SOJABOON KULTIVARAANBEVELINGS VIR 2015/2016

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Hoewel sojabone ‘n gewas is wat bykans wêreldwyd verbou word, het individuele kultivars ‘n beperkte gebiedsaanpassing. Gevolglik sal die kultivar wat die beste aangepas is vir ‘n gegewe lokaliteit, dié een wees wat oor ‘n aantal jare die hoogste opbrengs en saadkwaliteit lewer. Onder vergelykbare omgewingstoestande en produksiepraktyke kan ‘n seleksie uit kultivars gemaak word wat ‘n hoë opbrengs en ‘n bo gemiddelde opbrengswaarskynlikheid het. Die Nasionale Sojaboonkultivarproewe van die LNR-Instituut vir Graangewasse en verskeie medewerkers lewer in die opsig waardevolle inligting ten opsigte van verskillende produksie areas in Suid-Afrika.

BELANGRIKE INLIGTING VIR KULTIVARKEUSE

Die belangrikste inligting wat in ag geneem moet word ten opsigte van kultivarkeuse by sojabone, is **lengte van groeiseisoen**. Anders as by die meeste algemeen verboude gewasse, is sojabone gevoelig vir daglengte en sal ‘n gegewe kultivar al hoe later ryp word hoe verder suid dit in Suider Afrika geplant word. Vir dieselfde rede sal plantdatum ook die lengte van die groeiseisoen beïnvloed en sal ‘n gegewe kultivar heelwat gouer blom by ‘n later plantdatum. Heersende temperatuur (veral nagtemperatuur) het ook ‘n invloed en

SOYBEAN CULTIVAR RECOMMENDATIONS FOR 2015/2016

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Although soybeans as a crop are grown worldwide, individual cultivars demonstrates a limited adaptation to specific geographical areas. The best adapted cultivar is therefore the one that will, in the long term, give the best yield and quality for a specific locality within a specific geographical area. A selection can be made of cultivars with high yield and above average yield probability under comparable environmental conditions as well as production practises. The National Soybean Cultivar Trials conducted by the ARC-Grain Crops Institute and several collaborators render a valuable service in identifying such cultivars for different production areas in South Africa.

IMPORTANT INFORMATION FOR CULTIVAR CHOICE

The **length of the growing season** is the most important characteristic to take into consideration in terms of cultivar choice for soybean. Unlike the other most commonly cultivated crops, soybean are sensitive to day length and a given cultivar will ripen later and result in a longer growing season the further south it is planted in Southern Africa. Planting dates will therefore also influence the length of the growing season and a given cultivar will flower much earlier should it be planted at a later planting date. Prevailing temperature

sojabone groei heelwat stadiger op die hoëveld, vergeleke met die warmer laeveld. Tabel 1 illustreer die invloed wat die lengte van groeiseisoene het ten opsigte van die verskillende kultivars asook vir ‘n spesifieke kultivar in verskillende produksiegebiede. Dit is belangrik om te onthou dat vroeë en later plantdatums binne dieselfde gebied ook die groeiseisoenlengte van ‘n kultivar beïnvloed.

Vir produsente met ondervinding van sojaboonproduksie kan die gevoeligheid vir daglengte en die genetiese variasie vir relatiewe groeiseisoenlengte, met vrug gebruik word vir byvoorbeeld hooiproduksie (gebruik van lang groeiseisoen kultivars), stroopskedulering (plant kultivars met verskillende rypword datums) en vir droogteontwyking of noodaanplantings (kultivars met ‘n relatief kort groeiseisoen). Vir produsente wat nie ondervinding het van sojaboonproduksie nie, kan dié eienskap ook by wyse van verkeerde kultivarkeuse tot gevolg hê dat die sojabone, a) nie wil ryp word nie in die geval van waar ‘n kultivar met ‘n te lang groeiseisoen in die gebied aangeplant is, b) reeds oesgereed is terwyl reën en hoë temperature stroop bemoeilik en kwaliteit benadeel waar ‘n kultivar met ‘n te kort groeiseisoen vir ‘n gebied gekies is en c) onstroopbaar is as gevolg van ‘n te lae peulhoogte.

Prosedure vir kultivarkeuse op grond van groeiseisoenlengte is dan as volg: Die lokaliteite waar sojaboonkultivarproewe uitgevoer is, is gegroepeer om warm-, matig- en koel gebiede aan te dui (Tabel 2). Wanneer daar ‘n kultivar keuse gemaak word is dit belangrik om

also has an effect, with soybean growing much slower on the Highveld compared to the warmer Lowveld. Table 1 illustrates the substantial variation for length of growing season among cultivars as well as for the different production areas.

Producers well experienced in soybean cultivation can utilize the photoperiod sensitivity of soybean, along with the genetic variation for relative length of the growing season with great success, for example, for hay production (a long growing season cultivar can be used), for scheduling of harvesting (plant cultivars with different ripening dates) and for drought avoidance or emergency planting (use relatively short growing season cultivars). For producers with little or no experience in soybean cultivation, this characteristic could prove to be hazardous when the wrong cultivar choice is made and optimal yield is not realised because a) the cultivar does not ripen where a too long grower has been planted for the area, b) is ready for harvesting while rain and high temperatures hamper harvesting and adversely affect quality where a too short grower has been planted for the area, and c) the cultivar is unable to be harvested because of a too low pod height.

Procedure for Cultivar choice using length of growing season: Localities where soybean trials were conducted during the past season were divided into warm-, moderate- and cool production areas (Table 2). When cultivar selections is been done it is important to establish which localities has the same climate conditions and to use these Tables

die gebied te identifiseer wat dieselfde klimaatstoestande het en dan die Tabelle te gebruik wat dieselfde klimaatstreek verteenwoordig. Risiko kan geminimaliseer word wanneer Tabel 1 en 3 gebruik word. As algemene reël word aanvaar dat kultivars met ‘n langer groeiseisoen die beste sal doen in gebiede met ‘n warmer klimaat, medium groeiseisoen kultivars in gebiede met ‘n gematigde klimaat en korter groeiseisoen kultivars in gebiede met ‘n koeler klimaat. Dit is egter belangrik om te onthou dat daar ook uitsonderings op die reël is en daarom word aanbeveel dat sowel opbrengs en aanpassingsvermoë van kultivars soos aangedui in Tabelle 4, 5, 6, 7, 8 and 9 saam met groeiseisoenlengte gebruik sal word om ‘n meer akkurate kultivarkeuse vir ‘n spesifieke gebied te maak.

Plantdatum beïnvloed sojabone se aanpassing en gevolglik kultivarkeuse. Die optimale plantdatum is normaalweg tydens November. In warmer gebiede kan produsente egter tot die eerste week in Januarie nog plant, maar dan word nouer rywydte, hoër plantpopulasie en ‘n vinniger-groeiende kultivar aanbeveel. Waar grond- en lugtemperature aanvaarbare vlakke vroeg in die seisoen bereik, word ‘n Oktober plantdatum, veral op die hoërliggende gebiede aanbeveel. Dit is belangrik om te onthou dat ‘n vroeër of ‘n later plantdatum in al die produksiegebiede kultivarkeuse kan beïnvloed.

Peul- en planthoogte beïnvloed die stroopbaarheid en die staanvermoë van sojabone en is faktore wat in ag geneem moet word by kultivarkeuse. Oor die algemeen is

representing the same region. Risk can be minimised if Tables 1 and 3 are utilised. It is generally accepted that cultivars with a longer growing season will perform better in the warmer growing areas, cultivars with a medium growing season in the moderate growing areas and cultivars with a shorter growing season in the cooler production areas. There are however exceptions to the rule and it is therefore recommended to also use yield performance and cultivar adaptation presented in Tables 4, 5, 6, 7, 8 and 9 in combination with length of growing season during cultivar selection for a specific area.

Planting date influences the adaptation of soybean cultivars and therefore also cultivar choice. The optimum planting date is usually during November. In warmer areas though, soybean can be planted until the first week of January. With later planting dates narrow rows, higher plant populations and shorter growing season cultivars are recommended. A planting date during October, especially in areas with a higher altitude, will be recommended where soil and air temperatures reach acceptable levels early in the growing season. Planting at an earlier or later planting date will affect cultivar choice.

Pod- and plant height have an impact on the ability to harvest the crop, and are characteristics that should be taken into account during deciding on what cultivar to plant. A relationship exists between pod- and plant height and relative length of the growing season. Cultivars with a shorter growing season tend to have lower plant- and pod

daar ‘n verband tussen peul- en planthoogte en relatiewe lengte van die groeiseisoen. Relatief kort groeiseisoenkultivars het gewoonlik ‘n laer peul- en planthoogte as langgroeiseisoenkultivars onder vergelykbare toestande. Beide eienskappe word egter ook deur produksiepraktyke beïnvloed. ‘n Nouer tussenry- en binnery spasiëring sal peulhoogte betekenisvol verhoog. In die Nasionale Kultivarproewe word by gestandardiseerde toestande vir peulhoogte geëvalueer en kan kultivars met aanvaarbare peulhoogtes gekies word. Peulhoogte word aangedui in Tabel 3.

Staanvermoë kan beïnvloed word deur die aantal bewolkte dae wat tydens die seisoen voorkom. Dit kan tot gevolg hê dat kultivars wat normaalweg goed staan, hoër groei en dus word die risiko van omval verhoog.

Groeiwyse onderskei tussen bepaalde en onbepaalde groeiers. Kultivars met ‘n bepaalde groeiwyse word verkieslik onder besproeiing geplant, terwyl kultivars met ‘n onbepaalde groeiwyse (wat nie lengtegroei tydens blom staak nie) onder droëlandtoestande verkies word. Die groeiwyse van die kultivars word in Tabel 3 aangedui.

Rywydte kan ook kultivarkeuse beïnvloed aangesien ‘n betekenisvolle interaksie tussen die twee bestaan. Kultivars wat geneig is tot sytakvorming en ‘n digte blaredak het, is beter aangepas in wye rye, terwyl kultivars met ‘n oop blaredak en min sytakke, beter aangepas is by relatief nouer rywydtes.

heights compared to longer growing season cultivars under similar growing conditions. Both characteristics are also influenced by production practices. More narrow inter- and intra row spacing will increase pod height significantly. Pod clearance for the cultivars evaluated is reported in Table 3.

Standability is influenced by the number of overcast days experienced during the growing season. Plant height tends to increase when overcast weather occurs and could result in a higher lodging percentage of plants.

Growth habit distinguishes between determinate and indeterminate genotypes. Cultivars with a determinate growth habit are preferably planted under irrigation, while indeterminate cultivars (that do not stop vertical growth during flowering) are preferred under dry land conditions. Growth habit for registered cultivars is indicated in Table 3.

Row width will also influences cultivar selection, since a signifycant relation exists between cultivars and row width. Cultivars with more side branches and leaves are better adapted to wider rows, while cultivars with less side branches and leaves are better adapted to more narrow rows.

Resistance against seed shattering can play an important role during unfavourable harvesting conditions. Information obtained during the National Soybean Cultivar Trials indicates that cultivars with a relative short growing period tend to shatter more than cultivars with a longer growing period.

Weerstand teen oopspring van peule kan ‘n belangrike rol speel tydens ongunstige toestande gedurende die oes van sojabone

Volgens inligting uit die Nasionale Kultivarproewe is dit duidelik dat relatief kort groeiseisoenkultivars die grootste risiko vir oopspring het**,** terwyl relatief lang groeiseisoenkultivars die minste daardeur geraak word. ‘n Aanduiding ten opsigte van genetiese weerstand tussen kultivars van dieselfde groeiseisoenlengte wat oopspring aanbetref, kon egter nie verkry word nie. Kultivars word geëvalueer op ‘n skaal van 1 (goed) tot 5 (swak) wat oopspring aanbetref en die resultate word in Tabel 3 aangebied.

Gevoeligheid vir onkruiddoder kan in sommige gevalle kultivarkeuse beïnvloed. Geen sojaboonkultivar is bestand teen die atrazine-tipe onkruiddoders nie en die volle wagperiode moet nagekom word voordat die plant van sojabone oorweeg word. In alle gevalle moet seker gemaak word dat aanwysings op die onkruiddoderetiket voorsiening maak vir die kultivar wat aangeplant gaan word.

Saadgrootte, hilumkleur, proteïengehalte en GMO-status is eienskappe waarop ‘n premieprys moontlik betaal kan word. Saadgrootte is geneties, maar word sterk beïnvloed deur omgewingstoestande. Gunstige toestande tydens die saadvulperiode sal saadgrootte positief beïnvloed.

Proteïeninhoud van die saad is ook geneties maar kan nadelig beïnvloed word deur omgewingstoestande (reënval, temperatuur en stremming) en bestuur (swak of

Rating of cultivars in terms of their susceptibility to shattering are done on a scale from 1 (good) to 5 (poor) and are presented in Table 3.

Sensitivity to herbicides can, in some cases, influence the choice of a cultivar. No soybean is resistant to the atrazine type herbicides and the full waiting period have to be maintained before the planting of soybean can be considered. Ensure, in any case, that the herbicide can be used with the selected cultivar as indicated on the herbicide label.

Seed size, hilum colour, protein qualities and GMO status are characteristics that can possibly earn a premium price. Seed size is genetically regulated, but is greatly influenced by the environment conditions. Favourable conditions during the seed filling period will positively influence seed size. The protein content of soybean seed is also genetically regulated and can be adversely affected by environmental conditions (rainfall, temperature, stress) and crops management (poor or no nodulating, acidic soil and low soil fertility). Protein contents of soybean seed below 36% are unsatisfactory, while that above 40%, on a moisture free basis, is regarded as excellent.

Seed yield indicates the genetic adaptation and suitability of a cultivar to be planted in a specific area. During the 2014/2015 season 29 cultivars were included in the National Soybean Cultivar Trials, while data of 19 localities were acceptable for statistical analyses. Yield of the cultivars at the different localities for the 2013/2014 and 2014/2015 growing season is presented in Tables 5, 7 and 9.

geen nodulering, suur grond en lae grondvrugbaarheid). Proteïeninhoud (vogvrye basis) onder 36% is onbevredigend en bokant 40% is uitstekend wat sojabone aanbetref.

Saadopbrengs gee ‘n aanduiding van ‘n kultivar se genetiese aanpassing en geskiktheid vir ‘n bepaalde gebied. Vir die 2014/2015 seisoen is 29 kultivars geplant en geëvalueer en was die data van 19 proewe aanvaarbaar vir statistiese analises. Tabelle 5, 7 en 9 bevat inligting aangaande die opbrengs van die kultivars vir die 2013/2014 en 2014/2015 produksieseisoen op die onderskeie lokaliteite. Gebruik die opbrengsdata saam met die opbrengswaarskylikheidstabelle om u kultivarkeuse te maak.

Kultivarbeplanning - ‘n Waardevolle hulpmiddel by kultivarbeplanning is die opbrengswaarskynlikheid waardes.

Die prosedure wat gevolg word vir die maak van kultivaraanbevelings is kortliks as volg: Eerstens moet vasgestel word vir watter opbrengspotensiaal aanbevelings gemaak word. Die produsent moet homself vergewis van die potensiaal wat ter sprake is. Die tweede stap is om die opbrengswaarskynlikheidstabel te raadpleeg by die vasgestelde potensiaal. Selekteer by die gekose potensiaal daardie kultivars met die bogemiddelde opbrengswaarskynlikheid. Die kultivars met die bogemiddelde waardes behoort vir u die beste kans op ‘n stabiele, suksesvolle opbrengs verseker.

Opbrengswaarskynlikheid
Die opbrengswaarskynlikheid van ‘n kultivar is die kans om ‘n bogemiddelde opbrengs by ‘n bepaalde

It is recommended to use the yield results with the yield probability values for a more accurate cultivar choice.

Cultivar planning - A valuable aid in cultivar planning is to also consider the yield probability values.

The procedure to be followed in the making of cultivar recommendations is briefly as follows: Determine for which yield potential recommendations must be made. This must be done by the producer (farmer). The next step is to consult the yield probability table at the determined yield potential. Select at the chosen yield potential those cultivars with the above average probability yield values. The cultivars with the above average values should provide one with the best chance for a stable, successful yield.

Yield probability
The yield probability of a cultivar is the chance to get an above average yield at a particular yield potential. For instance, if the yield probability of a cultivar, at a particular yield potential equals 60%, the chance to get a yield above the mean of all cultivars is 60% with a 40% chance of obtaining a yield below the mean.

Yield probability values of the 14 cultivars for the three production-areas (warm, moderate and cool) are presented in Tables 4 & 6 and 8. Tables 4, 6 and 8 contain information regarding cultivars included in the trials for three years. It is also important to use the information provided in Table 2 to determine whether the area to be planted corresponds with the warm,

opbrengspotensiaal te behaal. Indien die opbrengswaarskynlikheid van ‘n kultivar by ‘n bepaalde opbrengspotensiaal byvoorbeeld 60% is, dui dit op ‘n 60% kans om ‘n bogemiddelde opbrengs te behaal en ‘n 40% kans om ondergemiddeld te presteer.

Die opbrengswaarskynlikheid van die 14 kultivars vir die drie verbouingsgebiede (warm, matig en koud) word in Tabelle 4 & 6 en 8 aangebied. Tabelle 4, 6 en 8 bevat inligting oor kultivars wat vir onderskeidelik drie jaar in dié proewe ingesluit was. Dit is belangrik dat u die verdeling van lokaliteite in Tabel 2 gebruik om te bepaal in watter gebied u plaas geleë is. Vergelyk dan die kultivars in die opbrengswaarskynlikheid tabel wat u gekies het met mekaar by die realistiese opbrengsmikpunt vir u plaas.

Weens die jaarlikse toevoeging en onttrekking van kultivars, is ‘n meerjarige oesskerheidsevaluasie op slegs ’n beperkte aantal kultivars moontlik.

Tabelle 4, 6 & 8 kan gebruik word om ’n kern seleksie van kultivars te maak. Hierdie kern kan aangevul word met kultivars uit Tabelle 5,7 & 9. Dit is altyd raadsaam om meer as een kultivar te plant en om nuwe kultivars slegs op ’n beperkte skaal in te sluit

moderate or cool localities. Use the selected yield probability table (warm, moderate or cool) to select cultivars for the yield potential of the specific farm.

Since new cultivars are introduced and some removed annually, a multiseason reliability analysis is only possible for a limited number of cultivars.

Tables 4, 6 & 8 can be used to select a core of cultivars. This selection can be expanded with cultivars selected from Tables 5, 7 & 9. It is advisable to grow more than one cultivar and to include new cultivars on a limited scale only.

Tabel 1. Gemiddelde aantal dae tot 50% blom en oesrypheid van kultivars gedurende die 2014/15 groeiseisoen vir warm, matig en koue produksiegebiede.
Table 1. Average number of days to 50 % flowering and harvesting of cultivars during the 2014/15 growing season for warm, moderate and cool production areas.

Kultivar/ Cultivar	Dae tot 50% blom/Days to 50% flowering			Dae tot oes/Days to harvest		
	Warm/Warm[1]	Matig/Moderate[2]	Koel/Cool[3]	Warm/Warm[4]	Matig/Moderate[5]	Koel/Cool[6]
LS 6240 R	35	47	58	125	131	141
LS 6444 R	35	46	56	118	132	141
PAN 1454 R	35	48	58	126	132	144
LS 6146 R	35	46	56	127	132	141
PHB 94 Y 80 R	37	48	60	128	132	139
LS 6248 R	42	62	78	148	145	164
NS 5009 R	36	47	60	133	133	141
DM 5.1i RR	36	48	55	123	133	141
PHB 95 Y 20 R	44	63	82	150	152	171
PAN 1583 R	42	59	78	140	150	168
PAN 1664 R	42	59	76	145	148	166
DM 5953 RSF	36	49	61	128	132	145
LS 6453 R	44	59	76	131	145	154
PAN 1521 R	45	64	80	138	148	164
PAN 1500 R	46	65	80	151	152	168
NS 5909 R	48	63	80	157	153	172
PHB 96 T O6 R	44	64	81	143	153	170
LS 6466 R	46	64	78	150	148	172
PAN 1666 R	47	65	78	146	148	171
PAN 1623 R	47	64	79	146	148	168
LS 6261 R	43	60	78	140	147	163
DM 6.2i RR	48	62	79	154	153	170
LS 6164 R	45	62	78	145	150	171
LS 6161 R	45	63	80	140	151	167
PAN 1614 R	48	65	83	143	151	169
NS 6448 R	49	63	82	151	152	171
DM 6.8i RR	47	64	82	154	157	174
NS 7211 R	48	64	81	154	155	174
PAN 1729 R	50	69	87	154	157	174

[1] - Gemiddeld van 2 lokaliteite / average of 2 localities
[2] - Gemiddeld van 7 lokaliteite / average of 7 localities
[3] - Gemiddeld van 6 lokaliteit / average of 6 locality
[4] - Gemiddeld van 2 lokaliteite / average of 2 localities
[5] - Gemiddeld van 9 lokaliteite / average of 9 localities
[6] - Gemiddeld van 6 lokaliteite / average of 6 localities

Dae tot blom - Gemiddeld 50% van die plante het een blom/Days to flowering – Average of 50% of plants with one flower
Dae tot oes – Gemiddeld van alle peule is volwasse, bros en droog/Days to harvest – Average of pods is mature, brittle and dry

Tabel 2. Groepering van lokaliteite volgens warm, matige en koue produksiegebiede gedurende die 2014/15 groeiseisoen.
Table 2. Grouping of localities according to warm, moderate and cool production areas during the 2014/15 growing season.

Warm/Warm	Matig/Moderate	Koel/Cool
Atlanta (B/I) NW Brits (B/I) NW Groblersdal (B/I) L Koedoeskop (B/I) NW	Cedara (D) KZN Dundee (D) KZN Glen (B/I) FS Greytown (D) KZN Greytown Kranskop (D) KZN Hoopstad (D) FS Kroonstad (D) FS Migdol (D) NW Potchefstroom (B/I) NW Potchefstroom PD1 (D) NW Potchefstroom PD2 (D) NW Stoffberg (D) MP	Bethlehem (D) FS Clocolan (D) FS Delmas (D) MP Kinross (D) MP Kokstad (D) KZN Middelburg (D) MP

B – Besproeing / I - Irrigation D – Droëland / Dry land

Sleutel/Key:

NW – Noordwes/North West
L – Limpopo
MP – Mpumalanga
FS – Vrystaat/Free state
NC – Noord Kaap/North Cape
KZN – Kwazulu Natal

Tabel 3. Algemene inligting ten opsigte van geregistreerde sojaboonkultivars wat tydens die 2014/15 groeiseisoen geëvalueer is.
Table 3. General information on registered soybean cultivars that were evaluated during the 2014/15 growing season.

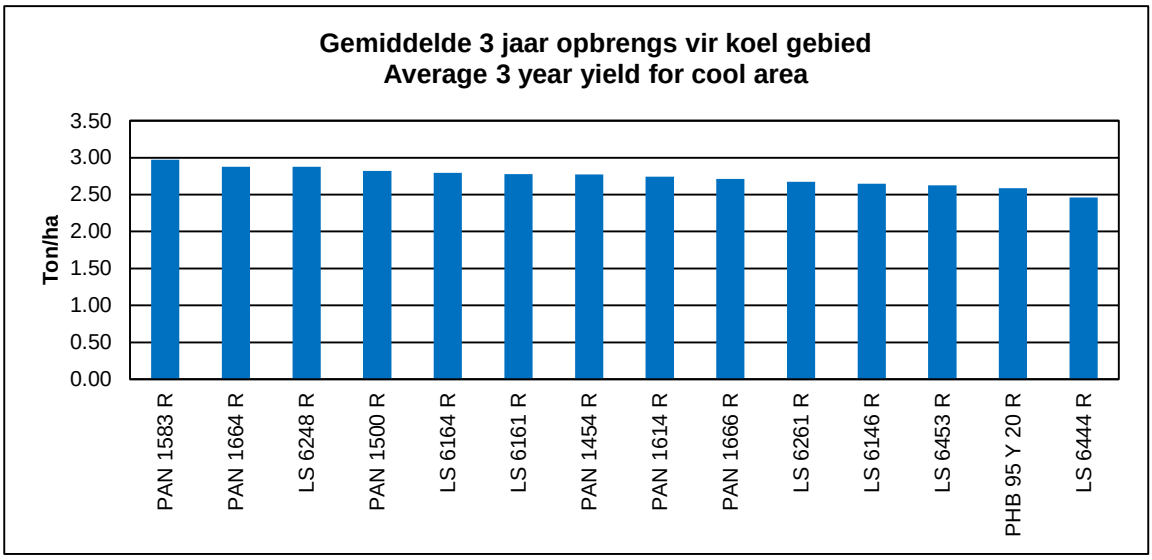
Kultivar/ Cultivar	Volwassen - heidsgroe - pering/Ma- turity Group	Groei - wyse/ Growth habit[1]	Hilum kleur/ Hilum colour[2]	Oliepersentasie/Oil percentage (%)			Proteïenpersentasie/ Protein percentage (%)			Peulhoogte/Pod height[3]			Oopspring/Shattering[4]			Verskaffer/ Supplier
				Koel	Matig	Warm	Koel	Matig	Warm	Koel	Matig	Warm	Koel	Matig	Warm	
LS 6240 R	4.0	SD	BL	20.41	20.75	21.88	38.84	38.71	40.90	9	8	5	2.00	3.87	1.00	Linkseed
LS 6444 R	4.0	SD	BL	21.05	21.56	23.17	36.87	36.85	38.37	6	6	6	3.50	4.33	2.00	Link Seed
PAN 1454 R	4.3	I	BL	20.69	21.31	22.61	37.53	37.36	40.25	10	9	7	2.25	4.40	1.00	Pannar
LS 6146 R	4.4	I	BL	21.63	21.66	23.54	36.08	36.69	38.18	9	8	5	1.50	3.80	1.00	Link Seed
PHB 94 Y 80 R	4.8	I	LB	19.98	21.06	22.00	39.12	38.10	41.53	8	7	6	2.50	4.33	1.00	Pioneer
LS 6248 R	4.8	SD	BL	19.69	20.78	21.82	37.71	37.63	41.01	11	11	7	2.25	4.33	1.00	Link Seed
NS 5009 R	5.0	I	B	20.26	20.35	21.33	37.01	38.21	41.77	8	7	6	2.00	4.00	1.00	K2
DM 5.1i RR	5.1	I	S	20.97	21.83	22.70	36.85	35.79	39.59	8	10	6	3.25	4.60	1.00	GDM Seeds
PHB 95 Y 20 R	5.2	D	BL	18.13	20.18	22.10	40.13	38.29	42.05	10	13	6	1.00	2.60	1.00	Pioneer
PAN 1583 R	5.0	D	LB	19.31	20.58	22.76	37.15	37.34	39.61	10	9	6	1.00	2.60	2.00	Pannar
PAN 1664 R	5.3	D	LB	19.49	20.51	21.32	36.71	37.05	39.95	9	9	6	1.00	3.40	1.00	Pannar
DM 5953 RSF	5.3	I	IB	20.76	21.24	21.28	36.66	36.85	40.35	8	8	5	1.50	3.80	1.00	GDM Seeds
LS 6453 R	5.0	SD	BL	19.68	20.83	21.43	38.58	38.16	40.36	9	10	7	2.50	3.80	2.00	Link Seed
PAN 1521 R	5.7	I	IB	19.45	20.53	21.38	38.25	37.95	39.25	10	12	8	1.50	1.40	1.00	Pannar
PAN 1500 R	5.8	I	IB	19.18	20.35	21.10	39.97	38.94	40.83	10	11	7	1.00	2.00	1.00	Pannar
NS 5909 R	5.9	I	IB	19.94	21.39	22.36	38.05	36.92	39.66	11	12	6	1.00	3.20	1.00	K2
PHB 96 T 06 R	6.0	I	KL	20.18	21.65	22.40	37.03	36.16	39.43	9	11	6	1.00	2.20	1.00	Pannar
LS 6466 R	6.0	D	B	19.57	20.48	21.23	38.60	38.39	40.41	9	13	8	2.00	4.27	1.00	Link Seed
PAN 1666 R	6.1	I	BL	19.86	20.60	21.57	38.46	38.10	39.81	10	11	7	2.00	2.80	1.00	Pannar
PAN 1623 R	6.1	I	KL	19.81	21.04	22.47	39.75	38.81	39.56	9	11	6	1.00	1.60	1.00	Pannar
LS 6261 R	6.0	SD	BL	19.51	20.58	21.55	39.19	38.35	39.86	7	10	8	3.00	4.07	2.00	Link Seed
DM 6.2i RR	6.2	I	LB	18.67	19.91	21.57	38.82	38.25	39.17	9	12	6	1.00	1.60	1.00	GDM Seeds
LS 6164 R	6.0	SD	LB	19.27	21.06	22.19	39.02	37.29	39.48	13	11	7	1.00	3.80	1.00	Link Seed
LS 6161 R	6.3	SD	IB	19.69	21.20	22.69	38.46	37.83	37.42	9	11	7	1.50	3.80	1.00	Link Seed
PAN 1614 R	6.2	I	B	19.75	20.74	22.71	38.23	37.85	37.16	12	13	9	1.00	2.07	1.00	Pannar
NS 6448 R	6.4	SD	LB	20.19	20.85	23.27	37.96	38.07	40.49	11	12	6	1.00	3.73	1.00	K2
DM 6.8i RR	6.8	I	B	18.95	20.04	21.84	37.50	37.04	38.34	12	12	6	1.00	2.40	1.00	GDM Seeds
NS 7211 R	7.2	D	LB	18.51	20.06	22.11	38.11	38.00	39.26	9	11	6	2.25	3.80	1.00	K2
PAN 1729 R	7.3	I	KL	19.58	20.86	21.50	37.25	36.89	40.54	12	12	7	1.00	1.80	1.00	Pannar

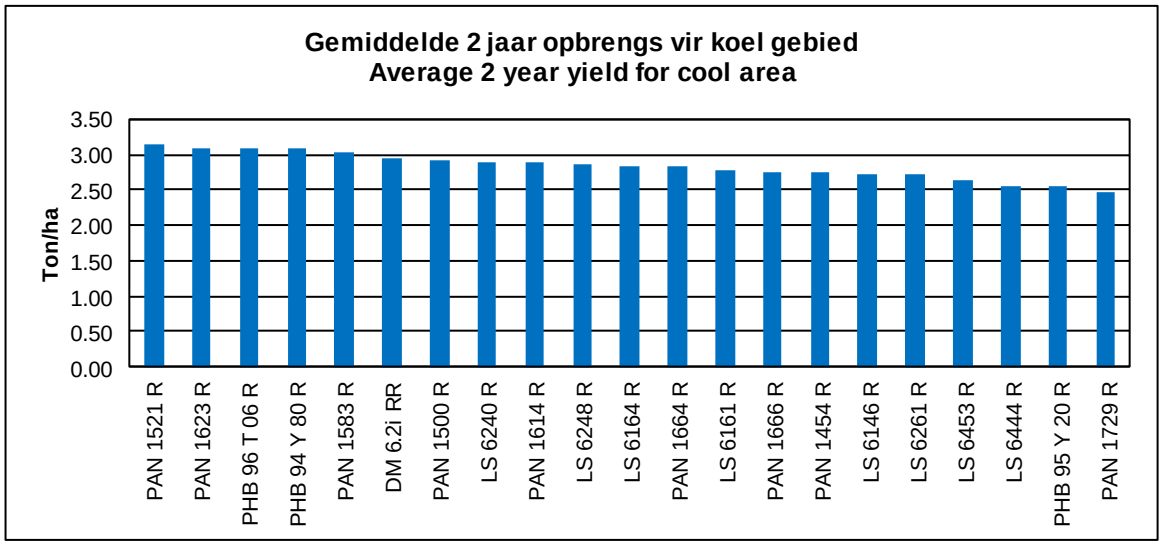
[1] D - Bepaald/Determinate
I - Onbepaald/Indeterminate
SD - Semi-Bepaald/Semi Deteminate

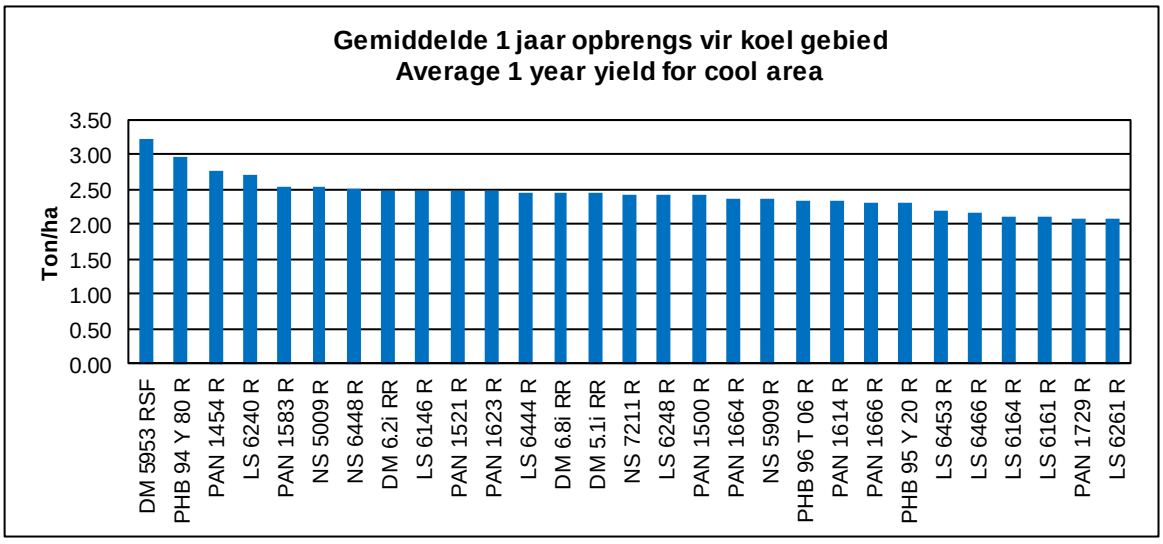
[2] BL - Swart/Black
IB - Onvolledig swart/Imperfect black
B - Bruin/Brown
LB - Ligbruin/Buff
G - Grys/Grey
KL - Kleurloos/Buff

[3] Peulhoogte in cm/Pod height in cm

[4] Geneigdheid tot oopspring geëvalueer op ‘n skaal van 1-5, waar 1 = min en 5 =baie
Tendency to shatter evaluated on a scale from 1-5, where 1 = few and 5 = numerous


Gemiddelde 3 jaar opbrengs vir koel gebied
Average 3 year yield for cool area
Ton/ha
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
PAN 1583 R
PAN 1664 R
LS 6248 R
PAN 1500 R
LS 6164 R
LS 6161 R
PAN 1454 R
PAN 1614 R
PAN 1666 R
LS 6261 R
LS 6146 R
LS 6453 R
PHB 95 Y 20 R
LS 6444 R


Gemiddelde 2 jaar opbrengs vir koel gebied
Average 2 year yield for cool area
Ton/ha
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
PAN 1521 R
PAN 1623 R
PHB 96 T 06 R
PHB 94 Y 80 R
PAN 1583 R
DM 6.2i RR
PAN 1500 R
LS 6240 R
PAN 1614 R
LS 6248 R
LS 6164 R
PAN 1664 R
LS 6161 R
PAN 1666 R
PAN 1454 R
LS 6146 R
LS 6261 R
LS 6453 R
LS 6444 R
PHB 95 Y 20 R
PAN 1729 R

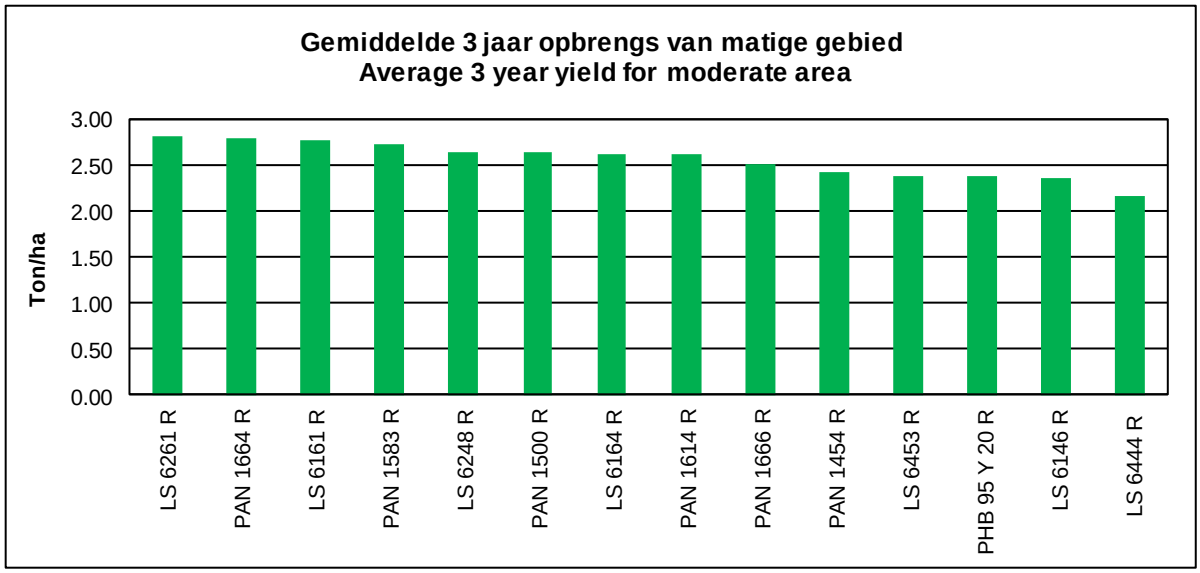

Gemiddelde 1 jaar opbrengs vir koel gebied
Average 1 year yield for cool area
Ton/ha
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
DM 5953 RSF
PHB 94 Y 80 R
PAN 1454 R
LS 6240 R
PAN 1583 R
NS 5009 R
NS 6448 R
DM 6.2i RR
LS 6146 R
PAN 1521 R
PAN 1623 R
LS 6444 R
DM 6.8i RR
DM 5.1i RR
NS 7211 R
LS 6248 R
PAN 1500 R
PAN 1664 R
NS 5909 R
PHB 96 T 06 R
PAN 1614 R
PAN 1666 R
PHB 95 Y 20 R
LS 6453 R
LS 6466 R
LS 6164 R
LS 6161 R
PAN 1729 R
LS 6261 R

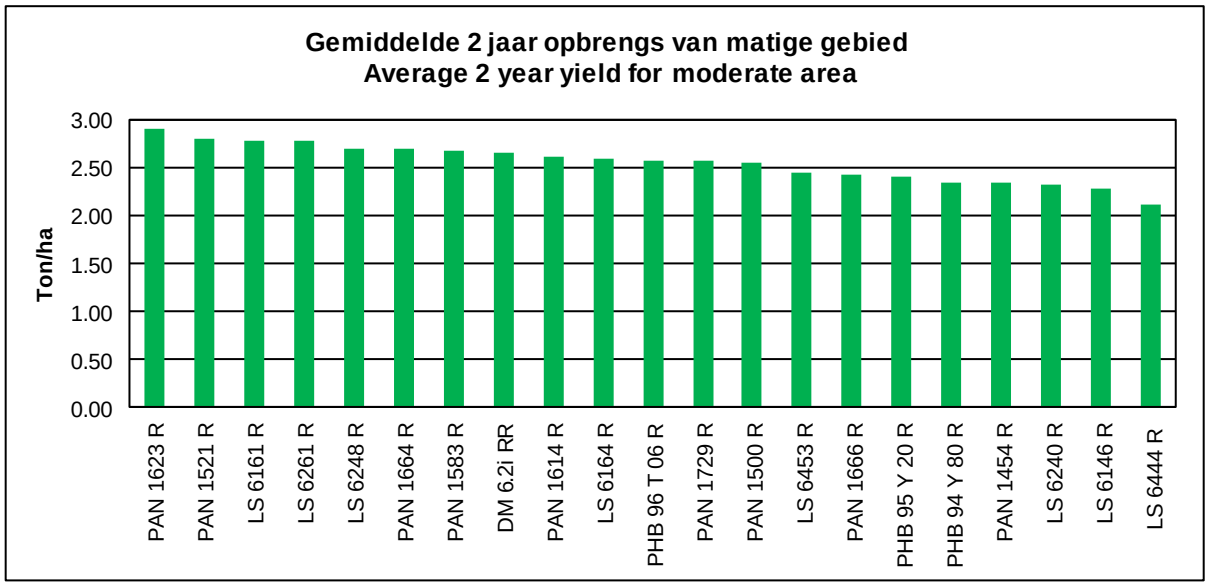
Tabel 4 Opbrengswaarskynlikheid (%) van kultivars geëvalueer in 2012/13, 2013/14 en 2014/15 vir die koeler produksiegebiede by verskillende opbrengspotensiaal.
Table 4 Yield probability (%) of cultivars evaluated in 2012/13, 2013/14 and 2014/15 for the cooler production areas at different yield potentials

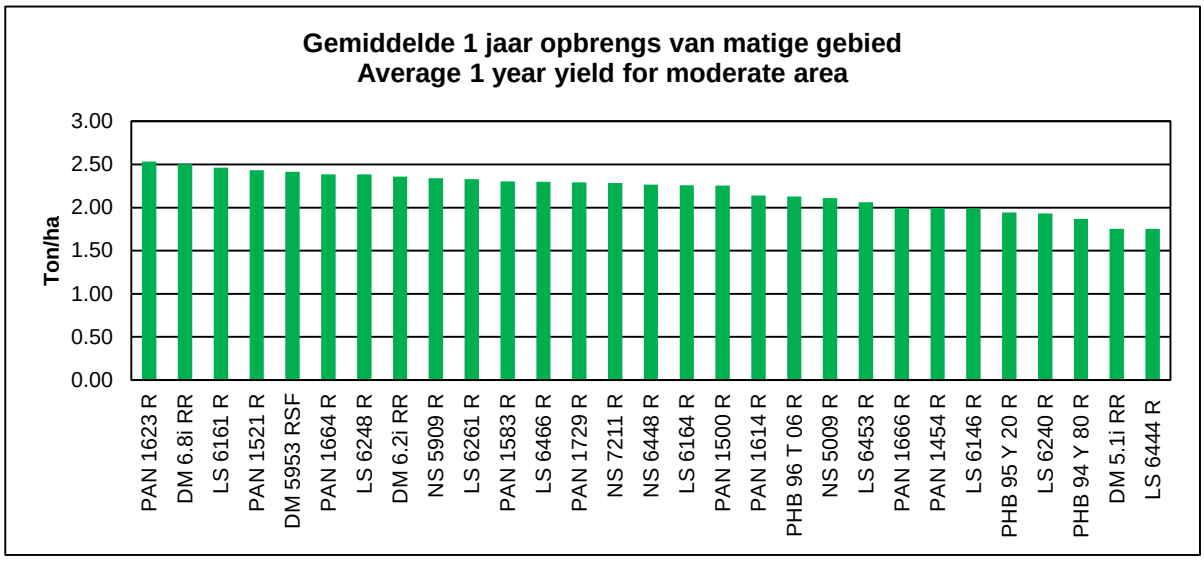
Kultivar	Opbrengspotensiaal/Yield potential (t/ha)							
Cultivar	1	1.5	2	2.5	3	3.5	4	4.5
LS 6444 R	77	69	59	47	35	25	18	13
PAN 1454 R	89	84	76	65	51	37	26	18
LS 6146 R	76	70	62	53	43	33	26	20
LS 6248 R	30	40	52	66	77	85	90	94
PAN 1583 R	23	34	49	65	78	88	93	96
PHB 95 Y 20 R	38	38	38	38	39	40	41	42
PAN 1666 R	43	44	45	47	48	50	52	53
PAN 1664 R	20	29	40	53	67	78	85	90
LS 6164 R	15	22	32	45	59	72	81	87
LS 6161 R	37	41	45	51	56	62	66	70
LS 6453 R	90	83	70	53	35	20	10	6
PAN 1500 R	11	20	31	48	65	80	88	94
LS 6261 R	37	39	40	43	44	47	49	51
PAN 1614 R	20	24	30	37	45	53	60	67

Tabel 5 Saadopbrengs (kg/ha^{-1}) van kultivars gedurende die 2013/14 en 2014/15 groeiseisoene ten opsigte van die verskillende lokaliteite wat in die koeler produksiegebiede geleë is
Table 5 Seed yield (kg/ha^{-1}) of cultivars during the 2013/14 and 2014/15 growing season for the various localities situated in the cooler production areas

	2013/14						2014/15						
Kultivar Cultivar	Bethlehem	Delmas	Kinross	Kokstad	Middelburg	Gem/Mean	Bethlehem	Clocolan	Delmas	Kinross	Kokstad	Middelburg	Gem/Mean
Sonop	3.7	3.3	4.0	2.9	2.7	3.3	-	-	-	-	-	-	-
LS 6444 R	3.7	3.1	1.9	3.1	1.4	2.7	2.4	0.9	3.9	1.6	2.6	3.3	2.5
PAN 1454 R	2.5	3.5	2.6	2.9	2.0	2.7	2.6	1.2	4.5	1.8	2.9	3.6	2.8
LS 6146 R	2.9	4.8	2.3	2.5	2.2	2.9	1.9	1.1	3.8	2.1	2.8	3.2	2.5
LS 6248 R	3.6	3.7	3.9	3.5	1.9	3.3	2.6	1.3	3.7	1.5	2.4	3.1	2.4
PAN 1583 R	4.0	3.4	4.0	3.1	3.1	3.5	2.6	1.4	4.8	1.4	2.4	2.7	2.5
Highveld Top	3.0	3.9	3.5	3.5	2.9	3.3	-	-	-	-	-	-	-
Knap	3.1	4.5	2.5	2.8	2.4	3.1	-	-	-	-	-	-	-
PHB 95 Y 20 R	1.9	3.9	3.1	2.6	2.5	2.8	2.6	1.1	3.9	1.2	2.4	2.6	2.3
PHB 95 Y 40 R	2.8	4.0	3.8	3.2	3.8	3.5	-	-	-	-	-	-	-
PAN 1666 R	3.4	2.6	3.3	3.5	3.0	3.2	2.4	1.2	4.3	1.3	2.4	2.2	2.3
PAN 1664 R	3.4	3.8	3.4	2.9	2.9	3.3	2.8	1.2	4.1	1.5	1.9	2.9	2.4
LS 6164 R	3.8	4.2	3.7	3.2	2.9	3.6	2.6	1.2	3.5	1.0	1.8	2.6	2.1
Dundee	2.1	4.1	2.8	2.8	2.6	2.9	-	-	-	-	-	-	-
Marula	2.7	4.1	2.4	2.9	2.9	3.0	-	-	-	-	-	-	-
LS 6161 R	3.4	4.2	3.8	3.3	2.6	3.5	2.3	1.3	3.4	1.0	1.7	2.9	2.1
Egret	2.2	4.3	2.7	1.9	2.8	2.8	-	-	-	-	-	-	-
Heron	2.7	4.4	2.4	2.6	2.7	2.9	-	-	-	-	-	-	-
Ibis 2000	2.0	3.8	2.4	2.5	2.6	2.6	-	-	-	-	-	-	-
LS 6453 R	3.3	2.5	3.8	3.1	2.6	3.1	2.6	1.5	2.6	1.6	2.0	2.9	2.2
PAN 1500 R	3.8	3.6	3.5	3.1	3.2	3.5	2.7	1.0	4.2	1.4	2.5	2.7	2.4
LS 6261 R	3.6	3.4	3.9	3.0	2.9	3.3	2.3	1.2	3.7	0.7	1.9	2.6	2.1
PAN 1614 R	3.8	4.9	3.5	1.8	3.3	3.5	2.8	1.1	4.2	1.1	2.6	2.2	2.3
LS 6240 R	3.2	5.1	1.6	2.8	2.7	3.1	2.2	1.2	4.8	2.1	3.0	3.1	2.7
PHB 94 Y 80 R	3.3	4.7	2.6	3.2	2.1	3.2	2.5	1.5	5.6	1.7	2.9	3.6	3.0
PAN 1521 R	3.7	5.0	4.3	3.1	2.8	3.8	3.0	1.1	4.0	1.8	2.1	2.8	2.5
PHB 96 T 06 R	3.5	5.5	3.8	3.2	3.2	3.8	2.6	1.3	3.7	0.9	2.6	2.9	2.3
S 722/6/1E	1.8	2.6	-	2.5	1.7	2.1	-	-	-	-	-	-	-
PAN 1623 R	3.6	4.7	3.9	3.5	3.1	3.7	2.6	1.4	3.6	1.6	2.9	2.7	2.5
DM 6.2i RR	3.0	4.8	3.5	3.0	2.8	3.4	2.6	1.8	3.9	1.3	2.7	2.7	2.5
PAN 1729 R	2.1	4.0	3.3	2.6	2.3	2.9	2.4	1.1	3.5	1.0	1.8	2.6	2.1
NS 5009 R	-	-	-	-	-	-	2.5	1.3	4.4	0.8	3.0	3.2	2.5
DM 5.1i RR	-	-	-	-	-	-	2.6	1.3	3.9	0.9	2.8	3.2	2.4
DM 5953 RSF	-	-	-	-	-	-	3.9	1.2	5.1	2.0	3.5	3.6	3.2
NS 5909 R	-	-	-	-	-	-	3.2	1.3	4.0	0.7	2.4	2.5	2.4
LS 6466 R	-	-	-	-	-	-	2.4	1.2	3.7	0.6	2.5	2.6	2.2
NS 6448 R	-	-	-	-	-	-	3.0	1.6	4.4	0.8	2.7	2.5	2.5
DM 6.8i RR	-	-	-	-	-	-	3.1	1.5	4.0	1.0	2.9	2.2	2.4
NS 7211 R	-	-	-	-	-	-	2.9	1.6	3.9	0.9	2.6	2.7	2.4
Gem/Mean	3.1	4.0	3.2	2.9	2.7	3.2	2.6	1.3	4.0	1.3	2.5	2.8	2.4


Gemiddelde 3 jaar opbrengs van matige gebied
Average 3 year yield for moderate area
Ton/ha
3.00
2.50
2.00
1.50
1.00
0.50
0.00
LS 6261 R
PAN 1664 R
LS 6161 R
PAN 1583 R
LS 6248 R
PAN 1500 R
LS 6164 R
PAN 1614 R
PAN 1666 R
PAN 1454 R
LS 6453 R
PHB 95 Y 20 R
LS 6146 R
LS 6444 R


Gemiddelde 2 jaar opbrengs van matige gebied
Average 2 year yield for moderate area
Ton/ha
3.00
2.50
2.00
1.50
1.00
0.50
0.00
PAN 1623 R
PAN 1521 R
LS 6161 R
LS 6261 R
LS 6248 R
PAN 1664 R
PAN 1583 R
DM 6.2i RR
PAN 1614 R
LS 6164 R
PHB 96 T 06 R
PAN 1729 R
PAN 1500 R
LS 6453 R
PAN 1666 R
PHB 95 Y 20 R
PHB 94 Y 80 R
PAN 1454 R
LS 6240 R
LS 6146 R
LS 6444 R

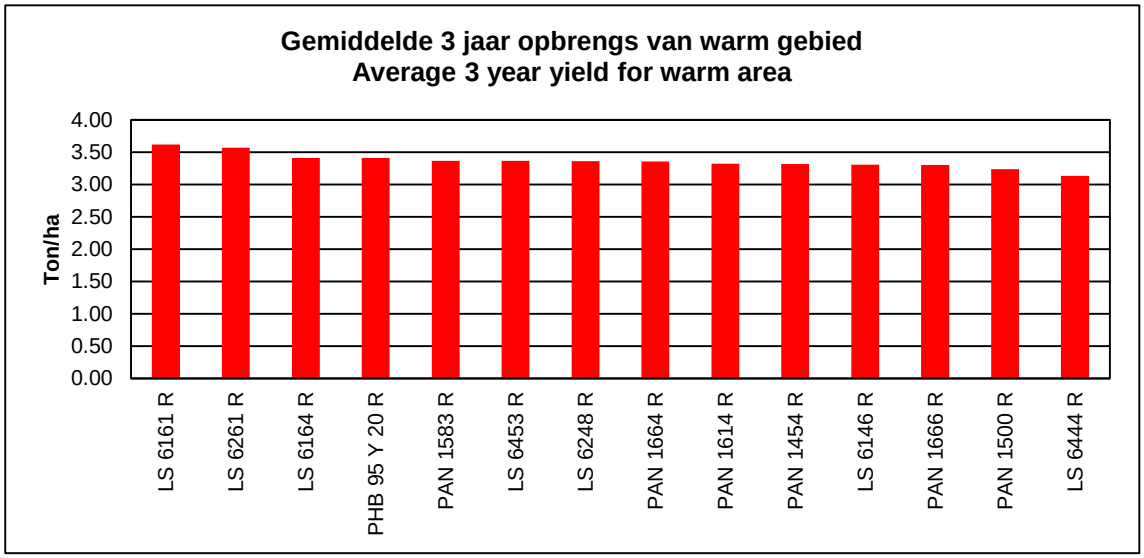

Gemiddelde 1 jaar opbrengs van matige gebied
Average 1 year yield for moderate area
Ton/ha
3.00
2.50
2.00
1.50
1.00
0.50
0.00
PAN 1623 R
DM 6.8i RR
LS 6161 R
PAN 1521 R
DM 5953 RSF
PAN 1664 R
LS 6248 R
DM 6.2i RR
NS 5909 R
LS 6261 R
PAN 1583 R
LS 6466 R
PAN 1729 R
NS 7211 R
NS 6448 R
LS 6164 R
PAN 1500 R
PAN 1614 R
PHB 96 T 06 R
NS 5009 R
LS 6453 R
PAN 1666 R
PAN 1454 R
LS 6146 R
PHB 95 Y 20 R
LS 6240 R
PHB 94 Y 80 R
DM 5.1i RR
LS 6444 R

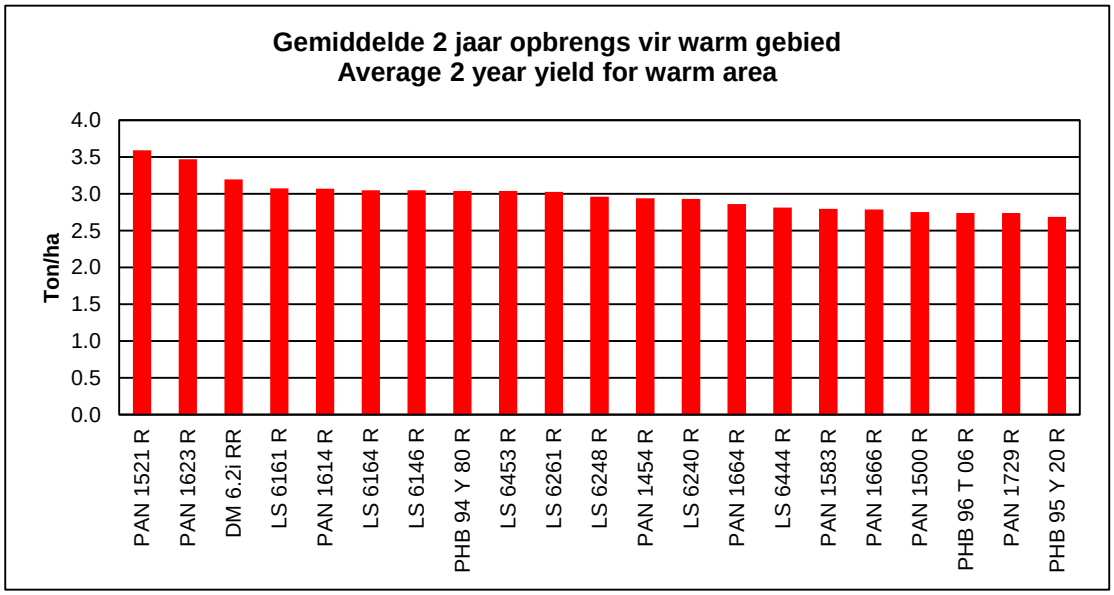
Tabel 6 Opbrengswaarskynlikheid (%) van kultivars geëvalueer in 2012/13, 2013/14 en 2014/15 vir die matige produksiegebiede by verskillende opbrengspotensiaal
Table 6 Yield probability (%) of cultivars evaluated in 2012/13, 2013/14 and 2014/15 for the moderate production areas at different yield potentials

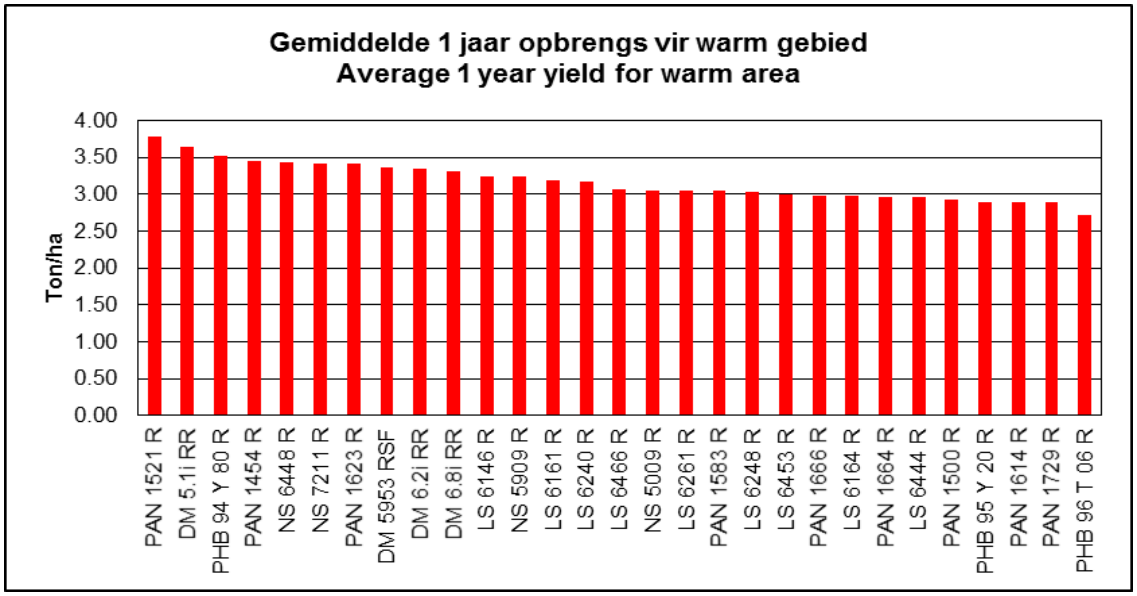
Kultivar Cultivar	Opbrengs potensiaal/Yield potential (t/ha)							
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
LS 6444 R	14	16	17	20	23	27	31	35
PAN 1454 R	24	29	35	41	48	54	60	65
LS 6146 R	40	35	31	27	24	21	19	18
LS 6248 R	64	61	58	55	51	48	45	42
PAN 1583 R	73	73	71	70	68	66	63	61
PHB 95 Y 20 R	68	57	46	34	24	17	12	8
PAN 1666 R	32	37	44	51	58	64	70	74
PAN 1664 R	50	57	64	71	77	81	84	87
LS 6164 R	80	74	66	57	46	38	30	24
LS 6161 R	71	74	77	79	80	81	81	82
LS 6453 R	45	40	34	29	25	22	19	18
PAN 1500 R	59	55	51	47	43	39	36	33
LS 6261 R	52	60	68	75	81	85	88	90
PAN 1614 R	61	62	63	64	64	65	64	64

Tabel 7 Saadopbrengs (kg/ha^{-1}) van kultivars gedurende die 2013/14 en 2014/15 groeiseisoen ten opsigte van die verskillende lokaliteite wat in die matige produksiegebiede geleë is
Table 7 Seed yield (kg/ha^{-1}) of cultivars during yhe 2013/14 and 2014/15 growing season for the various localities situated in the moderate production areas

	2013/14										2014/15									
Kultivar Cultivar	Cedara	Glen	Greytown	Greytown Kranskop	Hoopstad	Migdol	Potchefstroom Bespr	Potchefstroom Drg	Stoffberg	Gem/Mean	Cedara	Dundee	Glen	Greytown Kranskop	Kroonstad	Migdol	Potchefstroom Bespr	Potchefstroom PD1 Drg	Potchefstroom PD2 Drg	Gem/Mean
Sonop	4.1	4.3	3.0	2.1	3.4	3.4	3.5	1.8	2.5	3.1	-	-	-	-	-	-	-	-	-	-
LS 6444 R	4.0	4.7	2.0	2.0	2.4	2.1	2.3	1.2	1.4	2.5	2.6	1.3	3.1	2.1	1.6	1.4	1.8	0.9	0.9	1.8
PAN 1454 R	4.3	3.8	2.7	1.9	2.6	2.6	2.3	1.6	2.3	2.7	3.5	1.6	3.5	1.3	2.0	1.3	2.3	1.0	1.4	2.0
LS 6146 R	3.6	4.8	2.1	2.3	3.0	2.2	2.0	1.6	1.6	2.6	3.4	1.7	3.2	2.2	1.7	1.1	1.8	0.8	1.9	2.0
LS 6248 R	4.3	4.2	2.5	2.5	2.5	3.4	3.7	2.0	2.0	3.0	3.9	1.9	3.4	2.8	2.3	1.3	2.6	1.3	2.0	2.4
PAN 1583 R	4.3	4.3	2.7	2.4	2.4	2.9	3.1	2.1	3.1	3.0	3.0	1.6	3.6	2.4	2.2	1.2	2.6	1.4	2.6	2.3
Highveld Top	4.7	4.5	2.6	2.0	2.7	3.7	3.5	2.2	2.2	3.1	-	-	-	-	-	-	-	-	-	-
Knap	4.5	4.6	2.7	1.9	3.1	3.5	2.9	1.5	2.6	3.0	-	-	-	-	-	-	-	-	-	-
PHB 95 Y 20 R	3.9	4.1	3.1	2.1	2.5	2.1	3.3	2.2	2.6	2.9	2.9	1.4	2.6	2.1	1.7	1.6	1.8	1.4	2.1	1.9
PHB 95 Y 40 R	4.3	3.6	2.7	1.9	2.6	3.1	3.3	1.8	3.0	2.9	-	-	-	-	-	-	-	-	-	-
PAN 1666 R	3.8	3.3	3.3	1.8	2.3	3.0	3.7	1.9	2.7	2.9	3.2	1.1	3.0	2.1	2.1	1.1	2.3	1.1	1.9	2.0
PAN 1664 R	4.6	3.9	2.6	2.2	2.4	2.3	4.7	1.8	2.6	3.0	3.1	1.6	3.6	2.5	2.1	1.1	3.7	1.2	2.4	2.4
LS 6164 R	4.0	3.2	3.1	2.5	2.2	2.8	4.3	1.8	2.6	2.9	3.8	1.7	2.5	2.4	1.9	1.2	2.8	1.6	2.4	2.3
Dundee	4.2	4.3	2.9	1.7	3.1	3.8	3.9	2.1	2.6	3.2	-	-	-	-	-	-	-	-	-	-
Marula	4.3	4.4	3.3	2.4	3.3	3.6	3.3	2.1	2.6	3.2	-	-	-	-	-	-	-	-	-	-
LS 6161 R	4.4	3.2	3.2	2.5	2.3	3.2	4.1	2.6	2.5	3.1	4.2	1.4	3.3	2.6	2.4	1.6	2.5	1.9	2.4	2.5
Egret	3.6	3.3	2.9	2.1	1.9	2.2	4.0	1.6	3.2	2.8	-	-	-	-	-	-	-	-	-	-
Heron	4.6	3.9	3.4	2.3	1.9	2.5	3.5	1.9	2.5	2.9	-	-	-	-	-	-	-	-	-	-
Ibis 2000	3.7	3.1	2.9	1.1	2.4	3.1	3.9	2.2	2.7	2.8	-	-	-	-	-	-	-	-	-	-
LS 6453 R	3.8	4.3	2.7	2.4	2.7	3.2	2.9	1.4	2.0	2.8	3.7	1.4	2.8	2.2	2.3	1.4	2.0	1.0	1.6	2.1
PAN 1500 R	3.8	4.1	2.5	1.2	2.8	3.3	3.1	2.0	2.8	2.8	3.5	1.4	3.3	2.1	1.9	1.5	2.8	1.5	2.3	2.3
LS 6261 R	4.5	5.2	2.5	2.4	3.1	3.4	3.8	1.6	2.4	3.2	3.6	1.7	3.3	2.7	2.9	1.4	2.4	1.2	1.7	2.3
PAN 1614 R	4.1	4.0	3.1	2.3	3.7	3.2	3.0	1.8	2.5	3.1	3.3	1.5	2.8	2.1	2.4	1.3	2.1	1.6	2.2	2.1
LS 6240 R	4.4	4.1	2.1	2.1	4.1	2.3	2.4	1.8	1.3	2.7	2.9	1.8	3.8	2.1	1.8	1.0	1.6	1.0	1.4	1.9
PHB 94 Y 80 R	3.9	4.8	2.0	1.7	3.6	2.3	3.9	1.3	1.7	2.8	3.7	1.3	3.3	1.2	1.7	1.4	2.1	1.0	1.1	1.9
PAN 1521 R	4.1	3.7	2.7	2.3	2.6	3.5	4.5	2.0	3.1	3.2	4.4	1.7	3.5	2.6	2.2	1.4	2.2	1.4	2.4	2.4
PHB 96 T 06 R	4.1	2.9	3.2	2.5	2.7	3.1	4.0	2.2	2.6	3.0	2.8	1.3	2.9	2.2	2.0	1.3	2.3	1.7	2.7	2.1
S 722/6/1E	4.4	3.2	2.8	1.6	2.4	3.8	2.4	1.4	2.4	2.7	-	-	-	-	-	-	-	-	-	-
PAN 1623 R	4.3	4.4	3.1	2.4	3.2	3.6	3.6	1.8	2.8	3.3	3.7	1.7	3.6	2.7	2.5	1.8	2.7	1.6	2.4	2.5
DM 6.2i RR	4.7	3.0	2.8	1.9	2.8	3.2	3.7	1.7	2.6	2.9	3.6	1.9	3.4	2.3	2.5	1.6	2.5	1.3	2.1	2.4
PAN 1729 R	4.2	3.7	3.1	2.5	1.8	2.8	3.1	1.8	2.5	2.8	3.7	1.6	2.5	2.1	1.7	1.6	3.1	2.0	2.2	2.3
NS 5009 R	-	-	-	-	-	-	-	-	-	-	3.7	2.0	4.0	1.3	2.0	1.3	2.0	1.0	1.6	2.1
DM 5.1i RR	-	-	-	-	-	-	-	-	-	-	2.3	1.4	3.2	1.1	1.9	1.3	2.3	0.9	1.3	1.8
DM 5953 RSF	-	-	-	-	-	-	-	-	-	-	4.0	1.7	4.9	1.6	2.1	1.7	2.9	1.2	1.6	2.4
NS 5909 R	-	-	-	-	-	-	-	-	-	-	3.0	1.4	3.5	1.8	1.9	1.3	3.6	1.9	2.6	2.3
LS 6466 R	-	-	-	-	-	-	-	-	-	-	4.1	1.2	3.2	2.4	2.5	1.4	2.1	1.4	2.3	2.3
NS 6448 R	-	-	-	-	-	-	-	-	-	-	3.0	1.5	2.9	2.4	2.0	1.5	2.8	1.4	2.9	2.3
DM 6.8i RR	-	-	-	-	-	-	-	-	-	-	4.1	1.0	3.4	2.5	2.8	1.5	3.1	2.1	1.9	2.5
NS 7211 R	-	-	-	-	-	-	-	-	-	-	3.4	1.2	3.3	2.2	2.4	1.2	2.7	1.9	2.1	2.3
Gem/Mean	4.2	4.0	2.8	2.1	2.7	3.0	3.4	1.8	2.4	2.9	3.5	1.5	3.3	2.2	2.1	1.4	2.5	1.4	2.0	2.2


Gemiddelde 3 jaar opbrengs van warm gebied
Average 3 year yield for warm area
Ton/ha
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
LS 6161 R
LS 6261 R
LS 6164 R
PHB 95 Y 20 R
PAN 1583 R
LS 6453 R
LS 6248 R
PAN 1664 R
PAN 1614 R
PAN 1454 R
LS 6146 R
PAN 1666 R
PAN 1500 R
LS 6444 R


Gemiddelde 2 jaar opbrengs vir warm gebied
Average 2 year yield for warm area
Ton/ha
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
PAN 1521 R
PAN 1623 R
DM 6.2i RR
LS 6161 R
PAN 1614 R
LS 6164 R
LS 6146 R
PHB 94 Y 80 R
LS 6453 R
LS 6261 R
LS 6248 R
PAN 1454 R
LS 6240 R
PAN 1664 R
LS 6444 R
PAN 1583 R
PAN 1666 R
PAN 1500 R
PHB 96 T 06 R
PAN 1729 R
PHB 95 Y 20 R


Gemiddelde 1 jaar opbrengs vir warm gebied
Average 1 year yield for warm area
Ton/ha
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
PAN 1521 R
DM 5.1i RR
PHB 94 Y 80 R
PAN 1454 R
NS 6448 R
NS 7211 R
PAN 1623 R
DM 5953 RSF
DM 6.2i RR
DM 6.8i RR
LS 6146 R
NS 5909 R
LS 6161 R
LS 6240 R
LS 6466 R
NS 5009 R
LS 6261 R
PAN 1583 R
LS 6248 R
LS 6453 R
PAN 1666 R
LS 6164 R
PAN 1664 R
LS 6444 R
PAN 1500 R
PHB 95 Y 20 R
PAN 1614 R
PAN 1729 R
PHB 96 T 06 R

Tabel 8 Opbrengswaarskynlikheid (%) van kultivars geëvalueer in 2012/13, 2013/14 en 2014/15 vir die warm produksiegebiede by verskillende opbrengspotensiaal
Table 8 Yield probability (%) of cultivars evaluated in 2012/13, 2013/14 and 2014/15 for the warm production areas at different yield potentials

Kultivar Cultivar	Opbrengs potensiaal (t/ha)/Yield potential (t/ha)							
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
LS 6444 R	21	21	21	22	23	25	27	30
PAN 1454 R	37	38	39	41	42	44	46	48
LS 6146 R	38	37	35	35	34	34	34	34
LS 6248 R	62	59	55	51	47	42	39	35
PAN 1583 R	53	54	54	55	55	56	56	57
PHB 95 Y 20 R	29	34	40	48	56	64	70	76
PAN 1666 R	61	58	54	51	47	43	39	37
PAN 1664 R	59	59	59	59	58	58	57	57
LS 6164 R	65	64	62	60	58	56	53	51
LS 6161 R	80	80	79	78	77	75	72	70
LS 6453 R	51	50	48	47	46	45	43	43
PAN 1500 R	68	60	48	37	25	18	11	8
LS 6261 R	38	44	51	59	66	73	78	82
PAN 1614 R	62	60	58	56	54	51	48	46

Tabel 9 Saadopbrengs (kg/ha^{-1}) van kultivars gedurende die 2013/14 en 2014/15 groeiseisoen ten opsigte van die verskillende lokaliteite wat in die warm produksiegebiede geleë is
Table 9 Seed yield (kg/ha^{-1}) of cultivars during yhe 2013/14 and 2014/15 growing season for the various localities situated in the warm production areas

	2013/14			2014/15			
Kultivar Cultivar	Brits	Groblersdal	Gem/Mean	Atlanta	Brits	Groblersdal	Gem/Mean
Sonop	2.8	2.5	2.7	-	-	-	-
LS 6444 R	2.7	2.5	2.6	4.2	2.7	2.1	2.1
PAN 1454 R	2.6	1.8	2.2	4.4	3.7	2.2	2.2
LS 6146 R	2.8	2.8	2.8	4.9	2.7	2.2	2.2
LS 6248 R	3.4	2.3	2.9	4.6	2.2	2.2	2.2
PAN 1583 R	2.5	2.4	2.4	4.3	3.0	1.9	1.9
Highveld Top	2.7	2.2	2.4	-	-	-	-
Knap	3.4	2.6	3.0	-	-	-	-
PHB 95 Y 20 R	3.0	1.8	2.4	4.2	2.6	1.9	1.9
PHB 95 Y 40 R	3.3	2.7	3.0				0.0
PAN 1666 R	2.8	2.2	2.5	4.4	2.9	1.6	1.6
PAN 1664 R	2.8	2.6	2.7	4.0	3.0	1.9	1.9
LS 6164 R	3.0	3.3	3.2	4.1	2.6	2.2	2.2
Dundee	2.9	2.7	2.8	-	-	-	-
Marula	2.7	2.5	2.6	-	-	-	-
LS 6161 R	3.2	2.6	2.9	4.0	3.4	2.2	2.2
Egret	3.1	3.4	3.2	-	-	-	-
Heron	1.9	2.8	2.3	-	-	-	-
Ibis 2000	2.6	2.8	2.7	-	-	-	-
LS 6453 R	3.6	2.5	3.1	4.3	2.8	1.9	1.9
PAN 1500 R	2.7	2.3	2.5	4.2	2.7	1.9	1.9
LS 6261 R	3.6	2.4	3.0	4.6	2.8	1.7	1.7
PAN 1614 R	3.4	3.3	3.3	4.2	2.8	1.7	1.7
LS 6240 R	2.8	2.3	2.6	4.3	3.2	2.0	2.0
PHB 94 Y 80 R	2.4	2.3	2.3	4.4	3.9	2.2	2.2
PAN 1521 R	3.9	2.7	3.3	4.6	4.3	2.4	2.4
PHB 96 T 06 R	3.4	2.1	2.8	4.2	2.3	1.7	1.7
S 722/6/1E	2.4	1.8	2.1	-	-	-	-
PAN 1623 R	3.6	3.5	3.6	4.7	3.2	2.3	2.3
DM 6.2i RR	3.6	2.3	3.0	4.5	3.0	2.5	2.5
PAN 1729 R	2.9	2.1	2.5	3.5	3.1	2.0	2.0
NS 5009 R	-	-	-	4.6	2.7	1.8	1.8
DM 5.1i RR	-	-	-	4.8	3.2	2.9	2.9
DM 5953 RSF	-	-	-	4.4	3.2	2.6	2.6
NS 5909 R	-	-	-	4.7	2.7	2.3	2.3
LS 6466 R	-	-	-	3.9	3.1	2.2	2.2
NS 6448 R	-	-	-	-	3.1	2.7	2.7
DM 6.8i RR	-	-	-	4.3	3.3	2.3	2.3
NS 7211 R	-	-	-	4.2	3.5	2.5	2.5
Gem/Mean	3.0	2.5	2.7	4.3	3.0	2.1	3.2

Current variety list: (to be published in June 2015)

Conventional:

Amstel No. 1 (305)	* LS 678 (484)	* S 722/6/1E (1137)
Dumela (305)	Marula (150)	* SC Sorcerer (1526)
* Dundee (254-3)	Mopanie (489)	SC Stanza (1526)
* Egret (254-3)	Mukwa (489)	Sonop (150)
* Heron (254-3)	* NED 11-91 (65)	* Stork (254-3)
* Ibis 2000 (254-3)	* Nqutu (254-3)	Tambotie (489)
* Jimmy (254-3)	NSO-15 (1637)	VegSoyBrBr082 (1574)
Kiaat (489)	Octa (1412)	VegSoyYeCo069 (1574)
Knap (150)	PAN 1595 (1412)	VegSoyYGPa077 (1574)
* LS 555 (484)	* PAN 1800 (1412)	VegSoyYGPa083 (1574)
* LS 677 (484)	* PAN 1867 (1412)	Wenner (369)

GMO:

* 5953 RSF (1708)	* LS 6150 R (484)	* PAN 1583 R (1412)	# RA660 (1670)
* 6.15 F (1573)	* LS 6161 R (484)	PAN 1614 R (1412)	# RJS 45002 (411)
--- Y 615F	* LS 6162 R (484)	PAN 1616 R (1412)	# RJS 46003 (411)
# 95Y61 (411)	* LS 6164 R (484)	* PAN 1623 R (1708)	# RJS 49006 (411)
# 95Y80 (411)	* LS 6240 R (484)	* PAN 1664 R (1412)	# RJS 49012 (411)
* A 5409 RG (80)	* LS 6248 R (484)	* PAN 1666 R (1412)	# RJS 50001 (411)
* AGC 4134A4R (1076)	* LS 6256(2) R (484)	* PAN 1729 R (1412)	# RJS 53001 (411)
* AGC 5028A4R (1076)	* LS 6261 R (484)	* PHB 94Y80 R (411)	# RJS 57002 (411)
* AGC 5028B4R (1076)	* LS 6444 R (484)	* PHB 95B53 R (411)	# RJS 59001 (411)
* AGC 5028C4R (1076)	* LS 6452 R (484)	* PHB 95Y01 R (411)	* RM 5500 (1573)
* AGC 58007 R (1076)	* LS 6453 R (484)	* PHB 95Y20 R (411)	--- Y 550
* AGC 64107 R (1076)	* LS 6466 R (484)	* PHB 95Y40 R (411)	RM 6001 (1573)
* AS 4801 R (1076)	NS 6448 (1421)	* PHB 95Y41 R (411)	# RM 5700 (1573)
* Don Mario 4670 (1708)	NS 7211 (1421)	PHB 96T06 R (1412)	# SRM 5200 (1573)
* Don Mario 5.1i (1708)	NS 8004 (1421)	# RA437 (1670)	# SSS 4945 (tuc) (24)
* Don Mario 6.2i (1708)	NS 8009 RG (1421)	RA516 (1670)	# SSS 5052 (tuc) (24)
* Don Mario 6.8i (1708)	NS 5009 RG (1421)	RA518 (1670)	# SSS 5449 (tuc) (24)
* FN 5.25 (1573)	NS 5909 RG (1421)	# RA556 (1670)	# SSS 5755 (tuc) (24)
--- Y 525F	PAN 535 RR (1412)	# RA560 (1670)	# SSS 6560 (tuc) (24)
* FN 5.75 (1573)	* PAN 737 RR (1412)	# RA563 (1670)	Y 605 (1573)
--- Y575F	* PAN 1454 R (1412)	#RA 565 (1670)	
* LS 6050 R (484)	* PAN 1500 R (1412)	# RA568 (1670)	
* LS 6146 R (484)	* PAN 1521 R (1708)	RA626 (1670)	

= PBR pending * = PBR granted

Address list:

24 Sensako
65 Adams & Adams
80 Monsanto
150 Buhrman, G.
254-3 ARC GCI
305 Vreken, H.
369 Borman, G.J.J.
411 Pioneer Hi-Bred RSA
484 Link Seed
489 New Crop
1076 Agriocare
1137 Seed-Co (Pty) Ltd.
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1421 Klein Karoo Seed Marketing Ltd
1526 Seed Co SA (Pty) Ltd
1573 Southern Hemisphere Seeds
1574 Newlands Mashu
1637 One Direction Solutions
1670 Van Staden Derick
1708 GDM Seeds SA (Pty) Ltd

VERDERE INLIGTING

Volledige inligting oor die Nasionale Sojaboon Kultivarproewe en ‘n nuttige bron van inligting oor sojaboonproduksie nl “Sojaboon produksiehandleiding” is beskikbaar by:

LNR-Instituut vir Graangewasse
Privaatsak X1251
Chris Hani Straat 114
Potchefstroom
2520
Tel.: (018) 299 6100
Faks: (018) 294 7146

*** Kultivars wat in die verslag opgeneem is, is die enigste kultivars wat deur die LNR getoets en aanbeveel word.**

FURTHER INFORMATION

Information on the National Soybean Cultivar Trials and an useful guide, namely “Soybean Production Manual” are available at:

ARC-Grain Crops Institute
Private Bag X1251
Chris Hani Street 114
Potchefstroom
2520

Tel.: (018) 299 6100
Fax: (018) 294 7146

*** Cultivars that are discussed in this report are the only cultivars evaluated and recommended by the ARC.**

ERKENNING

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