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SOJABOON KULTIVARAANBEVELINGS SOYBEAN CULTIVAR RECOMMENDATIONS

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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 meer akkurate oessekerheidswaarde 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

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 optimal yield reliability 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

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 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 droogte ontwyking 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 die gebied te identifiseer wat dieselfde klimaatstoestand 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

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 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 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.

en aanpassingsvermoë van kultivars soos aangedui in Tabelle 4, 5, 6, 7, 8 en 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 lugtemperatuur 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 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 gestandaardiseerde 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

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 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 influence cultivar selection, since a significant 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

aangepas in wye rye, terwyl kultivars met 'n oop blaredak en min sytakke, beter aangepas is by relatief nouer rywydtes.

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 kortgroeiseisoenkultivars 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 onkruidodder kan in sommige gevalle kultivarkeuse beïnvloed. Geen sojaboonkultivar is bestand teen die atrazinetipe onkruidodders 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 onkruidodder-etiket 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 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 2013/2014 seisoen is 31 kultivars geplant en geëvalueer en was die data van 19 proewe aanvaarbaar vir statistiese analyses. Tabelle 5, 7 en 9 bevat inligting aangaande die opbrengs van die kultivars vir die 2012/2013 en 2013/2014 produksieseisoen op die onderskeie lokaliteite. Gebruik die opbrengsdata saam met die oessekerheidstabelle om u kultivarkeuse te maak.

tend to shatter more than cultivars with a longer growing period.

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 2013/2014 season 31 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 2012/2013 and 2013/2014 growing season is presented in Tables 5, 7 and 9.

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

Yield reliability values of the 19 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 and two years respectively. It is also important to use the information provided in Table 2 to determine whether the area to be planted corresponds with the warm, moderate or cool localities. Use the selected yield reliability table (warm, moderate or

Die **oessekerheidswaardes** van die 15 kultivars vir die drie verbouingsgebiede (warm, matig en koud) word in Tabele 4 & 6 en 8 aangebied. Tabele 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 oessekerheidstabel wat u gekies het met mekaar by die realistiese opbrengsmikpunt vir u plaas.

Kultivarbeplanning - 'n Waardevolle hulpmiddel by kultivarbeplanning is die oessekerheidswaardes, wat 'n afleiding is van inligting wat deur die regressiegrafiek van 'n kultivar uitgebeeld word. Hierdie oessekerheidswaardes word verkry van die onderste betroubaarheidsband van die regressiegrafiek by 'n 90% waarskynlikheidsspeil. Dit beteken dat die oessekerheidswaarde van 'n kultivar by 'n sekere potensiaal die minimum opbrengs is wat daardie kultivar in nege uit tien gevalle kan behaal. By die berekening van oessekerheidswaardes (opbrengste) word die opbrengsgeneigdheid, gemiddelde opbrengs en stabiliteit in ag geneem.

In die oessekerheidstabelle word die volgende inligting verskaf: Eerstens word die oessekerheidswaardes by verskillende potensiaaltoestande aangetoon. Tweedens volg die gemiddelde opbrengs van die kultivar vir die stel proewe wat gebruik is. Laastens volg die opbrengstabiliteit wat deur die D^2 -waarde aangedui word. Hoe meer die D^2 -waarde neig na nul, hoe meer stabiel en voorspelbaar is die kultivar in terme van opbrengs, en hoe groter die D^2 -waarde is hoe meer sal opbrengs tussen seisoene wissel.

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 oessekerheidstabel te raadpleeg by die vasgestelde potensiaal. Selekteer by die gekose potensiaal daardie kultivars met die hoogste oessekerheidswaardes. Die kultivars met die hoogste waardes behoort vir u die beste kans op 'n stabiele, suksesvolle opbrengs te verseker. Indien verdere verfyning in die keuse nodig is, kan die stabiliteit (D^2) gebruik word.

cool) to select cultivars for the yield potential of the specific farm.

Cultivar planning - A valuable aid in cultivar planning is the yield reliability values, which are the deviations from the regression graph of a cultivar. The yield reliability values are obtained from the lower reliability band of the regression graph at a 90% probability level. This means that the yield reliability value of a particular cultivar at a given potential is the minimum yield, which can be obtained in nine out of ten seasons. In the calculation of yield reliability values (yield) the yield tendency, average yield and stability are taken into consideration.

In the yield reliability tables the following information is presented: Firstly, the yield reliability values at different yield potential levels are shown. Secondly, the average yield of the cultivar for the set of trials used is presented. Lastly, the yield stability is indicated by the D^2 -values.

With D^2 -values approaching zero, the cultivar can be expected to be more stable and predictable in terms of yield achievement, and the greater the D^2 -values are, the more the yield would vary between seasons.

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 reliability table at the determined yield potential. Select at the chosen yield potential those cultivars with the highest yield reliability values. The cultivars with the highest values should provide one with the best chance for a stable, successful yield.

Tabel 1: Gemiddelde aantal dae tot 50% blom en oesrypheid van kultivars gedurende die 2013/14 groeiseisoen vir warm, matig en koue produksiegebiede.

Table 1: Average number of days to 50 % flowering and harvesting of cultivars during the 2013/14 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
Sonop	43	62	76	131	157	170
LS 6240 R	34	48	53	125	136	147
LS 6444 R	37	47	55	126	136	144
LS 6146 R	37	47	56	127	136	144
PAN 1454 R	37	50	57	123	140	144
PHB 94 Y 80 R	39	53	61	125	137	144
LS 6248 R	43	66	71	132	152	164
Highveld Top	45	66	79	135	156	170
Knap	51	66	76	131	158	169
PHB 95 Y 20 R	45	71	84	143	161	172
PAN 1583 R	39	67	76	142	169	166
LS 6453 R	39	67	70	130	153	163
PAN 1664 R	47	64	76	142	160	166
PHB 95 Y 40 R	51	67	78	140	163	173
PAN 1521 R	45	69	80	132	155	163
PAN 1500 R	43	68	81	142	162	173
Marula	51	68	79	127	161	172
PAN 1513 R	51	67	78	131	160	172
Dundee	45	70	79	137	160	176
S 722/6/1E	54	73	88	145	162	177
LS 6261 R	51	60	73	132	157	169
PAN 1666 R	51	69	77	136	155	167
PAN 1623 R	51	68	76	132	162	171
LS 6164 R	45	67	75	135	160	170
DM 602i RR	45	70	77	131	162	176
LS 6161 R	45	69	78	132	159	168
PAN 1614 R	53	68	79	132	161	174
Egret	52	73	86	140	165	175
Heron	38	71	86	136	159	175
Ibis 2000	50	73	76	138	166	173
PAN 1729 R	57	73	85	140	162	174

¹ - Gemiddeld van 2 lokaliteite / average of 2 localities

³ - Gemiddeld van 5 lokaliteit / average of 5 locality

⁵ - Gemiddeld van 8 lokaliteite / average of 8 localities

² - Gemiddeld van 8 lokaliteite / average of 8 localities

⁴ - Gemiddeld van 2 lokaliteite / average of 2 localities

⁶ - Gemiddeld van 5 lokaliteite / average of 5 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 2013/14 groeiseisoen.

Table 2: Grouping of localities according to warm, moderate and cool production areas during the 2013/14 growing season.

Warm / Warm	Matig / Moderate	Koel / Cool
Brits (B/I) NW Groblersdal (B/I) L Rustenburg (B/I) NW Vaalharts (B/I) NC	Cedara (D) KZN Dundee (D) KZN Glen (B/I) FS Greytown (D) KZN Greytown Kranskop (D) KZN Hoopstad (D) FS Migdol (D) NW Potchefstroom (B/I) NW Potchefstroom (D) NW Stoffberg (D) MP	Bethlehem (D) FS Delmas (D) MP Kinross (D) MP Kokstad (D) KZN Marquard (D) FS 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 2013/14 groeiseisoen geëvalueer is.
Table 3: General information on registered soybean cultivars that were evaluated during the 2013/14 growing season.

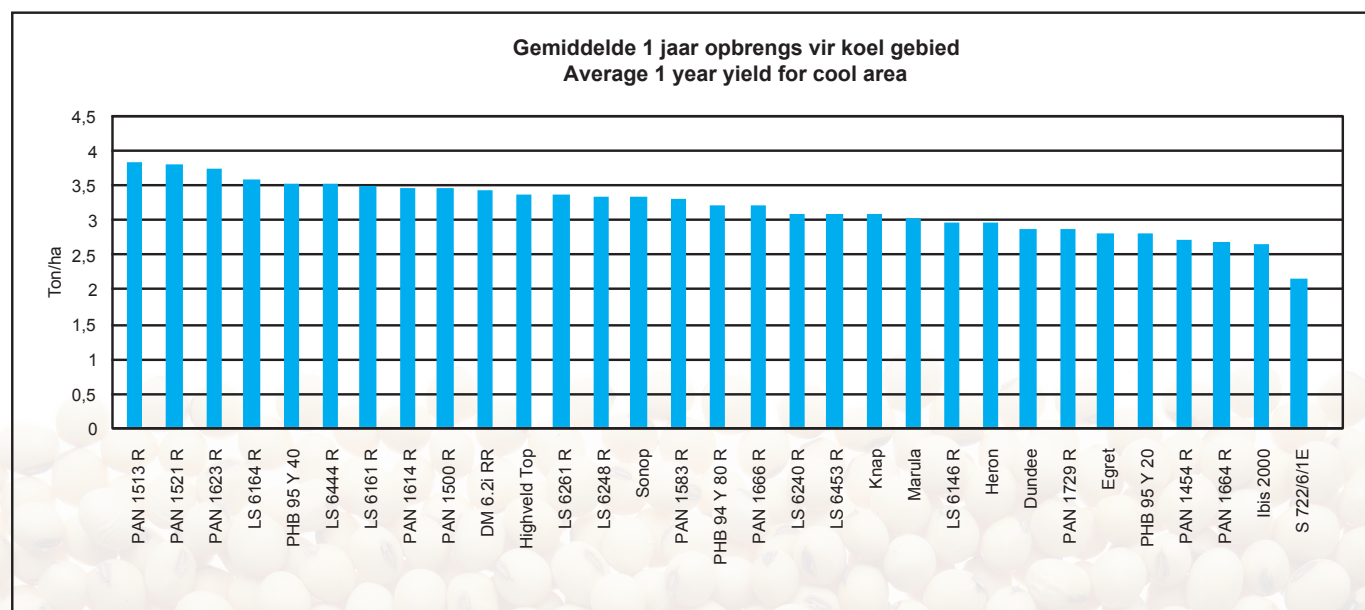
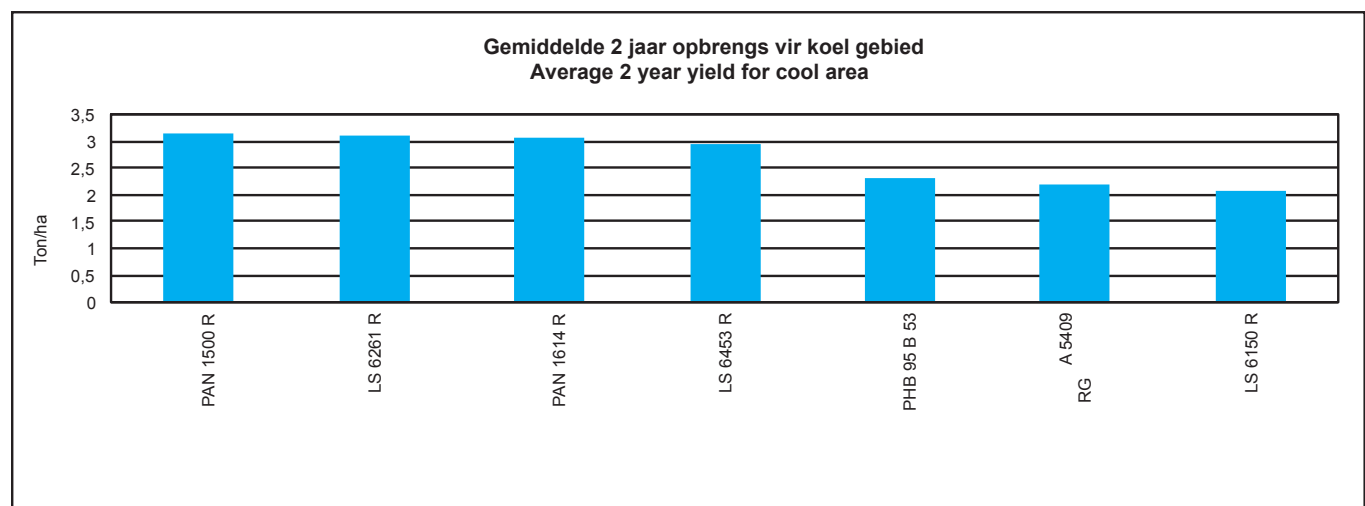
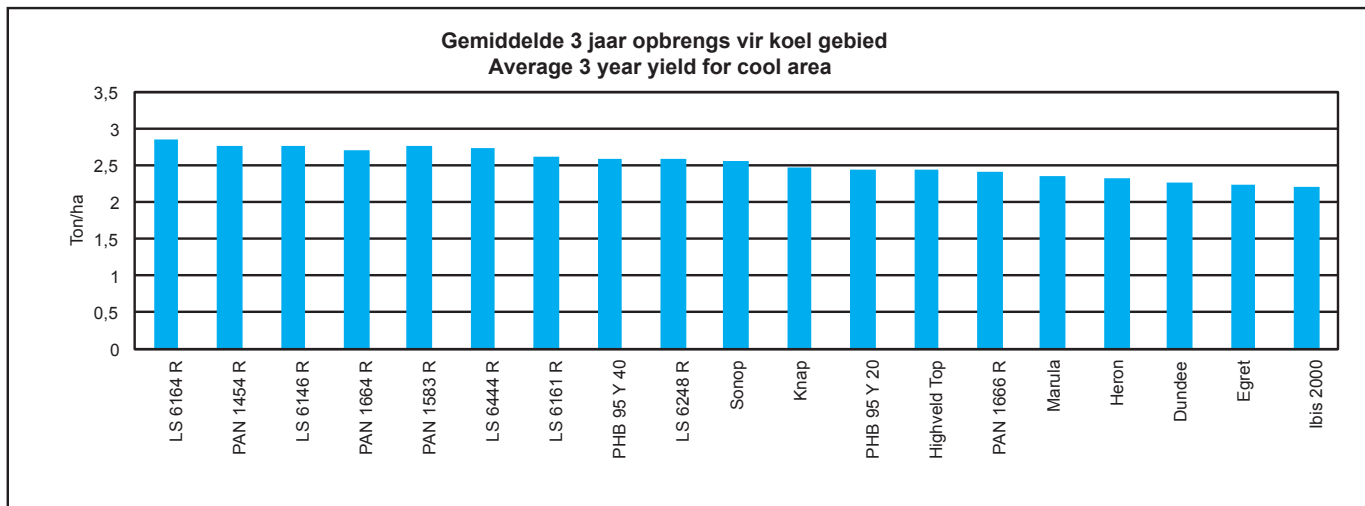
Kultivar/ Cultivar	Volwasse heidsgroe- pering/Maturity Group	Groei - wyse/ Growth habit ¹	Hilum kleur/ Hilum colour ²	Oliepersentasie/Oil percentage (%)			Proteïenpersentasie/ Protein percentage (%)			Peulhoogte/Pod height ³			Oopsporing/Shattering ⁴			Verskaffer/ Supplier
				Koel	Matig	Warm	Koel	Matig	Warm	Koel	Matig	Warm	Koel	Matig	Warm	
Sonop	4.0	I	B	17.98	19.57	20.90	36.48	37.49	37.40	11	13	6	1.20	1.00	1.00	GW Bhürmann
LS 6240 R	4.0	SD	BL	19.62	20.12	21.30	36.28	37.49	36.95	7	6	2	1.13	1.00	1.00	Linkseed
LS 6444 R	4.0	SD	BL	20.12	20.73	22.40	34.50	35.33	33.50	6	4	2	1.60	1.00	1.00	Linkseed
LS 6146 R	4.4	I	BL	20.70	20.37	22.60	34.02	37.18	34.45	7	6	3	1.13	1.00	1.00	Linkseed
PAN 1454 R	4.4	I	BL	19.30	20.22	21.55	35.64	37.09	36.30	6	7	5	1.47	1.04	1.04	Pannar
PHB 94 Y 80 R	4.8	I	LB	18.92	19.56	21.85	37.10	37.93	34.85	6	7	4	1.33	1.00	1.00	Pioneer
LS 6248 R	5.0	SD	BL	17.96	19.38	20.40	36.56	37.04	37.50	12	12	8	1.67	1.04	1.04	Linkseed
Highveld Top	5.0	I	BL	18.30	19.50	21.80	36.66	37.26	35.35	12	12	6	1.00	1.00	1.00	GW Bhürmann
Knap	5.0	I	B/BL	17.36	19.23	20.20	37.08	37.76	38.30	12	12	9	1.53	1.00	1.00	GW Bhürmann
PHB 95 Y 20 R	5.2	D	BL	16.72	18.46	20.30	39.00	38.54	38.55	10	9	6	1.07	1.00	1.00	Pioneer
PAN 1583 R	5.2	D	LB	17.78	19.38	21.80	36.08	36.76	34.10	8	9	5	1.47	1.00	1.00	Pannar
LS 6453 R	5.3	SD	BL	18.08	19.34	19.25	37.66	37.68	39.35	10	9	7	1.53	1.00	1.00	Linkseed
PAN 1664 R	5.3	D	LB	18.00	19.83	21.65	36.56	33.31	34.25	7	8	3	1.53	1.00	1.00	Pannar
PHB 95 Y 40 R	5.4	D	BL	16.68	18.52	20.80	39.78	38.86	37.55	11	12	2	1.27	1.00	1.00	Pioneer
PAN 1521 R	5.7	I	IB	17.84	19.16	21.05	37.18	37.28	35.20	11	12	9	1.13	1.00	1.00	Pannar
PAN 1500 R	5.7	I	IB	17.94	18.88	20.45	38.46	38.21	37.30	12	11	6	1.13	1.00	1.00	Pannar
Marula	6.0	I	B/BL	17.50	19.21	20.40	37.00	37.36	37.95	13	13	5	1.33	1.00	1.00	GW Bhürmann
PAN 1513 R	6.0	I	KL	18.66	20.36	21.60	35.42	36.03	34.95	11	12	9	1.13	1.00	1.00	Pannar
Dundee	6.0	I	B	17.40	19.19	20.80	35.02	36.50	35.85	13	14	7	1.20	1.00	1.00	ARC
S 722/6/1E	6.0	I	KL	16.60	18.14	20.00	39.43	38.89	39.35	10	10	4	1.25	1.04	1.04	Seed-co
LS 6261 R	6.1	SD	BL	18.52	19.36	20.95	36.16	37.57	37.25	7	10	5	1.53	1.00	1.00	Linkseed
PAN 1666 R	6.1	I	BL	18.20	19.53	20.95	36.66	37.36	37.80	13	12	6	1.13	1.00	1.00	Pannar
PAN 1623 R	6.1	I	KL	18.06	19.57	20.45	38.30	37.58	39.65	10	11	6	1.13	1.00	1.00	Pannar
LS 6164 R	6.2	SD	LB	17.76	19.08	21.05	37.34	37.63	36.30	10	10	6	1.40	1.00	1.00	Linkseed
DM 6.2iRR	6.2	I	LB	17.10	18.82	21.70	36.42	37.04	33.60	11	11	6	1.00	1.00	1.00	Agricol
LS 6161 R	6.3	SD	IB	18.32	19.32	21.80	36.84	37.34	33.65	12	13	10	1.47	1.00	1.00	Linkseed
PAN 1614 R	6.4	I	B	17.68	19.43	20.65	37.90	36.56	36.25	14	13	9	1.00	1.00	1.00	Pannar
Egret	7.0	D	KL	16.60	17.64	18.90	38.14	39.83	38.90	11	8	6	1.47	1.00	1.00	ARC
Heron	7.0	D	LB	17.14	18.70	19.65	36.60	37.32	38.55	11	10	4	1.47	1.00	1.00	ARC
Ibis 2000	7.0	D	IB	16.58	18.08	20.30	38.60	38.33	40.15	10	12	5	1.53	1.00	1.00	ARC
PAN 1729 R	7.3	I	KL	18.52	19.39	19.60	34.18	37.30	39.05	10	10	6	1.00	1.00	1.00	Pannar

SD - Semi-Bepaald/Semi Determinate

I - Onbepaald/Indeterminate
IB - Onvolledig swart/Imperfect black
LB - Ligbruin/Buf
KL - Kleurloos/Buf

¹ D - Bepaald/Determinate
² BL - Swart/Black
B - Bruin/Brown
G - Grys/Grey

³ Peulhoogte in cm/Pod height in cm
⁴ Geneigtheid tot oopsporing 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



Tabel 4: Oessekerheid by die verskillende opbrengsmikpunte vir die koeler produksiegebiede, 2011/12, 2012/13, 2013/14
Table 4: Yield reliability at the different yield targets for the cooler production areas, 2011/12, 2012/13, 2013/14

Kultivar Cultivar	Opbrengsmikpunte/Yield targets ton ha ⁻¹							Gem/Mean 3 jaar/year	D ²
	1.00	1.50	2.00*	2.50*	3.00*	3.50*	4.00*		
PAN 1454 R	1.40*	1.52*	1.60*	1.76	1.87	1.99	2.11	2.78	0.51
LS 6161 R	0.19	0.75	1.32	1.88*	2.45*	3.01*	3.58*	2.62	0.24
LS 6164 R	0.45	1.06*	1.66*	2.27*	2.88*	3.48*	4.09*	2.87	0.15
LS 6146 R	0.77*	0.98*	1.21	1.43	1.65	1.87	2.08	2.76	0.86
PAN 1666 R	0.25	0.69	1.13	1.57	2.02	2.46	2.90	2.41	0.32
Sonop	0.47	0.92	1.38*	1.83	2.28	2.73	3.19	2.57	0.24
PHB 95 Y 20	0.44	0.91	1.38*	1.85	2.32	2.79	3.26	2.49	0.18
Heron	0.00	0.54	1.14	1.75	2.36	2.97*	3.57*	2.32	0.14
Egret	0.00	0.09	0.75	1.40	2.05	2.70	3.35	2.24	0.31
Ibis 2000	0.38	0.80	1.22	1.64	2.06	2.48	2.90	2.21	0.14
PAN 1664 R	0.14	0.76	1.39*	2.01*	2.63*	3.25*	3.87*	2.75	0.24
Dundee	0.03	0.60	1.17	1.74	2.31	2.88	3.45	2.28	0.12
LS 6444 R	1.36*	1.37*	1.37	1.38	1.38	1.38	1.39	2.72	0.90
LS 6248 R	0.01	0.58	1.15	1.71	2.28	2.85	3.42	2.58	0.33
PAN 1583 R	0.43	0.96*	1.50*	2.04	2.58*	3.11*	3.65*	2.75	0.22
PHB 95 Y 40	0.03	0.61	1.19	1.77	2.35	2.93	3.51*	2.61	0.31
Highveld Top	0.05	0.62	1.19	1.76	2.33	2.91	3.48	2.44	0.20
Knap	0.20	0.75	1.30	1.85	2.40	2.95*	3.50*	2.47	0.17
Marula	0.34	0.81	1.27	1.74	2.21	2.68	3.14	2.35	0.16

Hoër as kolomgemiddelde/higher than column mean.

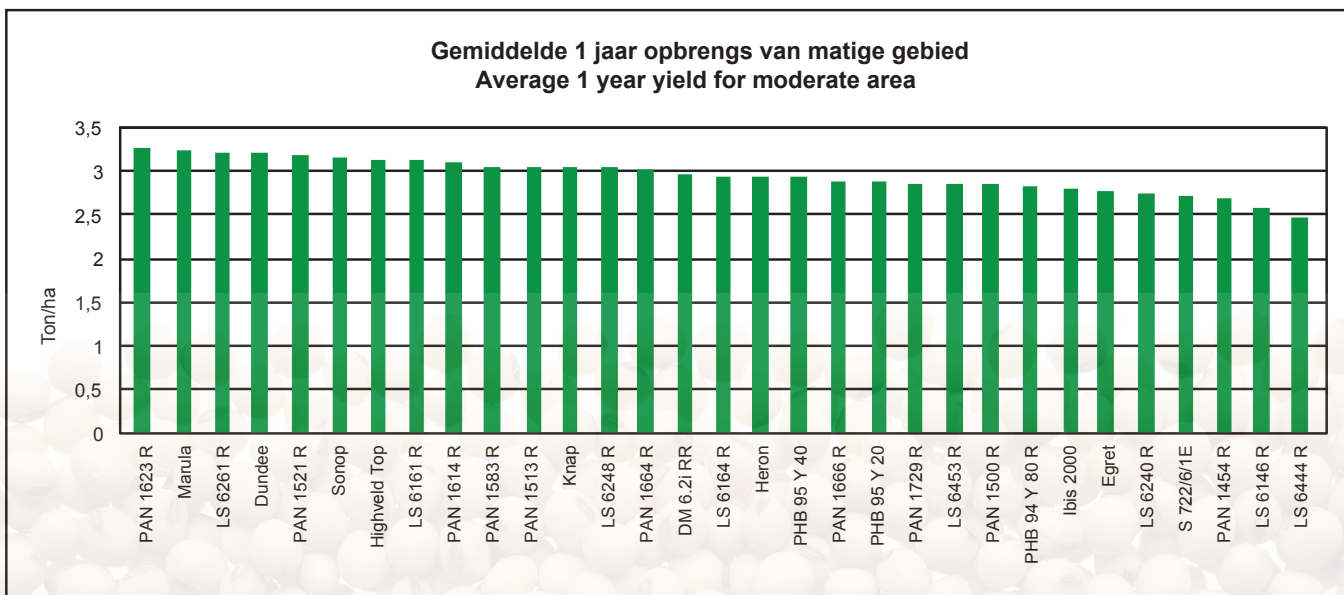
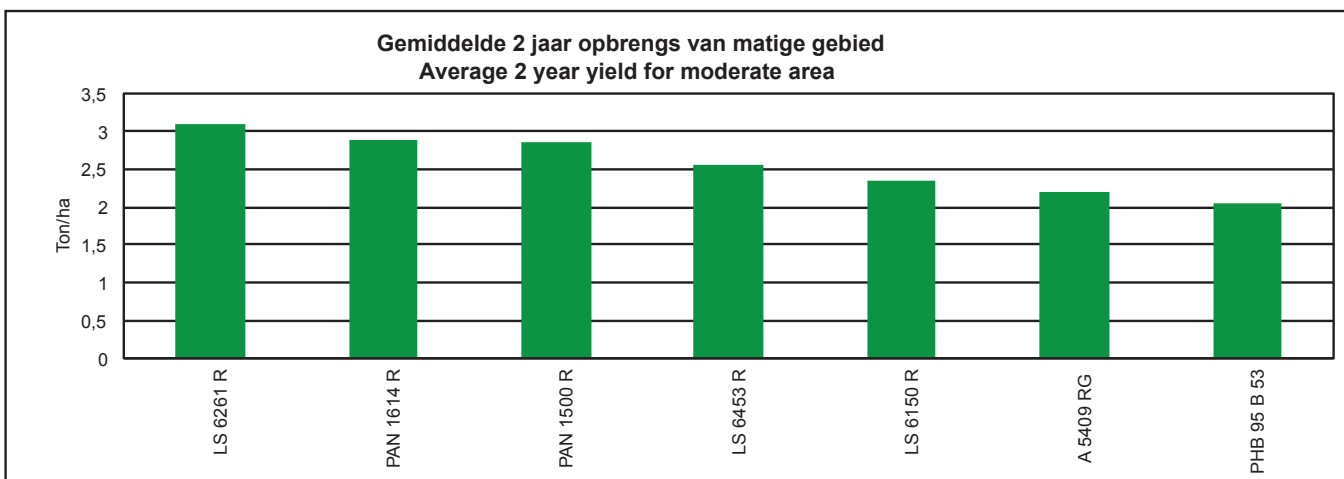
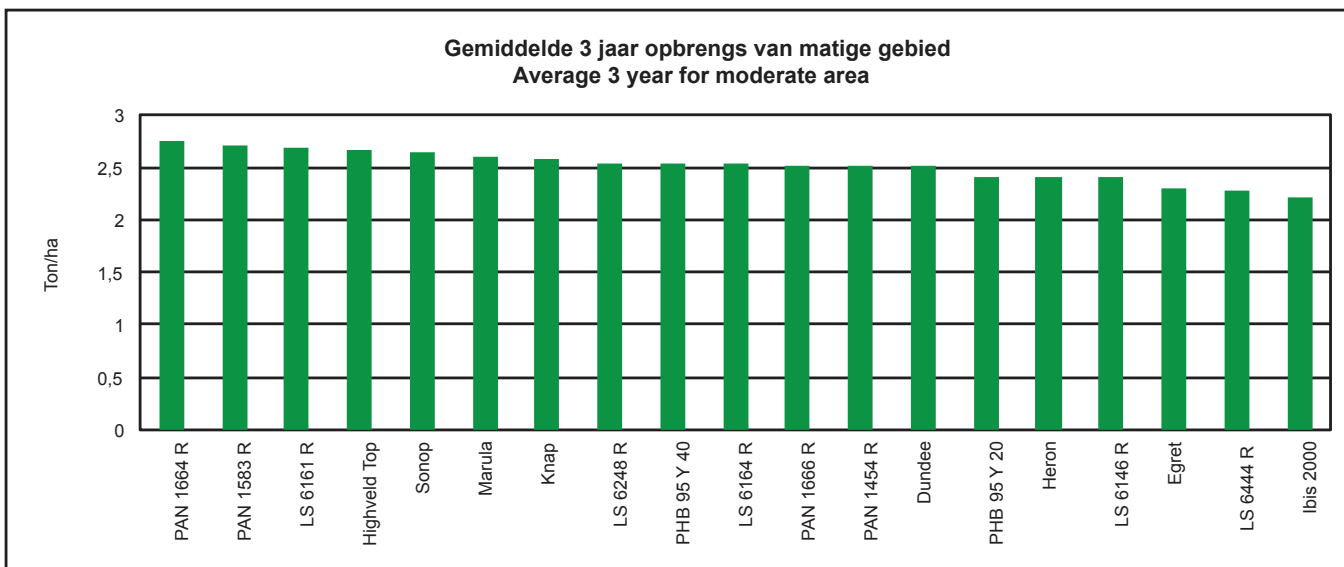
D² waarde dui stabiliteit van 'n kultivar aan. Hoe kleiner die D² waarde, hoe meer stabiel is die kultivar.

D² value indicates the stability of a cultivar. A smaller D² value indicates a more stable cultivar.

Tabel 5: Saadopbrengs (kg/ha⁻¹) van kultivars gedurende die 2012/13 en 2013/14 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 2012/13 and 2013/14 growing season for the various localities situated in the cooler production areas

Kultivar Cultivar	2012/13				2013/14					
	Bethlehem	Delmas	Middelburg	Gem/Mean	Bethlehem	Delmas	Kinross	Kokstad	Middelburg	Gem/Mean
Sonop	1.43	3.28	2.70	2.47	3.66	3.32	4.01	2.95	2.66	3.32
LS 6444 R	2.18	1.83	2.38	2.13	3.69	3.12	1.92	3.15	1.41	2.66
PAN 1454 R	2.69	2.48	3.54	2.90	2.55	3.46	2.59	2.90	2.03	2.71
LS 6146 R	2.62	2.60	2.25	2.49	2.92	4.80	2.29	2.54	2.18	2.94
LS 6248 R	1.63	5.02	2.44	3.03	3.56	3.72	3.91	3.52	1.91	3.32
PAN 1583 R	1.32	4.83	2.75	2.97	3.96	3.42	4.00	3.08	3.08	3.51
Highveld Top	1.16	3.97	2.60	2.57	2.96	3.91	3.48	3.48	2.89	3.34
Knap	1.22	4.41	2.73	2.79	3.07	4.53	2.50	2.77	2.41	3.06
PHB 95 Y 20	1.43	3.83	3.18	2.81	1.95	3.94	3.05	2.55	2.47	2.79
PHB 95 Y 40	1.94	4.93	1.80	2.89	2.78	4.03	3.79	3.15	3.82	3.52
A 5409 RG	1.88	4.57	2.99	3.15	-	-	-	-	-	-
PHB 95 B 53	1.80	4.61	2.91	3.11	-	-	-	-	-	-
PAN 1666 R	1.13	4.00	3.04	2.72	3.44	2.65	3.31	3.49	3.02	3.18
PAN 1664 R	1.43	5.39	2.75	3.19	3.44	3.80	3.41	2.94	2.86	3.29
LS 6164 R	1.39	4.86	2.41	2.88	3.80	4.19	3.75	3.17	2.91	3.56
Dundee	1.26	4.29	2.43	2.66	2.10	4.11	2.77	2.81	2.56	2.87
Marula	1.12	3.46	3.21	2.60	2.72	4.11	2.43	2.90	2.93	3.02
LS 6161 R	2.05	4.47	2.46	2.99	3.44	4.16	3.83	3.28	2.62	3.47
LS 6150 R	1.00	4.48	2.18	2.55	-	-	-	-	-	-
Egret	0.94	4.98	1.75	2.56	2.21	4.31	2.73	1.93	2.84	2.80
Heron	1.42	4.91	2.04	2.79	2.68	4.39	2.38	2.57	2.69	2.94
Ibis 2000	1.45	3.43	2.15	2.34	1.97	3.77	2.44	2.47	2.57	2.64
LS 6453 R	2.06	3.59	2.70	2.79	3.27	2.51	3.80	3.13	2.60	3.06
PAN 1500 R	1.08	4.32	2.36	2.59	3.83	3.61	3.47	3.13	3.22	3.45
LS 6261 R	1.65	4.11	2.51	2.76	3.56	3.39	3.92	2.98	2.86	3.34
PAN 1614 R	0.76	3.95	2.46	2.39	3.78	4.87	3.52	1.85	3.26	3.46
PAN 1616 R	1.28	4.67	2.70	2.88	-	-	-	-	-	-
LS 6240 R	-	-	-	-	3.18	5.13	1.59	2.81	2.69	3.08
PHB 94 Y 80 R	-	-	-	-	3.31	4.71	2.57	3.21	2.14	3.19
PAN 1521 R	-	-	-	-	3.73	5.02	4.32	3.05	2.83	3.79
PAN 1513 R	-	-	-	-	3.47	5.47	3.80	3.17	3.20	3.82
S 722/6/1E	-	-	-	-	1.80	2.61	-	2.47	1.70	2.14
PAN 1623 R	-	-	-	-	3.57	4.66	3.87	3.48	3.05	3.73
DM 6.2i RR	-	-	-	-	3.04	4.77	3.53	2.97	2.78	3.42
PAN 1729 R	-	-	-	-	2.09	3.96	3.33	2.63	2.28	2.86
Gem/Mean	1.53	4.12	2.57	2.74	3.08	4.01	3.21	2.92	2.66	3.17



Tabel 6: Oessekerheid by die verskillende opbrengsmikpunte vir die matige produksiegebiede, 2011/12, 2012/13, 2013/14

Table 6: Yield reliability at the different yield targets for the moderate production areas, 2011/12, 2012/13, 2013/14

Kultivar Cultivar	Opbrengsmikpunte/Yield targets ton ha ⁻¹							Gem/Mean 3 jaar/year	D ²
	1.00	1.50	2.00	2.50	3.00	3.50	4.00		
PAN 1454 R	0.47	0.94	1.41	1.87	2.34	2.80	3.27	2.49	0.19
LS 6161 R	0.73*	1.22*	1.70*	2.19*	2.67*	3.16*	3.64*	2.69	0.13
LS 6164 R	0.53	1.00	1.48	1.95	2.42	2.90	3.37	2.50	0.15
Sonop	0.74*	1.25*	1.76*	2.27*	2.78	3.29*	3.80*	2.64	0.07
PAN 1666 R	0.57	1.06	1.55	2.05	2.54	3.03	3.52	2.52	0.12
LS 6146 R	0.19	0.66	1.14	1.61	2.08	2.55	3.03	2.40	0.32
Heron	0.42	0.91	1.39	1.88	2.36	2.85	3.34	2.40	0.14
Egret	0.48	0.89	1.30	1.71	2.12	2.53	2.94	2.30	0.18
Ibis 2000	0.25	0.66	1.07	1.48	1.89	2.30	2.71	2.21	0.27
Dundee	0.32	0.86	1.40	1.94	2.49	3.03	3.57	2.51	0.16
LS 6444 R	0.00	0.42	0.96	1.50	2.04	2.58	3.12	2.27	0.30
LS 6248 R	0.54	1.07	1.60*	2.12*	2.65*	3.18*	3.70*	2.54	0.09
PHB 95 Y 20	0.54	1.00	1.46	1.92	2.39	2.85	3.31	2.41	0.12
PHB 95 Y 40	0.58	1.09*	1.61*	2.13*	2.64*	3.16*	3.68*	2.54	0.08
PAN 1583 R	0.81*	1.30	1.80*	2.29*	2.78*	3.27*	3.76*	2.71	0.09
PAN 1664 R	0.51	1.04	1.57	2.10*	2.63*	3.16*	3.69*	2.75	0.22
Highveld Top	0.53	1.08	1.63*	2.17*	2.72*	3.27*	3.82*	2.66	0.12
Knap	0.64*	1.13*	1.63	2.13	2.62*	3.12	3.61	2.59	0.11
Marula	0.59*	1.14	1.69*	2.25*	2.80*	3.35*	3.91*	2.60	0.06

Hoër as kolomgemiddelde/higher than column mean.

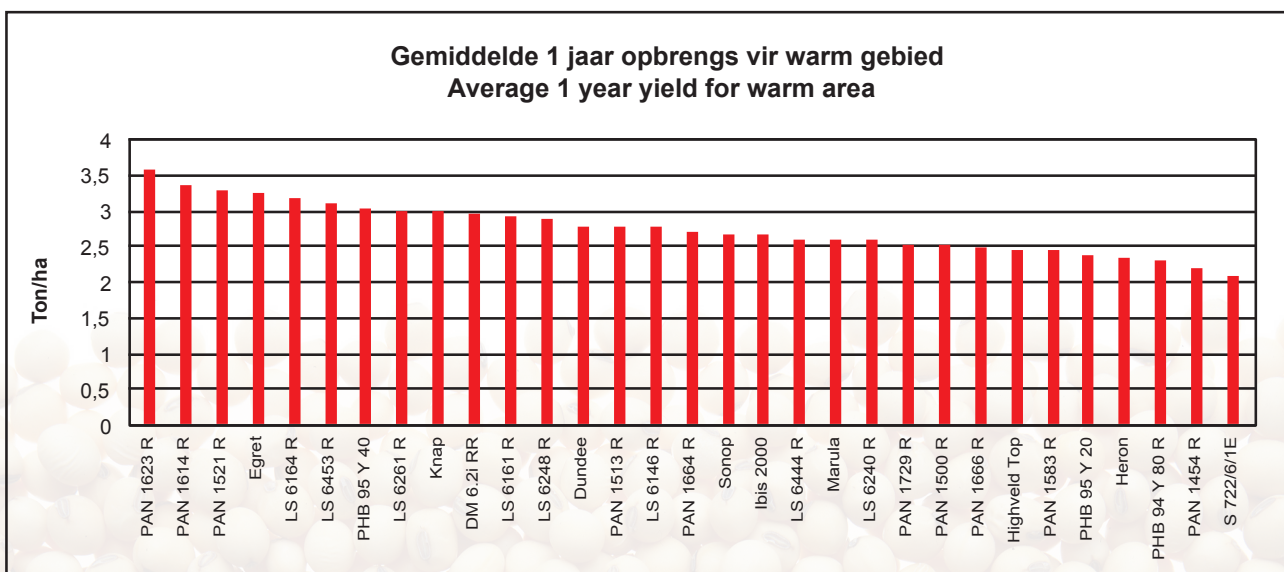
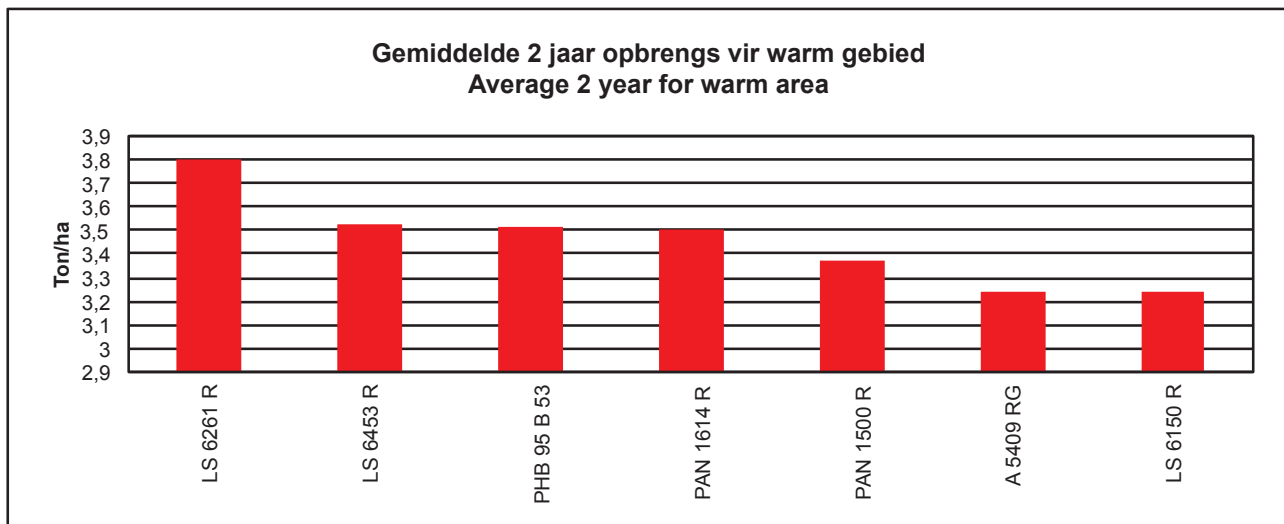
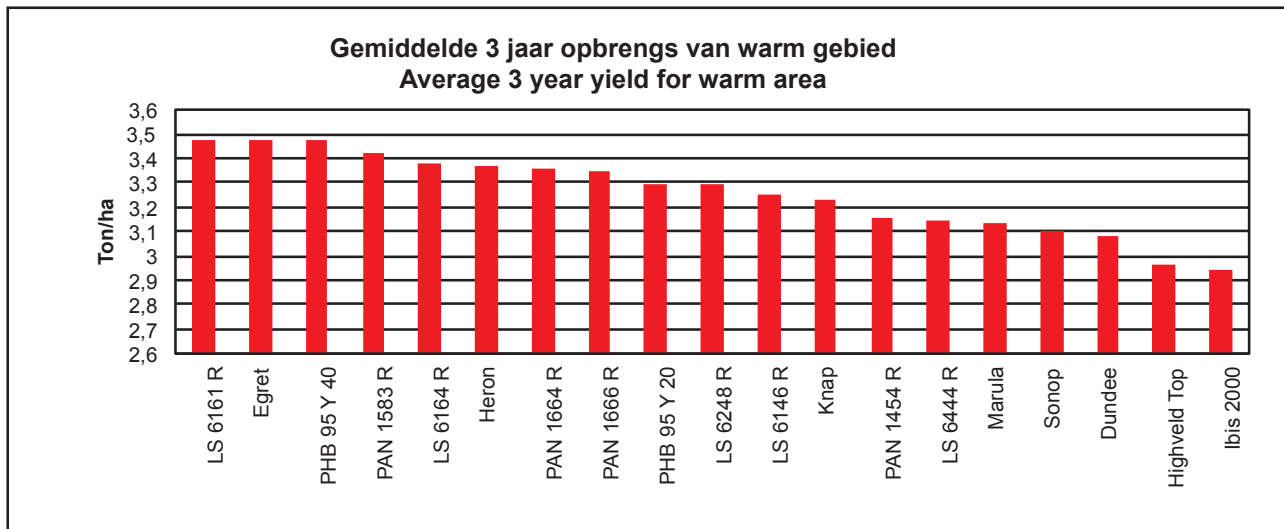
D² waarde dui stabiliteit van 'n kultivar aan. Hoe kleiner die D² waarde, hoe meer stabiel is die kultivar.

D² value indicates the stability of a cultivar. A smaller D² value indicates a more stable cultivar.

Tabel 7: Saadopbrengs (kg/ha⁻¹) van kultivars gedurende die 2012/13 en 2013/14 groeiseisoen ten opsigte van die verskillende lokaliteite wat in die matige produksiegebiede geleë is

Table 7: Seed yield (kg/ha⁻¹) of cultivars during the 2012/13 and 2013/14 growing season for the various localities situated in the moderate production areas

2012/13									2013/14									
Kultivar Cultivar	Cedara	Dundee	Greytown	Greytown Kranskop	Lichtenburg	Potch Bespr	Stoffberg	Gem/Mean	Cedara	Glen	Greytown	Greytown Kranskop	Hoopstad	Migdol	Potch Besproei	Potch Droog	Stoffberg	Gem/Mean
Sonop	3.51	3.08	2.51	3.57	0.78	2.42	2.18	2.58	4.14	4.29	3.01	2.07	3.42	3.42	3.54	1.77	2.53	3.13
LS 6444 R	3.65	3.03	2.63	3.86	0.60	0.97	1.65	2.34	3.98	4.69	2.04	1.98	2.40	2.09	2.32	1.18	1.41	2.45
PAN 1454 R	3.84	3.03	2.84	3.36	0.90	2.43	2.22	2.66	4.32	3.83	2.68	1.89	2.64	2.57	2.27	1.57	2.33	2.68
LS 6146 R	3.94	2.39	2.80	4.00	1.20	1.89	1.84	2.58	3.58	4.75	2.06	2.32	2.96	2.17	1.97	1.60	1.58	2.56
LS 6248 R	3.83	2.81	2.29	3.61	1.09	1.49	2.31	2.49	4.34	4.21	2.52	2.49	2.55	3.41	3.69	2.00	2.00	3.02
PAN 1583 R	3.48	3.11	3.34	4.04	0.88	2.73	2.56	2.88	4.27	4.27	2.67	2.39	2.43	2.95	3.14	2.15	3.05	3.04
Highveld Top	3.85	3.30	1.99	3.69	0.95	3.05	2.27	2.73	4.66	4.54	2.59	1.98	2.68	3.72	3.46	2.23	2.25	3.12
Knap	3.69	2.86	2.64	3.21	0.82	2.69	2.20	2.59	4.46	4.56	2.72	1.86	3.14	3.48	2.94	1.49	2.57	3.02
PHB 95 Y 20	3.49	2.73	2.53	3.35	1.04	1.14	1.96	2.32	3.93	4.10	3.07	2.06	2.55	2.06	3.29	2.16	2.56	2.86
PHB 95 Y 40	3.95	3.03	2.94	3.73	1.23	1.90	2.61	2.77	4.29	3.65	2.66	1.91	2.58	3.06	3.28	1.80	3.02	2.92
A 5409 RG	3.28	3.39	2.95	3.50	0.82	2.03	2.00	2.57	-	-	-	-	-	-	-	-	-	-
PHB 95 B 53	3.74	2.48	2.40	3.13	1.08	1.87	2.13	2.40	-	-	-	-	-	-	-	-	-	-
PAN 1666 R	4.14	2.77	3.06	3.57	0.61	1.83	2.83	2.69	3.84	3.33	3.27	1.75	2.30	3.03	3.72	1.93	2.67	2.87
PAN 1664 R	3.72	3.37	3.33	3.76	0.95	3.60	2.60	3.05	4.59	3.87	2.63	2.20	2.40	2.28	4.69	1.76	2.63	3.01
LS 6164 R	3.47	2.63	2.86	3.62	0.91	2.75	2.56	2.69	4.02	3.16	3.07	2.54	2.22	2.79	4.26	1.76	2.57	2.93
Dundee	3.98	2.80	2.43	2.83	1.13	2.43	1.77	2.48	4.22	4.29	2.92	1.74	3.13	3.76	3.94	2.08	2.60	3.19
Marula	3.76	2.65	2.78	3.24	0.62	2.23	2.18	2.49	4.29	4.35	3.25	2.36	3.32	3.57	3.34	2.08	2.58	3.24
LS 6161 R	4.08	2.71	2.74	3.64	0.81	2.88	2.33	2.74	4.36	3.16	3.17	2.53	2.33	3.17	4.09	2.63	2.55	3.11
LS 6150 R	3.55	2.87	2.66	3.42	1.03	2.90	2.48	2.70	-	-	-	-	-	-	-	-	-	-
Egret	3.44	2.34	2.18	2.58	1.00	2.39	1.72	2.24	3.64	3.32	2.92	2.12	1.90	2.24	4.01	1.57	3.17	2.76
Heron	3.37	2.60	2.50	3.32	1.13	1.29	1.85	2.29	4.58	3.89	3.40	2.31	1.87	2.48	3.45	1.90	2.45	2.93
Ibis 2000	3.28	1.99	2.49	1.75	0.91	2.54	2.15	2.16	3.66	3.07	2.89	1.12	2.40	3.10	3.87	2.21	2.73	2.78
LS 6453 R	3.52	2.41	2.27	3.41	0.90	1.13	1.99	2.23	3.83	4.33	2.68	2.37	2.72	3.23	2.91	1.44	2.00	2.83
PAN 1500 R	3.45	2.51	3.10	3.68	1.00	3.92	2.44	2.87	3.80	4.05	2.51	1.16	2.79	3.31	3.08	1.96	2.79	2.83
LS 6261 R	4.03	3.79	3.32	4.06	0.90	2.03	2.45	2.94	4.50	5.19	2.54	2.39	3.10	3.37	3.78	1.60	2.41	3.21
PAN 1614 R	3.99	2.84	3.25	3.54	0.96	1.68	2.08	2.62	4.11	3.96	3.14	2.35	3.67	3.18	3.00	1.77	2.50	3.08
PAN 1616 R	3.66	2.78	2.53	2.92	0.83	2.11	2.31	2.45	-	-	-	-	-	-	-	-	-	-
LS 6240 R	-	-	-	-	-	-	-	-	4.40	4.13	2.06	2.13	4.12	2.27	2.42	1.76	1.27	2.73
PHB 94 Y 80 R	-	-	-	-	-	-	-	-	3.87	4.84	1.97	1.72	3.58	2.32	3.91	1.35	1.74	2.81
PAN 1521 R	-	-	-	-	-	-	-	-	4.09	3.73	2.66	2.33	2.59	3.52	4.49	2.02	3.06	3.17
PAN 1513 R	-	-	-	-	-	-	-	-	4.06	2.91	3.15	2.52	2.72	3.08	4.04	2.17	2.58	3.03
S 722/6/1E	-	-	-	-	-	-	-	-	4.37	3.21	2.81	1.63	2.35	3.81	2.37	1.42	2.41	2.71
PAN 1623 R	-	-	-	-	-	-	-	-	4.32	4.43	3.08	2.43	3.25	3.56	3.65	1.76	2.84	3.26
DM 6.2i RR	-	-	-	-	-	-	-	-	4.68	3.01	2.85	1.92	2.81	3.20	3.66	1.67	2.63	2.94
PAN 1729 R	-	-	-	-	-	-	-	-	4.25	3.69	3.12	2.54	1.81	2.82	3.15	1.76	2.46	2.84
Gem/Mean	3.69	2.83	2.72	3.42	0.93	2.23	2.21	2.58	4.18	3.96	2.78	2.10	2.73	3.00	3.41	1.82	2.45	2.94



Tabel 8: Oessekerheid by die verskillende opbrengsmikpunte vir die warm produksiegebiede, 2011/12, 2012/13, 2013/14
Table 8: Yield reliability at the different yield targets for the warm production areas, 2011/12, 2012/13, 2013/14

Kultivar Cultivar	Opbrengsmikpunte/Yield targets ton ha ⁻¹							Gem/Mean 3 jaar/year	D ²
	1.00	1.50	2.00	2.50	3.00	3.50	4.00		
PAN 1454 R	0.36	0.86	1.36	1.86	2.36	2.86	3.36	3.20	0.149
LS 6161 R	0.59*	1.10*	1.61*	2.11*	2.62*	3.13*	3.64*	3.48	0.155
LS 6164 R	0.00	0.75	1.28	1.80	2.33	2.86	3.39	3.38	0.271
Sonop	0.66*	1.11*	1.56*	2.01*	2.46*	2.91	3.36	3.15	0.090
PAN 1666 R	0.55*	1.04*	1.52*	2.01*	2.50*	2.99*	3.48*	3.35	0.155
PHB 95 Y 40	0.76*	1.25*	1.74*	2.23*	2.71*	3.20*	3.69*	3.47	0.113
LS 6146 R	0.14	0.68	1.23	1.77	2.32	2.87	3.41	3.25	0.190
PHB 95 Y 20	0.00	0.02	0.70	1.38	2.07	2.75	3.43	3.30	0.345
Heron	0.26	0.77	1.27	1.78	2.28	2.79	3.30	3.37	0.309
Egret	0.67*	1.15*	1.64*	2.12*	2.61*	3.09*	3.58*	3.47	0.168
Ibis 2000	0.00	0.00	1.11	1.53	1.95	2.36	2.78	2.94	0.278
PAN 1664 R	0.40	0.88	1.36	1.84	2.32	2.80	3.28	3.36	0.282
Dundee	0.72*	1.07*	1.41	1.75	2.09	2.43	2.78	3.08	0.301
LS 6444 R	0.00	0.58	1.13	1.67	2.22	2.77	3.32	3.15	0.185
LS 6248 R	0.17	0.73	1.29	1.85	2.41	2.97*	3.53*	3.29	0.155
PAN 1583 R	0.36	0.89	1.42	1.95	2.48*	3.01*	3.54*	3.43	0.202
Highveld Top	0.31	0.76	1.21	1.66	2.11	2.56	3.01	3.01	0.200
Knap	0.71*	1.16*	1.62*	2.07*	2.52*	2.97*	3.43	3.23	0.101
Marula	0.86*	1.27*	1.69*	2.10*	2.51*	2.92	3.34	3.14	0.074

* Hoër as kolomgemiddelde/higher than column mean.

D² waarde dui stabiliteit van 'n kultivar aan. Hoe kleiner die D² waarde, hoe meer stabiel is die kultivar.

D² value indicates the stability of a cultivar. A smaller D² value indicates a more stable cultivar.

Tabel 9: Saadopbrengs (kg/ha⁻¹) van kultivars gedurende die 2012/13 en 2013/14 groeiseisoen ten opsigte van die verskillende lokaliteite wat in die warm produksiegebiede geleë is

Table 9: Seed yield (kg/ha⁻¹) of cultivars during the 2012/13 and 2013/14 growing season for the various localities situated in the warm production areas

Kultivar Cultivar	2012/13						2013/14		
	Atlanta	Brits	Groblersdal	Koedoeskop	Rustenburg	Gem/Mean	Brits	Groblersdal	Gem/Mean
Sonop	3.26	2.79	3.97	3.93	3.28	3.45	2.78	2.53	2.66
LS 6444 R	3.74	2.60	3.84	4.73	2.40	3.46	2.68	2.50	2.59
PAN 1454 R	3.45	3.27	4.55	4.26	2.93	3.69	2.60	1.77	2.18
LS 6146 R	4.03	3.03	4.34	4.38	2.04	3.56	2.75	2.76	2.76
LS 6248 R	3.80	2.85	3.93	4.24	4.01	3.77	3.40	2.33	2.86
PAN 1583 R	4.09	3.22	4.43	4.71	3.22	3.94	2.49	2.37	2.43
Highveld Top	3.24	2.92	3.76	3.87	3.37	3.43	2.67	2.20	2.44
Knap	3.19	3.15	4.54	3.94	3.44	3.65	3.36	2.64	3.00
PHB 95 Y 20	4.24	3.32	5.98	4.29	2.85	4.13	2.96	1.78	2.37
PHB 95 Y 40	4.51	3.06	4.92	4.03	3.30	3.96	3.33	2.68	3.00
A 5409 RG	3.59	2.87	4.34	4.09	3.50	3.68	-	-	-
PHB 95 B 53	4.43	2.45	4.58	4.33	3.82	3.92	-	-	-
PAN 1666 R	3.72	3.28	3.98	4.22	3.89	3.82	2.82	2.16	2.49
PAN 1664 R	4.64	3.32	4.06	4.74	2.48	3.85	2.77	2.64	2.70
LS 6164 R	4.09	3.51	4.75	4.44	2.09	3.77	3.00	3.31	3.16
Dundee	2.89	2.39	3.31	3.77	4.11	3.29	2.86	2.69	2.78
Marula	3.19	3.05	3.85	4.14	2.93	3.43	2.66	2.49	2.58
LS 6161 R	4.17	3.54	4.61	4.12	4.37	4.16	3.17	2.64	2.90
LS 6150 R	3.81	3.05	4.42	4.39	2.03	3.54	-	-	-
Egret	4.32	2.58	5.01	4.13	3.83	3.97	3.08	3.41	3.25
Heron	3.37	2.92	4.72	4.30	3.74	3.81	1.87	2.77	2.32
Ibis 2000	4.45	2.80	3.47	3.64	2.16	3.30	2.55	2.75	2.65
LS 6453 R	4.15	3.54	3.63	4.35	2.80	3.69	3.64	2.54	3.09
PAN 1500 R	3.94	2.80	4.15	4.14	3.57	3.72	2.74	2.26	2.50
LS 6261 R	3.99	2.77	5.00	4.82	4.02	4.12	3.55	2.45	3.00
PAN 1614 R	4.28	2.54	4.26	3.34	3.43	3.57	3.41	3.26	3.34
PAN 1616 R	4.17	2.94	4.65	4.09	3.57	3.88	-	-	-
LS 6240 R	-	-	-	-	-	-	2.83	2.32	2.57
PHB 94 Y 80 R	-	-	-	-	-	-	2.36	2.26	2.31
PAN 1521 R	-	-	-	-	-	-	3.88	2.71	3.29
PAN 1513 R	-	-	-	-	-	-	3.42	2.09	2.76
S 722/6/1E	-	-	-	-	-	-	2.42	1.75	2.09
PAN 1623 R	-	-	-	-	-	-	3.62	3.50	3.56
DM 6.2i RR	-	-	-	-	-	-	3.61	2.32	2.97
PAN 1729 R	-	-	-	-	-	-	2.92	2.09	2.51
Gem/Mean	3.88	2.98	4.33	4.20	3.23	3.73	2.97	2.52	2.74

Current variety list: (to be published in June 2014)

Conventional:

Amstel No. 1 (305)	Dumela (305)	* Dundee (254-3)
* Egret (254-3)	* Heron (254-3)	* Ibis 2000 (254-3)
* Jimmy (254-3)	Kiaat (489)	Knap (150)
* LS 555 (484)	* LS 677 (484)	* LS 678 (484)
Marula (150)	Mopanie (489)	Mukwa (489)
* NED 11-91 (65)	* Nqutu (254-3)	NSO-15 (1637)
Octa (1412)	* PAN 1595 (1412)	* PAN 1800 (1412)
* PAN 1867 (1412)	* S 722/6/1E (1137)	* SC Sorcerer (1526)
Sonop (150)	* Stork (254-3)	Tambotie (489)
VegSoyBrBr082 (1574)	VegSoyYeCo069 (1574)	VegSoyYGP077 (1574)
VegSoyYGP083 (1574)	Wenner (369)	

GMO:

# 5953 RSF (1)	* 6.15 F (1573)	--- Y 615F
* A 5409 RG (80)	# AGC 4134A4R (1076)	# AGC 5028A4R (1076)
# AGC 5028B4R (1076)	# AGC 5028C4R (1076)	* AGC 58007 R (1076)
* AGC 64107 R (1076)	# Don Mario 4670 (1)	# Don Mario 5.1i (1)
* Don Mario 6.2i (1)	* Don Mario 6.8i (1)	# FN 5.25 (1573)
# FN 5.75 (1573)	* LS 6050 R (484)	* LS 6146 R (484)
* LS 6150 R (484)	* LS 6161 R (484)	* LS 6162 R (484)
* LS 6164 R (484)	* LS 6240 R (484)	* LS 6248 R (484)
* LS 6256(2) R (484)	* LS 6261 R (484)	* LS 6444 R (484)
* LS 6452 R (484)	* LS 6453 R (484)	* LS 6466 R (484)
NS 6448 (1421)	NS 7211 (1421)	NS 8004 (1421)
NS 8009 RG (1421)	PAN 535 RR (1412)	* PAN 737 RR (1412)
* PAN 1454 R (1412)	* PAN 1500 R (1412)	PAN 1513 R (1412)
* PAN 1521 R (1412)	* PAN 1583 R (1412)	PAN 1614 R (1412)
PAN 1616 R (1412)	* PAN 1623 R (1412)	* PAN 1664 R (1412)
* PAN 1666 R (1412)	* PAN 1729 R (1412)	* Phb 94Y80 R (411)
* Phb 95B53 R (411)	* Phb 95Y01 R (411)	* Phb 95Y20 R (411)
* Phb 95Y40 R (411)	* Phb 95Y41 R (411)	* RM 5500 (1573)
--- Y 550	# RM 5700 (1573)	# SRM 5200 (1573)

= PBR pending * = PBR granted

Address list:

1 Agricol
65 Adams & Adams
80 Monsanto
150 Buhrman, G.
254-3 ARC GCI
296 Tregenna Farm Trust
305 Vreken, H.
369 Borman, G.J.J.
411 Pioneer Hi-Bred RSA
484 Link Seed
489 New Crop

598 Cedara Agric Research Station
876 Schlanders, R.T.
1076 Agriocare
1137 Seed-Co (Pty) Ltd.
1412 Pannar Seed
1421 Klein Karoo Seed Marketing Ltd
1526 Seed Co SA (Pty) Ltd
1573 Southern Hemisphere Seeds
1574 Newlands Mashu
1610 Newlands Mashu, Edamane Development Program
1637 One Direction Solutions

Notas • Notes

A decorative border at the bottom of the page featuring a dense layer of yellow soybeans. The beans are small, round, and have a distinct black 'Y' mark on their surface. They are piled together, creating a textured, organic pattern that spans the entire width of the page. The background of the page is white, and the top portion is filled with horizontal ruling lines.

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.**

ERKENNING

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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.**

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