	4
Hyola 577CL	90	95	95	95	5	95	6
44Y89	105	106	112	110	2	110	2
Hyola 575CL	96	100	100	101	4	101	5
43Y92		105	112			109	3
CL ave.	**101**	**104**	**105**	**105**		**105**	
Hyola 559TT	91	90	91	93	1	91	4
CB Atomic HT	90	89	76	88	3	82	5
Hyola 555TT	91	94	90	93	1	92	2
Hyola 650TT		93	89	82	4	91	3
Alpha TT		95	97			96	1
Hyola 350			104				
TT ave.	**91**	**92**	**91**	**88**		**91**	

Table 3: Rûens seed yields expressed as a percentage for 2016 to 2018.

	2016	2017	2018	2016-2018		2017-2018	
Diamond	114	116	108	115	1	113	1
Belinda	111	98	97	105	5	98	5
CB Tango	92	102	92	97	2	98	2
Hyola 50	91	98	102	98	4	100	4
CB Agamax	102	98	99	102	3	99	3
Quartz			120				
Con. ave.	**102**	**102**	**100**	**103**		**102**	
44Y90	111	112	118	116	1	116	1
45Y91	116	106	104	112	3	105	4
Hyola 577CL	96	93	93	96	5	94	6
44Y89	109	106	104	109	2	106	2
Hyola 575CL	96	95	91	96	4	94	5
43Y92		109	112			111	3
CL ave.	**106**	**104**	**104**	**106**		**104**	
Hyola 559TT	86	92	90	91	1	92	4
CB Atomic HT	89	89	87	90	2	89	5
Hyola 555TT	87	90	85	89	3	88	2
Hyola 650TT		93	92	86	4	93	3
Alpha TT		101	110			106	1
Hyola 350			97				
TT ave.	**87**	**93**	**93**	**91**		**93**	



shows the black stem index after seed treatment with Jockey® or Galmano.

Local and international data

Where international information for specific cultivars is not available, local data was used. The last column indicates genetic resistance of cultivars with the best black stem resistance. The yield per cultivar, expressed as a percentage of the area average between 2016 and 2018, is summarised in *Table 2* and *Table 3*. In 2018, 14 of the 16 cultivars trialled had been tested for two or more seasons.

In the Swartland, the conventional cultivar Diamond (114%) and CL cultivar 44Y90 (113%) had the highest average percentage yield over the previous two seasons. The TT cultivar with the highest percentage yield for 2017 and 2018 in the Swartland was Alpha TT (96%), followed by Hyola 555, Hyola 559 and Hyola 650. The cultivars that performed best over three seasons in their respective groups were Diamond (conventional), 44Y90 (CL) and 44Y89.

In the Rûens, the CL cultivar 44Y90 (113%), followed by the conventional cultivar Diamond (110,9%), had the highest average percentage yield over the previous two seasons. The TT cultivar with the highest percentage yield for 2017 and 2018 in the Rûens was Alpha TT (106%), followed by Hyola 650TT (93%) and Hyola 559TT (92%). The cultivars with the best performance over three seasons in their respective groups were Diamond (conventional), 44Y90 (CL) and Hyola 559 (TT).

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