



**ARC • LNR**  
*Excellence in Agricultural Research and Development*

**SONNEBLOMKULTIVAR-  
AANBEVELINGS**

**SUNFLOWER CULTIVAR  
RECOMMENDATIONS**

**2025/2026**



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**ARC-GRAIN CROPS,  
POTCHEFSTROOM  
AND BIOMETRY**



Om finansiële sukses met sonneblomproduksie te verseker, is 'n hoë vlak van doeltreffendheid noodsaaklik. Die seleksie van goed aangepaste kultivars is 'n goedkoop en eenvoudige manier om doeltreffendheid te bevorder en daarvoor is inligting oor die prestasie van kultivars nodig.

Die doel van die nasionale sonneblom kultivar-evaluasieproewe is om inligting te verskaf, sodat sinvolle kultivar keuses gemaak kan word.

Kultivar-aanbevelings in dié dokument spruit voort uit samewerking tussen die LNR-GG en verskeie saad-maatskappye met finansiële ondersteuning van die Olie- en Proteïensade Ontwikkelings-Trust.

17 kultivars waarvan vyf nuwe inskrywings was, is ingesluit en geëvalueer in 24 veldproewe gedurende 2024/2025. In **Tabel 1** word die groei-seisoenlengtes van dié kultivars, asook die gemiddelde opbrengste wat in 2023/2024 en 2024/2025 behaal is, aangetoon.

**Grafieke 1-3** toon sonneblom saadopbrengs vir een jaar (1), twee jaar (2) en drie jaar (3) aan.

## OPBRENGSWAARSKYNLIKHEID

Die opbrengswaarskynlikheid van 'n kultivar is die kans om 'n bogemiddelde opbrengs by 'n bepaalde 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.

**Tabel 2** toon opbrengswaarskynlikheidswaardes van die kultivars wat in 2024/2025 geëvalueer is aan. Weens die jaarlikse toevoeging en onttrekking van kultivars, is 'n meerjarige oessekerheidsevaluasie op slegs 'n beperkte aantal kultivars moontlik. **Tabel 3** toon opbrengswaarskynlikheidswaardes van 14 kultivars wat in 54 proewe gedurende 2022/2023 en 2024/2025 geëvalueer is, aan. **Tabel 4** toon opbrengswaarskynlikheid van 12 kultivars wat in

Maintaining a high level of efficiency is the basis for the financial success of sunflower production. The selection of well-adapted cultivars is a simple and easy way to foster efficiency for which information on the performance of cultivars is needed.

The aim of the sunflower cultivar trials is to generate information from which a sensible selection of cultivars can be made.

The cultivar recommendations in this document stem from such an evaluation, made possible by collaboration between the ARC-GC and several seed companies with financial support from the Oil and Protein Seed Development Trust.

17 cultivars, of which five were new introductions, were evaluated in 24 field trials during 2024/2025. **Table 1** shows the growing season lengths of these cultivars as well as their mean seed yields for 2023/2024 and 2024/2025.

The graphs below show sunflower seed yields for one year (**Graph 1**), two years (**Graph 2**) and three years (**Graph 3**).

## YIELD PROBABILITY

A cultivar's yield probability is the chance to realise 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 realise a yield above the mean of all cultivars is 60% with a 40% chance of obtaining a yield below the mean.

**Table 2** shows yield probability values for the cultivars tested in 2024/2025. Since new cultivars are introduced and some are removed annually, a multi-season reliability analysis is only possible for a limited number of cultivars. **Table 3** shows yield probability values for 14 cultivars that were evaluated in 54 trials during 2023/2024 and 2024/2025.

81 proewe gedurende 2022/2023 tot 2024/2025 groei seisoene geëvalueer is.

**Tabel 3** kan gebruik word om 'n kernseleksie van kultivars te maak. Hierdie opsomming kan aangevul word met kultivars uit **Tabelle 1** en **2**. Dit is altyd raadsaam om meer as een kultivar te plant en om nuwe kultivars slegs op 'n beperkte skaal in te sluit.

### **KULTIVARSELEKSIE UIT DIE OPBRENGSWAARSKYNLIKHEIDSTABEL**

Bepaal eerstens die opbrengspotensiaal van 'n land en stel dan 'n opbrengsmikpunt. Die langtermyn gemiddelde opbrengs is gewoonlik 'n goeie aanduiding van die opbrengspotensiaal wat dikwels ook as die mikpunt dien. Raadpleeg vervolgens die opbrengswaarskynlikheidstabelle.

Kultivars met die hoogste opbrengswaarskynlikhede, wat in die kolom onder 'n bepaalde opbrengs-potensiaal getoon word, het die grootste kans om goed in die bepaalde omstandighede te presteer.

**Table 4** shows yield probability values for 12 cultivars that were evaluated in 81 trials during the 2022/2023 to 2024/2025 growing seasons.

**Table 3** and **Table 4** can be used to select a core of cultivars. This selection can be expanded with cultivars selected from **Tables 1** and **2**. It is advisable to grow more than one cultivar and to include new cultivars on a limited scale only.

### **CULTIVAR SELECTION FROM THE YIELD PROBABILITY TABLE**


Determine the yield potential for a particular land and set a yield target. The long-term mean yield of a particular field is usually a good indicator of the yield potential and can therefore serve as yield target. Consult the yield probability tables next.

Cultivars with the highest yield probability values, in the column below a particular yield potential, are those with the best chance to perform well under the particular conditions.

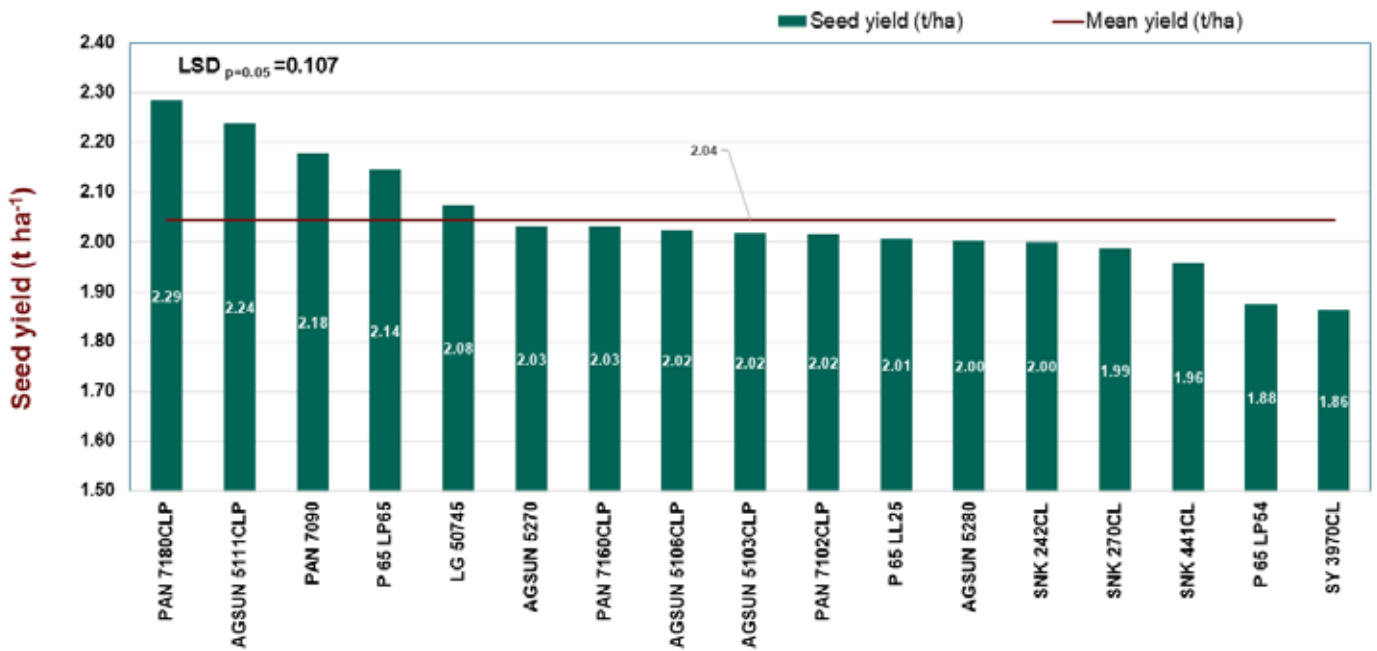


**TABEL 1: DAE TOT BLOM EN SAADOPBRENGSTE VAN GE-EVALUEERDE KULTIVARS IN 2023/2024 EN 2024/2025**

**TABLE 1: DAYS TO FLOWERING AND SEED YIELD OF CULTIVARS EVALUATED IN 2023/2024 AND 2024/2025**

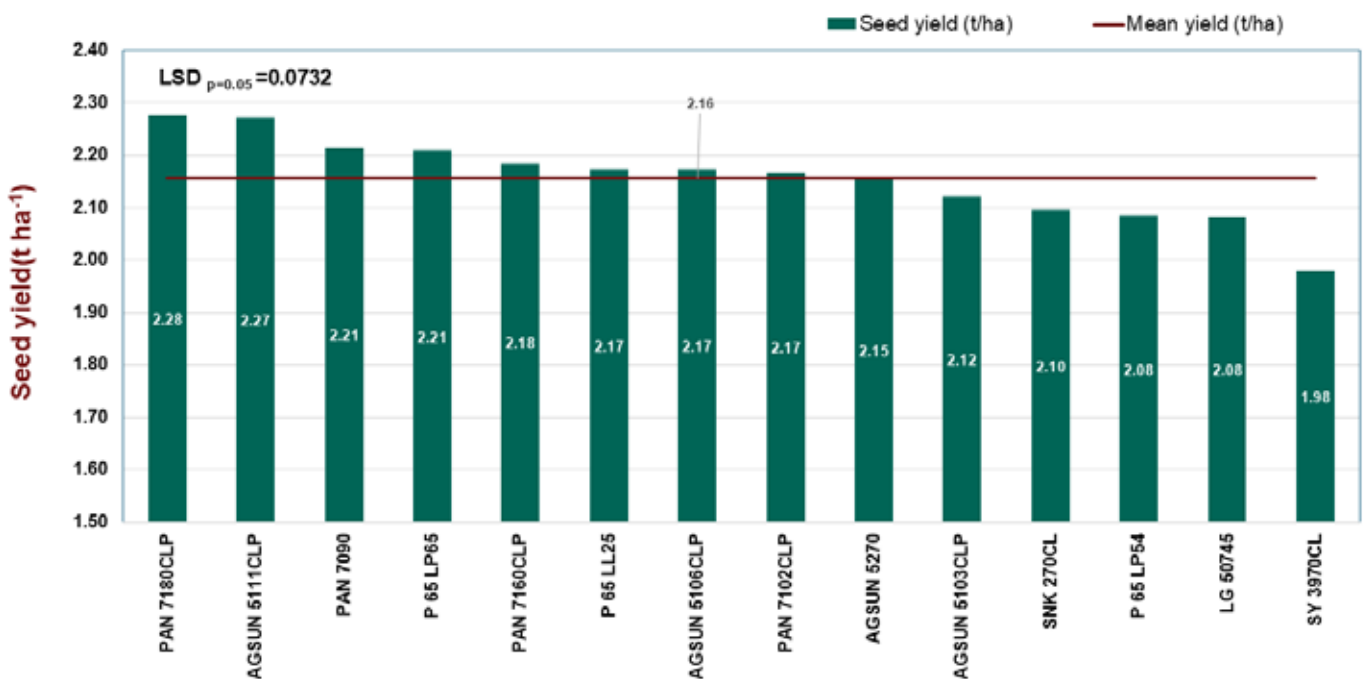
KULTIVAR CULTIVAR	DAE TOT 50% BLOMSTADIUM DAYS TO 50% FLOWERING		OPBRENGS SEED YIELD (t ha <sup>-1</sup> )	
	Gemiddeld/Mean	2023/2024	2024/2025	Gem/Mean
AGSUN 5103CLP	70	2.20	2.02	2.11
AGSUN 5106CLP	70	2.29	2.02	2.16
AGSUN 5110CLP	68	2.08	-	2.08
AGSUN 5111CLP	72	2.30	2.24	2.27
AGSUN 5270	68	2.26	2.03	2.14
AGSUN 5280	68	-	2	2.00
LG 50745	65	2.09	2.08	2.09
P 65 LL25	69	2.32	2.01	2.16
P 65 LP54	69	2.24	1.88	2.06
P 65 LP65	70	2.26	2.14	2.20
PAN 7080	69	2.26	-	2.26
PAN 7090	70	2.24	2.18	2.21
PAN 7100	68	2.18	-	2.18
PAN 7102CLP	68	2.29	2.02	2.15
PAN 7160CLP	70	2.28	2.03	2.15
PAN 7180CLP	70	2.27	2.29	2.28
SNK 242 CL	69	-	2.00	2.00
SNK 270 CL	68	2.19	1.96	2.07
SNK 441CL 	72	-	1.96	1.96
SY 3970 CL	70	2.08	1.86	1.97
<b>Mean</b>	<b>69</b>	<b>2.22</b>	<b>2.04</b>	<b>2.13</b>

**GRAFIEK 1  
GRAPH 1**



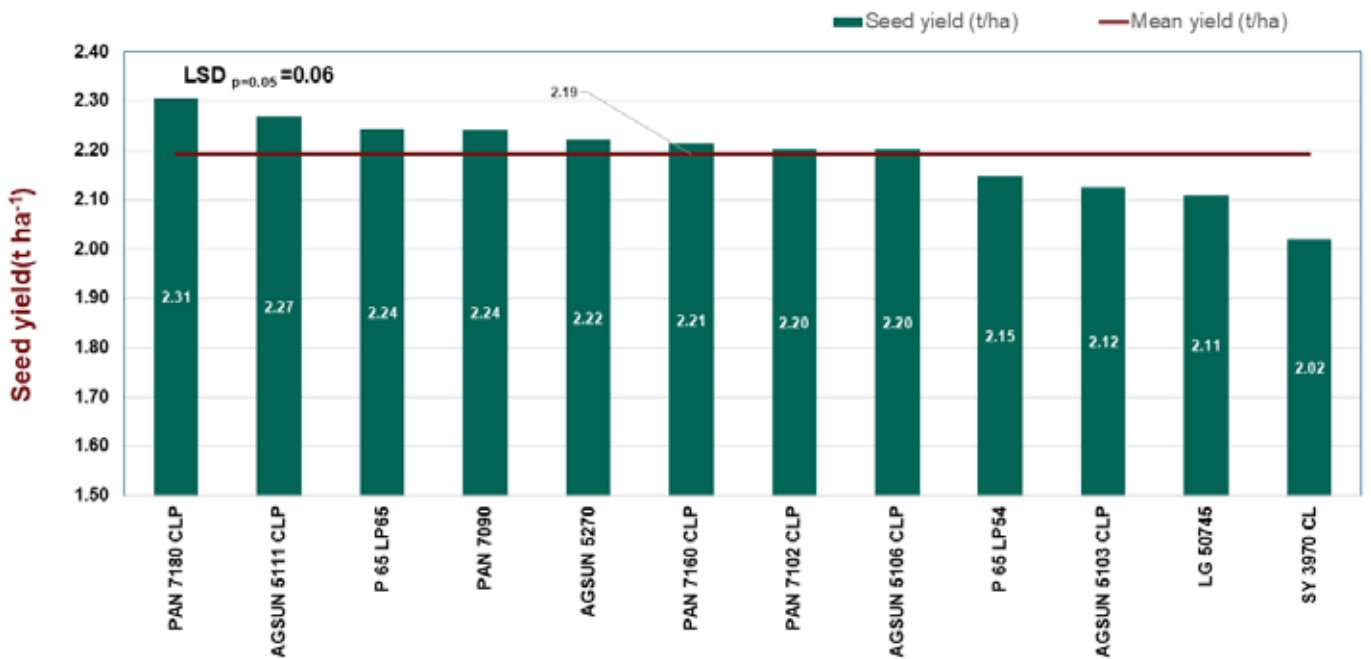
Sonneblom gemiddeldes vir een jaar (**Grafiek 1**)  
Sunflower seed yield average one year (**Graph 1**)

**GRAFIEK 2  
GRAPH 2**



Sonneblom gemiddeldes vir twee jaar (**Grafiek 2**)  
Sunflower seed yield an average for two years (**Graph 2**)

**GRAFIEK 3  
GRAPH 3**



Sonneblom gemiddeldes vir drie jaar (**Grafiek 3**)  
Sunflower seed yield an average for three years (**Graph 3**)



**TABEL 2: OPBRENGSWAARSKYNLIKHEID (%) VIR KULTIVARS GEDURENDE 2024/2025 BY VERSKILLENDE OPBRENGSPOTENSIALE**

**TABLE 2: THE YIELD PROBABILITY (%) OF CULTIVARS EVALUATED IN 2024/2025 AT DIFFERENT YIELD POTENTIALS**

KULTIVAR CULTIVAR	OPBRENGS POTENSIAAL YIELD POTENTIAL (t ha <sup>-1</sup> )						REGRESSIE LYN REGRESSION LINE	
	1	1,5	2	2,5	3	3,5	F prob	R <sup>2</sup>
AGSUN 5103CLP	34	40	46	53	58	64	<0.001	0.90
AGSUN 5106CLP	34	41	47	55	61	67	<0.001	0.88
AGSUN 5111CLP	63	66	67	69	70	71	<0.001	0.77
AGSUN 5270	65	58	50	43	35	30	<0.001	0.80
AGSUN 5280	43	44	45	47	48	50	<0.001	0.78
LG 50745	64	60	55	50	45	41	<0.001	0.83
P 65 LL25	34	39	44	50	55	60	<0.001	0.89
P 65 LP54	43	38	33	28	25	22	<0.001	0.77
P 65 LP65	69	67	65	62	59	56	<0.001	0.89
PAN 7090	71	71	71	71	71	70	<0.001	0.92
PAN 7102CLP	39	43	47	51	55	58	<0.001	0.82
PAN 7160CLP	52	50	47	45	42	41	<0.001	0.90
PAN 7180CLP	41	43	44	46	48	50	<0.001	0.80
SNK 242 CL	42	41	39	38	37	36	<0.001	0.85
SNK 270 CL	29	29	27	27	27	28	<0.001	0.85
SNK 441 CL	40	42	43	46	47	50	<0.001	0.87
SY 3970 CL	42	41	39	38	37	37	<0.001	0.87

R<sup>2</sup> dui die verskil tussen statistiese waardes van die gemiddeldes in die tabel aan. R<sup>2</sup> waarde >0.5 word aanbeveel. Hoe nader die waarde in R<sup>2</sup> aan 1 kom, bly die waarde bo die Regresie lyn. Wat die vereistes van die kultivar as n meer stabiele kultivar aandui. F prob = die waarskynlikheid dat die helling en snypunt op die y-as bydrae tot die betekenisvolheid tot die model. 'n Waarde <0,1 word aanbeveel.

R<sup>2</sup> is a statistic that explains the variation around the mean of the appropriate model. An R<sup>2</sup> of >0, 5 is recommended. The closer the R<sup>2</sup> value is to 1, the better the regression fits. The better the cultivar meets the requirements and stays above the regression line, the more stable the cultivar is. F prob = F probability (the probability that the slope and section on the y-axis contribute significantly to the model). An F prob value of <0,1 is recommended.

**TABEL 3: OPBRENGSWAARSKYNLIKHEID(%) VIR KULTIVARS GEDURENDE 2023/2024 EN 2024/2025 BY VERSKILLENDE OPBRENGSPOTENSIALE**

**TABLE 3: THE YIELD PROBABILITY (%) OF CULTIVARS EVALUATED IN 2023/2024 AND 2024/2025 AT DIFFERENT YIELD POTENTIALS**

KULTIVAR CULTIVAR	OPBRENGS POTENSIAAL YIELD POTENTIAL (t ha <sup>-1</sup> )						REGRESSIE LYN REGRESSION LINE	
	1	1,5	2	2,5	3	3,5	F prob	R <sup>2</sup>
AGSUN 5103CLP	36	41	44	48	52	56	<0.001	0.89
AGSUN 5103CLP	36	42	48	55	61	67	<0.001	0.90
AGSUN 5106CLP	58	61	63	66	68	69	<0.001	0.82
AGSUN 5111CLP	69	61	52	42	34	26	<0.001	0.85
AGSUN 5270	54	49	42	36	30	26	<0.001	0.83
LG 50745	35	42	50	58	66	72	<0.001	0.91
P 65 LL25	42	40	39	38	36	35	<0.001	0.84
P 65 LP54	65	64	60	59	55	53	<0.001	0.89
P 65 LP65	59	59	59	59	59	58	<0.001	0.89
PAN 7090	45	49	51	55	58	61	<0.001	0.85
PAN 7102CLP	55	55	54	54	52	52	<0.001	0.90
PAN 7160CLP	75	72	67	64	58	54	<0.001	0.82
PAN 7180CLP	39	41	42	43	45	46	<0.001	0.84
SNK 270 CL	27	27	26	26	25	25	<0.001	0.85

R<sup>2</sup> dui die verskil tussen statistiese waardes van die gemiddeldes in die tabel aan. R<sup>2</sup> waarde >0,5 word aanbeveel. Hoe nader die waarde in R<sup>2</sup> aan 1 kom, bly die waarde bo die Regresie lyn. Wat die vereistes van die kultivar as n meer stabiele kultivar aandui. F prob = die waarskynlikheid dat die helling en snypunt op die y-as bydrae tot die betekenisvolheid tot die model. 'n Waarde <0,1 word aanbeveel.

R<sup>2</sup> is a statistic that explains the variation around the mean of the appropriate model. R<sup>2</sup> of > 0, 5 is recommended. The closer the R<sup>2</sup> value is to 1, the better the regression fits. The better the cultivar meets the requirements and stays above the regression line, the more stable the cultivar is. F prob = F probability (the probability that the slope and section on the y-axis contribute significantly to the model). An F prob value of < 0, 1 is recommended.

**TABEL 4: OPBRENGSWAARSKYNNLIKHEID (%) VIR KULTIVARS GEDURENDE 2022/2023 TOT 2024/2025 BY VERSKILLENDE OPBRENGSPOTENSIALEE**

**TABLE 4: THE YIELD PROBABILITY (%) OF CULTIVARS EVALUATED IN 2022/2023 TO 2024/2025 AT DIFFERENT YIELD POTENTIALS**

KULTIVAR CULTIVAR	OPBRENGS POTENSIAAL YIELD POTENTIAL (t ha <sup>-1</sup> )						REGRESSIE LYN REGRESSION LINE	
	1	1,5	2	2,5	3	3,5	F prob	R <sup>2</sup>
AGSUN 5103CLP	29	33	37	42	47	52	<0.001	0.88
AGSUN 5106CLP	39	43	48	53	58	63	<0.001	0.89
AGSUN 5111CLP	55	57	60	62	64	67	<0.001	0.81
AGSUN 5270	68	64	58	53	47	42	<0.001	0.86
LG 50745	51	46	40	35	30	26	<0.001	0.82
P 65LP54	44	44	43	43	41	41	<0.001	0.86
P 65LP65	65	63	60	58	55	53	<0.001	0.88
PAN 7090	59	59	59	59	59	59	<0.001	0.90
PAN 7102CLP	38	43	49	54	59	64	<0.001	0.85
PAN 7160CLP	54	55	55	57	57	59	<0.001	0.90
PAN 7180CLP	67	66	65	64	62	61	<0.001	0.85
SY 3970 CL	35	32	28	26	23	16	<0.001	0.81

R<sup>2</sup> dui die verskil tussen statistiese waardes van die gemiddeldes in die tabel aan. 'n R<sup>2</sup> waarde >0,5 word aanbeveel. Hoe nader die waarde in R<sup>2</sup> aan 1 kom, bly die waarde bo die Regresie lyn. Wat die vereistes van die kultivar as n meer stabiele kultivar aandui. F prob = die waarskynlikheid dat die helling en snypunt op die y-as bydrae tot die betekenisvolheid tot die model. 'n Waarde <0,1 word aanbeveel.

R<sup>2</sup> is a statistic that explains the variation around the mean of the appropriate model. R<sup>2</sup> of >0,5 is recommended. The closer the R<sup>2</sup> value is to 1, the better the regression fit is. The better the cultivar meets the requirements and stays above the regression line, the more stable the cultivar is. F prob = F probability (the probability that the slope and section on the y-axis contribute significantly to the model). An F prob value of <0,1 is recommended.



## WENKE VIR OPTIMUM OPBRENGSTE IN SONNEBLOM

1. Produsent moet nie net na die opbrengs van 'n kultivar kyk nie. Bepaal eers 'n realistiese opbrengsmikpunt van elke land, en kies dan 'n kultivar met 'n goeie opbrengs, potensiaal-, stabiliteit en ook 'n goeie opbrengswaarskynlikheid. Die stabiliteit van 'n kultivar word bepaal deur hoe nader die R2 waarde aan 1 is en hoe kleiner die Fprob is (verkieslik  $<0.1$ )
2. **Plant datum:** aanplantings gedurende November tot middel Desember sal 'n aansienlike beter opbrengs lewer teenoor laat seisoen aanplantings gedurende Januarie en selfs Februarie.
3. **Plant diepte:** dit is baie moeilik om 'n aanbeveling ten opsigte van plant diepte te maak. In die meeste gevalle word bietjie dieper geplant in sanderige grond wat vinniger uitdroog. Vermoedlik swak gedreineerde gronde sowel as gronde met 'n hoë suur inhoud vir sonneblom produksie.
4. Dit word aanbeveel om drie tot vier dae na aanplanting met 'n duisendpoot oor die land te gaan om die vorming van 'n kors te voorkom, aangesien dit ook tot swak stand kan lei.

## TIPS TO OPTIMISE SUNFLOWERS YIELDS.

1. Choosing the correct hybrid is one of the key decisions every grower must take before the beginning of a season. Growers should consider not just the yield, but also yield stability, yield potential and yield probability according to a realistic yield potential for each field. The stability of a cultivar is determined by the closer the R2 value is to 1 and the smaller the F probability is (preferably  $<0.1$ )
2. **Planting date:** Plantings during November up to mid-December will benefit yield significantly as opposed to late season plantings in January or even February.
3. **Planting depth:** A general recommendation for planting depth is an extreme challenge. In most cases sandy soils that tend to dry out quicker will necessitate deeper planting depth. Avoid poorly drained soils, as well as highly acidic soils.
4. It is essential to run a millipede rotary harrow (duisendpoot) over your newly planted crop three to four days after planting, because a hard crust also causes a poor stand.

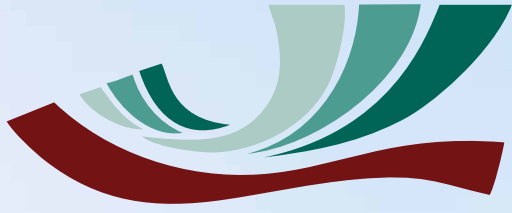


- Plant populasie:** dit word gebaseer op grond tipe, reënval en opbrengspotensiaal. 'n optimale plantestand van 35 000 tot 42 000 per hektaar met 'n rywydte van 0,91cm word aanbeveel.
- Wisselbou:** moet nie dieselfde gewas op dieselfde land plant jaar na jaar nie. 'n Twee tot drie jaar wisselbou stelsel is noodsaaklik om siektes onder beheer te hou.
- Korrekte kunsmis toediening is noodsaaklik vir 'n optimum opbrengs. Die toediening moet altyd gebaseer word op grondontledings. Indien moontlik moet die helfte van die stikstof aanbeveling tydens plant tyd toege dien word en die ander helfte 30 tot 40 dae na opkoms.
- Nog 'n baie belangrike punt om in ag te neem vir 'n goeie sonneblom opbrengs is goeie onkruid beheer, veral gedurende die eerste 45 dae. Die gebruik van "Clearfield kultivars" laat toe dat produsente kort na opkoms onkruidoder kan gebruik. Produsent moet nie nalaat om "voor-opkoms" grasdoder toe te dien met plant nie.
- Plant population:** Should be based on soil type, rainfall and yield potential. Keep to the optimal plant population of 35 000 to 42 000 plants per hectare and maintain a row width of 0,91cm.
- Crop rotation:** Do not plant the same crop in the same field year after year. A two or three-year rotation cycle is necessary to control diseases.
- Appropriate fertilisation is important and plays an important role in yields achieved. Your fertiliser programme must always be based on scientific soil analysis. If it is possible, do not apply the full nitrogen requirement in one application. Apply half during planting and the other half at 30 to 40 days after emergence.
- Another vital key to achieving a good sunflower yield is good weed control, especially in the first 45 days in the life of a young seedling. Clearfield hybrids allow growers to address the issue shortly after emergence with the application of post-emergence herbicide. Growers should not neglect to apply a "pre-emergence" grass herbicide during planting.



Handwriting practice lines consisting of 28 horizontal dotted lines.





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