MACHINERY COST

2022/2023

COMPILED BY:

COMPUTUS MANAGEMENT BUREAU, CC

CK 1989/040736/23

POSTNET SUITE 95
PRIVAATSAK X62
BETHLEHEM
9700

epos: philip@comptus.co.za
www.computus.co.za

30-Sep-2022

CONTENTS

Although we put an effort in to compile this document as accurately as possible, we do not take any responsibility for decisions taken on the grounds of information in this document.

ACKNOWLEDGEMENT

Prices of tractors, implements and components were supplied by:
AFGRI Onderdele, Bethlehem
AFGRI, Bethlehem
Batterysentrum, Bethlehem
Dicla Muldersdrif
Dormas, Johannesburg
VKB Northmec, Bethlehem
Visser Agri, Bethlehem
Valtrac Bethlehem
Van Zyl Staalwerke

NOTES TO THE CALCULATION OF MACHINERY COST

Life time of tractor =	10	year	
Hours per annum in use =	1000	hour	
Days per week =	6	days	
Hours per day in use =	10	hour	
Investment rate =	7	%	
Inflation rate =	6	%	
Real rate of financing cost =	1	%	
Discount on purchase price =	10	%	
Insurance rate =	0.5	%	
Lisence fee =	375.00	Rand per annum	6001 - 6750 kg
Diesel price (Rabat excluded) =	22.07	Rand/liter	
Marginal tax rate =	28	%	

spreading of inflation rate =	**Factor**
- Year 1	1.0000
- Year 2	1.0600
- Year 3	1.1236
- Year 4	1.1910
- Year 5	1.2625
- Year 6	1.3382
- Year 7	1.4185
- Year 8	1.5036
- Year 9	1.5938
- Year 10	1.6895
TOTAL	13.181

Cross & Perry faktor vir trekkers = 48.19% for smaller as 111 kW; 60.05% for bigger as 111 kW

Cross & Perry faktor vir implemente = 25.78% for planters; 18.86% for balers; 20.35% for other implements
24.9% for combine harvesters

Spreading of repair cost = Is used to calculate maintanance and repairs from a inflation adapted list price.

Repair cost = Total maintanance and repairs - maintanance cost

Depreciation = $\frac{\text{Purchase price + Trade value}}{\text{Life time of tractor}}$

Financing cost = $\frac{\text{Purchase price + Trade value}}{2} \times \text{rate}$

Insurance = $\frac{\text{Purchase price + Trade value}}{2} \times \text{rate}$

Trade value after useful life = Current list price x inflation factor for year 10 x Cross & Perry factor
(The assumption is that tractors and implements does not become technologicly obsolute.)

Operators cost = Computus Bestuursburo wage survey

Tractor driver level	B1	R 4 522	per month (natura included)
	B2	R 4 974	"
	B3	R 5 471	"
	B4	R 6 566	"
General worker level	A1	R 4 522	"
	A2	R 4 748	"
	A3	R 4 985	"

Prices = Prices does not include VAT.

Fuel consumption = 0.30 liter per kW-hour at 60% power for high power requirements.
(Source: Institute for Agricultural Engineering) 0.35 liter per kW-hour at 45% power for medium power requirements.
0.40 liter per kW-hour at 35% power for low power requirements.

TRACTOR COST (SUMMARISED)

MODEL:	JOHN DEERE 5090E OS	JOHN DEERE 6110M OS	JOHN DEERE 6140M OS	JOHN DEERE 6155M CAB	JOHN DEERE 8R250 CAB	JOHN DEERE 8R280 CAB	JOHN DEERE 9R590 CAB
kW	66	78	99	110	180	217	417
Annual hours in use	1000	1000	1000	1000	1000	1000	1000

PRICE:

List price	R 660 000.00	R 1 128 000.00	R 1 540 000.00	R 2 280 000.00	R 4 280 000.00	R 4 778 000.00	R 9 675 000.00
Purchase price	R 594 000.00	R 1 015 200.00	R 1 386 000.00	R 2 052 000.00	R 3 852 000.00	R 4 300 200.00	R 8 707 500.00
Trade value after life	R 537 345.54	R 918 372.38	R 1 253 806.26	R 1 856 284.60	R 4 342 197.45	R 4 847 434.44	R 9 815 598.21

PRICE PER kW:

List price	R 10 000.00	R 14 461.54	R 15 555.56	R 20 727.27	R 23 777.78	R 22 018.43	R 23 201.44
Purchase price	R 9 000.00	R 13 015.38	R 14 000.00	R 18 654.55	R 21 400.00	R 19 816.59	R 20 881.29
Trade value after life	R 8 141.60	R 11 774.00	R 12 664.71	R 16 875.31	R 24 123.32	R 22 338.41	R 23 538.60

COST OVER LIFE TIME:

Operator's cost	R 542 604.00	R 542 604.00	R 596 864.40	R 596 864.40	R 656 550.84	R 656 550.84	R 787 861.01
Fixed cost	R 145 255.37	R 245 595.55	R 333 929.21	R 492 586.75	R 128 117.36	R 142 588.14	R 284 884.15
Maintanance cost	R 265 355.68	R 289 191.32	R 263 255.16	R 380 269.43	R 525 387.68	R 981 997.40	R 1 413 538.07
Repair cost	R 288 174.32	R 656 841.77	R 1 028 314.85	R 1 531 925.13	R 3 064 170.51	R 3 025 224.34	R 6 700 708.55
TOTAL COST	**R 1 241 389.38**	**R 1 734 232.64**	**R 2 222 363.61**	**R 3 001 645.70**	**R 4 374 226.39**	**R 4 806 360.72**	**R 9 186 991.78**

COST PER kW:

Operator's cost	R 8 221.27	R 6 956.46	R 6 028.93	R 5 426.04	R 3 647.50	R 3 025.58	R 1 889.35
Fixed cost	R 2 200.84	R 3 148.66	R 3 373.02	R 4 478.06	R 711.76	R 657.09	R 683.18
Maintanance cost	R 4 020.54	R 3 707.58	R 2 659.14	R 3 456.99	R 2 918.82	R 4 525.33	R 3 389.78
Repair cost	R 4 366.28	R 8 421.05	R 10 387.02	R 13 926.59	R 17 023.17	R 13 941.13	R 16 068.85
TOTAL COST	**R 18 808.93**	**R 22 233.75**	**R 22 448.12**	**R 27 287.69**	**R 24 301.26**	**R 22 149.13**	**R 22 031.16**

COST PER ANNUM:

Operator's cost	R 54 260.40	R 54 260.40	R 59 686.44	R 59 686.44	R 65 655.08	R 65 655.08	R 78 786.10
Fixed cost	R 14 525.54	R 24 559.55	R 33 392.92	R 49 258.67	R 12 811.74	R 14 258.81	R 28 488.42
Maintanance cost	R 26 535.57	R 28 919.13	R 26 325.52	R 38 026.94	R 52 538.77	R 98 199.74	R 141 353.81
Repair cost	R 28 817.43	R 65 684.18	R 102 831.48	R 153 192.51	R 306 417.05	R 302 522.43	R 670 070.86
TOTAL COST	**R 124 138.94**	**R 173 423.26**	**R 222 236.36**	**R 300 164.57**	**R 437 422.64**	**R 480 636.07**	**R 918 699.18**

COST PER HOUR:

Operator's cost	R 54.26	R 54.26	R 59.69	R 59.69	R 65.66	R 65.66	R 78.79
Fixed cost	R 14.53	R 24.56	R 33.39	R 49.26	R 12.81	R 14.26	R 28.49
Maintanance cost	R 26.54	R 28.92	R 26.33	R 38.03	R 52.54	R 98.20	R 141.35
Repair cost	R 28.82	R 65.68	R 102.83	R 153.19	R 306.42	R 302.52	R 670.07
TOTAL COST	**R 124.14**	**R 173.42**	**R 222.24**	**R 300.16**	**R 437.42**	**R 480.64**	**R 918.70**

IMPLEMENT COST

Implement	Width	Speed	Effec-tive	Work tempo	Work capas	Work capas	Tractor model	Fuel consump	List price	Purchase Price	Trade value	Depre-ciation	Finan-cing	Operatr cost	Repair & maintain	Fuel cost	Cost of implement	Cost of implement	Cost of tractor	Cost of tractor	Cost of cultivation
	m	km/h	%	ha/h	ha/day	ha/year	kW	l/ha	R	R	R	R/year	R/year	R/year	R/year	R/year	R/year	R/ha	R/hour	R/ha	R/ha
Plough:				**1.62**	**16.24**			**17.16**													**665.90**
3 Btms (400) Dc	1.20	5.5	83	0.55	5.48	250	66	21.69	26900	24210	8324	1589	163	0	4157	119667	125576	502.30	124.14	226.61	728.92
3 Btms (450) Dc	1.35	5.5	83	0.62	6.16	250	66	19.28	26900	24210	8324	1589	163	0	4157	106371	112279	449.12	124.14	201.43	650.55
4 Btms (400) Dc	1.60	6.0	83	0.80	7.97	250	78	17.62	35600	32040	11016	2102	215	0	5501	97230	105049	420.20	173.42	217.65	637.85
4 Btms (450) Dc	1.80	6.0	83	0.90	8.96	250	78	15.66	35600	32040	11016	2102	215	0	5501	86427	94246	376.98	173.42	193.47	570.45
5 Btms (400) Dc	2.00	6.0	83	1.00	9.96	250	99	17.89	37900	34110	11727	2238	229	0	5857	98726	107050	428.20	222.24	223.13	651.33
5 Btms (450) Dc	2.25	7.5	83	1.40	14.01	250	110	14.14	37900	34110	11727	2238	229	0	5857	78005	86330	345.32	300.16	214.31	559.63
6 Btms (450) Dc	2.40	8.5	83	1.69	16.93	250	180	19.14	53800	48420	16647	3177	325	0	8314	105589	117406	469.62	437.42	258.34	727.96
8 Bts (550) WT	4.40	8.5	83	3.10	31.04	250	217	12.58	237600	213840	73520	14032	1437	0	36718	69433	121619	486.48	480.64	154.83	641.31
10 Bts (550) WT	5.50	10.0	83	4.57	45.65	250	417	16.44	297000	267300	91900	17540	1796	0	45897	90730	155963	623.85	918.70	201.25	825.10
Deep rip:				**1.00**	**10.03**			**24.49**													**859.67**
1 tine ripper Dc	0.90	5.5	78	0.39	3.86	350	66	30.77	11800	10620	3651	697	71	0	1355	237698	239822	685.21	124.14	321.52	1 006.73
1 tine ripper Dc	1.50	6.0	78	0.70	7.02	350	78	20.00	11800	10620	3651	697	71	0	1355	154504	156628	447.51	173.42	247.04	694.55
3 tine ripper Dc	1.50	6.0	78	0.70	7.02	350	99	25.38	33400	30060	10335	1973	202	0	3837	196101	202112	577.46	222.24	316.58	894.04
3 tine ripper Dc	1.50	5.8	78	0.68	6.79	350	110	29.18	33400	30060	10335	1973	202	0	3837	225404	231415	661.19	300.16	442.33	1 103.51
5 tine ripper Dc	2.50	7.0	78	1.37	13.65	350	180	23.74	0	0	0	0	0	0	0	183367	183367	523.91	437.42	320.46	844.36
7 tine ripper Dc	3.50	8.0	78	2.18	21.84	350	217	17.88	0	0	0	0	0	0	0	138162	138162	394.75	480.64	220.07	614.82
Disk:				**3.44**	**34.40**			**9.10**													**570.27**
Offset Dc	1.85	6.0	79	0.88	8.77	250	66	13.55	27300	24570	8447	1612	165	0	2292	74756	78826	315.30	124.14	141.57	456.87
Offset Dc	2.50	8.0	79	1.58	15.80	250	78	8.89	184300	165870	57028	10884	1114	0	15472	49033	76504	306.02	173.42	109.76	415.78
Offset Dc	3.00	8.0	79	1.90	18.96	250	99	9.40	192200	172980	59472	11351	1162	0	16135	51862	80510	322.04	222.24	117.21	439.26
Offset Dc	3.50	8.5	79	2.35	23.50	250	110	8.42	199900	179910	61855	11806	1209	0	16782	46487	76283	305.13	300.16	127.72	432.85
Offset Dc	4.50	8.5	79	3.02	30.22	250	180	10.72	247065	222359	76449	14591	1494	0	20741	59165	95992	383.97	437.42	144.76	528.72
Offset Baldan	5.80	9.0	79	4.12	41.24	250	217	9.47	298500	268650	92364	17629	1805	0	25059	52266	96758	387.03	480.64	116.55	503.59
Offset Baldan	6.95	9.0	79	4.94	49.41	250	217	7.90	817800	736020	253050	48297	4945	0	68654	43617	165514	662.06	480.64	97.27	759.32
Offset Baldan	8.50	13.0	79	8.73	87.30	250	217	4.47	1378300	1240470	426485	81399	8335	0	115708	24690	230132	920.53	918.70	105.24	1 025.77
Till:				**3.89**	**38.86**			**6.05**													**328.31**
Shank Tiller VZ	2.00	8.0	84	1.34	13.44	250	66	7.73	0	0	0	0	0	0	0	42678	42678	170.71	124.14	92.37	
Vibro Flex VZ	2.50	8.0	84	1.68	16.80	250	78	7.31	0	0	0	0	0	0	0	40350	40350	161.40	173.42	103.23	
Vibro 17t VZ	4.00	8.4	84	2.82	28.22	250	99	5.52	111600	100440	34532	6591	675	0	9059	30484	46809	187.24	222.24	78.74	265.98
Vibro 21t VZ	4.60	9.0	84	3.48	34.78	250	110	4.98	145000	130500	44867	8563	877	0	11770	27490	48701	194.80	300.16	86.31	281.12
Vibro 25t VZ	5.60	8.0	84	3.76	37.63	250	180	7.53	180000	162000	55697	10630	1088	0	14612	41570	67900	271.60	437.42	116.24	387.84
Vibro 31 t VZ	7.00	9.0	84	5.29	52.92	250	180	5.36	255000	229500	78904	15060	1542	0	20700	29561	66862	267.45	437.42	82.66	350.11
Vibro 45 t VZ	10.00	10.5	84	8.82	88.20	250	217	3.88	370000	333000	114488	21851	2237	0	30035	21382	75506	302.02	480.64	54.49	356.52

IMPLEMENT COST

Implement	Width	Speed	Effec-tive	Work tempo	Work capas	Work capas	Tractor model	Fuel consump	List price	Purchase Price	Trade value	Depre-ciation	Finan-cing	Operatr cost	Repair & maintain	Fuel cost	Cost of implement	Cost of implement	Cost of tractor	Cost of tractor	Cost of cultivation
	m	km/h	%	ha/h	ha/day	ha/year	kW	l/ha	R	R	R	R/year	R/year	R/year	R/year	R/year	R/year	R/ha	R/hour	R/ha	R/ha
Chisel plough:				**2.01**	**20.11**			**7.54**													**269.01**
BD 7 Tine BP	2.40	6.0	84	1.21	12.10	250	66	8.59		0	0	0	0	0	0	47420	47420	189.68	124.14	102.63	292.31
BD 9 Tine BP	3.20	6.0	84	1.61	16.13	250	66	6.45		0	0	0	0	0	0	35565	35565	142.26	124.14	76.97	219.23
BD 11 Tine BP	3.50	7.0	84	2.06	20.58	250	78	5.97		0	0	0	0	0	0	32939	32939	131.76	173.42	84.27	216.02
BD 11 Tn H BP	4.00	7.0	84	2.35	23.52	250	99	6.63		0	0	0	0	0	0	36581	36581	146.33	222.24	94.49	240.81
BD 15 Tn H BP	4.80	7.0	84	2.82	28.22	250	180	10.04		0	0	0	0	0	0	55426	55426	221.71	437.42	154.98	376.69
Drillers:				**3.25**	**32.54**			**5.68**													**1 021.36**
4 rw Jumil	3.60	7.5	65	1.76	17.55	120	66	5.92	291000	261900	114070	14783	1880	14243	32725	15688	79319	660.99	124.14	70.73	731.73
4 rw Jumil No till	3.60	8.5	65	1.99	19.89	250	78	6.18	738250	664425	289389	37504	4769	14243	83022	34082	173619	694.48	173.42	87.19	781.67
6 rw Jumil No till	5.40	8.5	65	2.98	29.84	250	99	5.23	1005130	904617	394004	51061	6493	14243	113034	28838	213670	854.68	222.24	74.49	929.17
8 rw Jumil No till	7.20	8.5	65	3.98	39.78	250	110	4.36	1349390	1214451	528951	68550	8717	14243	151749	24032	267291	1 069.16	300.16	75.46	1 144.62
6 row JD (V/D)	5.40	8.5	65	2.98	29.84	120	110	5.81	740196	666176	290152	37602	4782	14243	83240	15380	155248	1 293.74	300.16	100.61	1 394.34
6 row JD (V/L)	5.40	8.5	65	2.98	29.84	120	110	5.81	729834	656851	286090	37076	4715	14243	82075	15380	153490	1 279.08	300.16	100.61	1 379.69
8 row JD (V/D)	7.20	10.0	65	4.68	46.80	250	180	6.06	913120	821808	357937	46387	5899	14243	102687	33426	202643	810.57	437.42	93.47	904.04
8 row JD (V/L)	7.20	10.0	65	4.68	46.80	250	180	6.06	915444	823900	358848	46505	5914	14243	102948	33426	203037	812.15	437.42	93.47	905.61
Wheat plant:				**1.69**	**16.88**			**8.74**													**886.84**
13 r BD 1108	2.40	6.5	65	1.01	10.14	150	66	10.25	422351	380116	165559	21456	2728	14243	47432	33941	119800	798.67	124.14	122.42	921.09
13 r BD 1108	2.50	6.5	65	1.06	10.56	150	66	9.84	422351	380116	165559	21456	2728	14243	47432	32583	118442	789.62	124.14	117.53	907.14
13 r BD 1108	3.66	8.0	65	1.90	19.03	150	78	6.45	422351	380116	165559	21456	2728	14243	47432	21371	107230	714.87	173.42	91.12	805.99
21 r BD 113	3.20	8.0	65	1.66	16.64	150	110	10.41	450290	405261	176510	22875	2909	14243	50570	34471	125068	833.79	173.42	104.22	938.01
21 r BD 113	4.06	8.0	65	2.11	21.11	150	110	8.21	450290	405261	176510	22875	2909	14243	50570	27169	117766	785.11	222.24	105.27	890.37
21 r BD 113	4.57	8.0	65	2.38	23.76	150	110	7.29	450290	405261	176510	22875	2909	14243	50570	24137	114734	764.89	222.24	93.52	858.41
Fine seeder:				**1.19**	**11.88**			**9.44**													**643.79**
10 r Piket	1.80	8.5	65	0.99	9.95	150	78	10.98	191000	171900	74871	9703	1234	9496	21450	36354	78236	521.58	173.42	174.38	695.96
14 r Piket drag	2.50	8.5	65	1.38	13.81	150	78	7.91	313000	281700	122694	15901	2022	9496	35151	26175	88744	591.63	0.00	0.00	591.63
Spray:				**8.25**	**82.45**			**1.33**													**130.48**
600 L Dc	12.00	8.5	60	6.12	61.20	150	66	1.51	37900	34110	11727	2238	229	4748	2559	4999	14773	98.49	124.14	20.28	118.77
1000 L Dc	14.00	8.5	60	7.14	71.40	150	78	1.53	62500	56250	19339	3691	378	4748	4221	5064	18101	120.67	124.14	17.39	138.06
1500 L Dc	18.00	8.5	75	11.48	114.75	150	78	0.95	75600	68040	23393	4465	457	4748	5105	3151	17926	119.50	173.42	15.11	134.62
JD Spray M4030	30.00	12	85	30.60	306.00	2000		0.00	4250000	3825000	1608456	221654	27167	16414	212330	0	477565	238.78			238.78

IMPLEMENT COST

Implement	Width	Speed	Effec-tive	Work tempo	Work capas	Work capas	Tractor model	Fuel consump	List price	Purchase Price	Trade value	Depre-ciation	Finan-cing	Operatr cost	Repair & maintain	Fuel cost	Cost of implement	Cost of implement	Cost of tractor	Cost of tractor	Cost of cultivation
	m	km/h	%	ha/h	ha/day	ha/year	kW	l/ha	R	R	R	R/year	R/year	R/year	R/year	R/year	R/year	R/ha	R/hour	R/ha	R/ha
Cultivate:				**2.66**	**26.57**			**6.52**													**421.06**
3 row Cultiv VZ	3.00	4.0	83	1.00	9.96	250	66	9.28	0	0	0	0	0	0	0	51191	51191	204.76	124.14	124.64	
3 row Cultiv VZ	3.00	7.5	83	1.87	18.68	250	66	4.95	0	0	0	0	0	0	0	27302	27302	109.21	124.14	66.47	
4 row Cultiv VZ	4.00	4.0	83	1.33	13.28	250	78	8.22	115000	103500	35584	6792	695	0	15855	45374	68716	274.86	173.42	130.59	405.45
4 row Cultiv VZ	4.00	8.5	83	2.82	28.22	250	78	3.87	115000	103500	35584	6792	695	0	15855	21352	44694	178.78	173.42	61.45	240.23
6 row Cultiv VZ	4.60	4.0	83	1.53	15.27	250	99	9.08	170000	153000	52603	10040	1028	0	23438	50078	84584	338.33	222.24	145.52	483.85
6 row Cultiv VZ	4.60	8.5	83	3.25	32.45	250	99	4.27	170000	153000	52603	10040	1028	0	23438	23566	58072	232.29	222.24	68.48	300.77
6 row Cultiv VZ	6.50	4.0	83	2.16	21.58	250	110	7.14	225000	202500	69621	13288	1361	0	31021	39378	85047	340.19	300.16	139.09	479.28
6 row Cultiv VZ	6.50	9.0	83	4.86	48.56	250	110	3.17	225000	202500	69621	13288	1361	0	31021	17501	63170	252.68	300.16	61.82	314.50
8 row Cultiv VZ	7.20	4.0	83	2.39	23.90	250	180	10.54	335000	301500	103658	19784	2026	0	46186	58172	126168	504.67	437.42	182.99	687.66
8 row Cultiv VZ	7.20	9.0	83	5.38	53.78	250	180	4.69	335000	301500	103658	19784	2026	0	46186	25854	93850	375.40	437.42	81.33	456.73
Fertilizer Applicator:				**2.56**	**25.58**			**6.52**													**293.18**
3 row JD	4.50	7.5	60	2.03	20.25	250	78	5.39	0	0	0	0	0	9496	0	29756	39252	157.01	173.42	85.64	242.65
4 row JD	3.60	7.5	60	1.62	16.20	250	99	8.56	0	0	0	0	0	9496	0	47210	56705	226.82	222.24	137.18	364.00
6 row JD	5.40	9.0	60	2.92	29.16	250	110	5.28	0	0	0	0	0	9496	0	29142	38637	154.55	300.16	102.94	257.49
8 row JD	7.20	8.5	60	3.67	36.72	250	180	6.86	0	0	0	0	0	9496	0	37869	47364	189.46	437.42	119.12	308.58
Spread:				**9.94**	**99.36**			**1.49**													**173.69**
500 L Dc	16.00	9.0	42	6.05	60.48	150	66	1.53	19100	17190	5910	1128	116	9496	3415	5058	19212	128.08	124.14	20.53	148.60
1000 L Dc	24.00	9.0	50	10.80	108.00	150	78	1.01	35500	31950	10985	2097	215	9496	6346	3348	21501	143.34	173.42	16.06	159.40
1300 L Dc	24.00	9.0	60	12.96	129.60	150	180	1.94	44965	40469	13913	2656	272	9496	8038	6438	26899	179.33	437.42	33.75	213.08
Mow:				**1.46**	**14.57**			**9.25**													**573.70**
Slash/mow VZ	1.50	7	75	0.79	7.88	300	66	11.73	59000	53100	18256	3484	357	0	12082	77693	93617	312.06	173.42	220.22	532.28
Slash/mow VZ	1.80	7	75	0.95	9.45	300	78	11.56	65000	58500	20113	3839	393	0	13311	76516	94059	313.53	124.14	131.36	444.89
Disk mow Di 210	2.10	7	75	1.10	11.03	300	78	9.90	160000	144000	49508	9449	968	0	32765	65585	108767	362.56	173.42	157.30	519.86
Disk mow Di 250	2.45	7	75	1.29	12.86	300	78	8.49	180000	162000	55697	10630	1088	0	36861	56216	104795	349.32	173.42	134.83	484.15
Mow/Cond 2750	2.60	9	75	1.76	17.55	300	110	8.77	300000	270000	92828	17717	1814	0	61434	58104	139070	463.57	300.16	171.03	634.60
Mow/Cond 3150	3.00	9	75	2.03	20.25	300	110	7.60	450000	405000	139243	26576	2721	0	92151	50357	171805	572.68	300.16	148.23	720.91
Mow/Cond 3600	3.40	9	75	2.30	22.95	300	110	6.71	445000	400500	137695	26280	2691	0	91128	44433	164532	548.44	300.16	130.79	679.23

IMPLEMENT COST

Implement	Width	Speed	Effec-tive	Work tempo	Work capas	Work capas	Tractor model	Fuel consump	List price	Purchase Price	Trade value	Depre-ciation	Finan-cing	Operatr cost	Repair & maintain	Fuel cost	Cost of implement	Cost of implement	Cost of tractor	Cost of tractor	Cost of cultivation
	m	km/h	%	ha/h	ha/day	ha/year	kW	l/ha	R	R	R	R/year	R/year	R/year	R/year	R/year	R/year	R/ha	R/hour	R/ha	R/ha
Harrow:				**2.72**	**27.20**			**3.87**													**166.08**
4 Wheel Dc	2.60	8.5	80	1.77	17.68	200	66	5.23	16800	15120	5198	992	102	0	2723	23071	26887	134.44	124.14	70.21	204.65
8 Wheel Dc	5.40	8.5	80	3.67	36.72	200	66	2.52	33600	30240	10397	1984	203	0	5446	11108	18741	93.71	124.14	33.81	127.51
Bale:				**1.13**	**11.32**			**10.91**													**616.36**
1.2 m Dia Claas	1.70	6.8	60	0.69	6.94	200	66	14.99	620000	558000	177799	38020	3679	0	52251	66159	160109	800.54	124.14	178.98	979.52
1.2 m Dia Claas	3.40	6.8	60	1.39	13.87	200	74	8.40	620000	558000	177799	38020	3679	0	52251	37089	131039	655.20	173.42	125.02	780.21
1.5 m Dia Masc	2.00	6.8	60	0.82	8.16	200	66	12.74	0	0	0	0	0	0	0	56235	56235	281.17	124.14	152.13	433.31
1.5 m Dia Masc	4.00	6.8	60	1.63	16.32	200	78	7.53	0	0	0	0	0	0	0	33230	33230	166.15	173.42	106.26	272.41
Potatoes:				**0.54**	**5.40**			**23.83**													**1 069.62**
Planter Dc	1.50	6	60	0.54	5.40	100	78	22.75	105200	94680	32552	6213	636	14243	11814	50214	83121	831.21	173.42	321.15	1 152.36
Ridger Dormas	1.50	6	60	0.54	5.40	100	78	22.75	88384	79546	27349	5220	534	0	7449	50214	63417	634.17	173.42	321.15	955.32
Lifter Dc	1.50	6	60	0.54	5.40	100	78	26.00	138000	124200	42701	8150	835	0	11630	57387	78002	780.02	173.42	321.15	1 101.17
Sort:	Cap/d	Pwr/h		Bag/ha	ha/day	ha/year										Power					**2 538.69**
Wash & pack	4800	60		2000	2	100			1839113	1655202	569073	108613	11121	0	129187	25000	273922	2 739.22	0.00	0.00	2 739.22
Wash & pack	16000	100		2000	8	300			4905491	4414942	1517897	289705	29664	0	344583	37500	701452	2 338.17	0.00	0.00	2 338.17
Silage:								**22.52**													**1 001.52**
Silage ST	0.90	6.8	60	0.37	3.67	200	66	28.31	107642	96878	33307	6357	651	14243	12053	124966	158270	791.35	124.14	338.07	1 129.42
Silage ST	1.80	6.8	60	0.73	7.34	200	78	16.73	222560	200304	68866	13144	1346	14243	24920	73844	127497	637.48	173.42	236.14	873.63
Harvest:				**1.10**	**11.02**			**11.26**													**407.89**
Bean cutter 36"	5.40	5	60	1.62	16.20	300	78	7.58	1282250	1269428	411736	85769	50435	4522	143572	853125	1137423	3 791.41	124.14	76.63	3 868.04
Trail harvest BP	1.80	6.8	60	0.73	7.34	300	66	14.15		0	0	0	0	4748	0	93725	98473	328.24	124.14	169.03	497.28
Trail harvest BP	3.60	6.8	60	1.47	14.69	300	78	8.36		0	0	0	0	4748	0	55383	60131	200.44	173.42	118.07	318.51
Claas 560 8row	7.28	8.0	65	3.79	37.86	1000	142	6.75	6065000	5458500	2295361	316314	38769	16414	237202	149028	757727	757.73			757.73
Claas 560 25ft	7.60	8.0	65	3.95	39.52	1000	142	6.47	5540000	4986000	2096669	288933	35413	16414	216670	142753	700183	700.18			700.18
Transport:				**km/h**		**h/year**		**l/ha**										**R/h**	**R/h**		**R/km**
10 Ton flat VZ				12		500	78	10.92	165000	148500	51056	9744	998	4748	3847	120513	139850	279.70	173.42		37.76
10 Ton bin VZ				12		500	78	10.92	190000	171000	58791	11221	1149	4748	4430	120513	142061	284.12	173.42		38.13

IMPLEMENT COST

Implement	Width	Speed	Effec-tive	Work tempo	Work capas	Work capas	Tractor model	Fuel consump	List price	Purchase Price	Trade value	Depre-ciation	Finan-cing	Operatr cost	Repair & maintain	Fuel cost	Cost of implement	Cost of implement	Cost of tractor	Cost of tractor	Cost of cultivation
	m	km/h	%	ha/h	ha/day	ha/year	kW	l/ha	R	R	R	R/year	R/year	R/year	R/year	R/year	R/year	R/ha	R/hour	R/ha	R/ha
Deep Chisel:				**2.12**	**21.17**			**16.56**													**749.33**
(Broad)																					
Super 19 5 tine	2.00	7.0	84	1.18	11.76	250	110	14.73	158000	142200	48890	9331	955	0	10645	81292	102224	408.89	300.16	255.24	664.14
Super 19 7 tine	2.80	7.0	84	1.65	16.46	250	180	17.22	206400	185760	63866	12189	1248	0	13906	95017	122360	489.44	437.42	265.68	755.13
Super 19 9 tine	3.60	7.0	84	2.12	21.17	250	217	16.15	258770	232893	80071	15282	1565	0	17434	89093	123374	493.50	480.64	227.06	720.55
Super 19 11 tine	4.40	7.0	84	2.59	25.87	250	217	13.21	319066	287159	98728	18843	1929	0	21497	72894	115163	460.65	480.64	185.77	646.43
Super 19 13 tine	5.20	7.0	84	3.06	30.58	250	417	21.48	350660	315594	108504	20709	2120	0	23626	118527	164982	659.93	918.70	300.46	960.39
Rolmoer:				**8.46**	**84.60**			**2.80**													**233.56**
Rolmoer VZ	6.00	12.0	94	6.77	67.68	250	99	3.22	330000	297000	102111	19489	1996	0	9851	17757	49092	196.37	222.24	32.84	229.21
Rolmoer VZ	9.00	12.0	94	10.15	101.52	250	110	2.38	410000	369000	126866	24213	2479	0	12239	13154	52085	208.34	300.16	29.57	237.91
Harrow:				**1.88**	**18.81**			**8.69**													**276.68**
3 row Single VZ	2.30	7.5	85	1.47	14.66	250	66	9.90		0	0	0	0	0	0	54644	54644	218.57	124.14	84.66	
4 row Single VZ	3.60	7.5	85	2.30	22.95	250	78	7.48	95000	85500	29396	5610	574	0	2836	41259	50279	201.12	173.42	75.57	276.68
6 row Single VZ	5.40	9.0	85	4.13	41.31	250	99	5.27	150000	135000	46414	8859	907	0	4478	29093	43336	173.34	222.24	53.80	227.14
8 row Single VZ	7.20	8.5	85	5.20	52.02	250	110	4.65	195000	175500	60338	11516	1179	0	5821	25670	44186	176.74	300.16	57.70	234.45

BP = BP Implemente BO = Big Ox FC = Falcon JD = John Deere JS = John Shearer Ra = Radium WT = Wilton GT= GC Tillage
AP = Agriponent ST = Staalmeester Bn = Baldan Cl = Claas SM = Soilmaster VZ = Van Zyl Staalwerke

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE			JOHN DEERE		
DETAILS	5090E OS			6110M OS		
kW	66			78		
Annual hours in use	1000			1000		
PRICE:	**Per kW**	**Total**	**Per hour**	**Per kW**	**Total**	**Per hour**
List price	R 10 000.00	R 660 000.00	R 66.00	R 14 461.54	R 1 128 000.00	R 112.80
Purchase price	R 9 000.00	R 594 000.00	R 59.40	R 13 015.38	R 1 015 200.00	R 101.52
Trade value after life	R 8 141.60	R 537 345.54	R 53.73	R 11 774.00	R 918 372.38	R 91.84
COST:	**Per kW**	**Per Year**	**Per hour**	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 8 221.27	R 54 260.40	R 54.26	R 6 956.46	R 54 260.40	R 54.26
Fixed cost	R 2 200.84	R 14 525.54	R 14.53	R 3 148.66	R 24 559.55	R 24.56
Maintanance cost	R 4 020.54	R 26 535.57	R 26.54	R 3 707.58	R 28 919.13	R 28.92
Repair cost	R 4 366.28	R 28 817.43	R 28.82	R 8 421.05	R 65 684.18	R 65.68
TOTAL COST	**R 18 808.93**	**R 124 138.94**	**R 124.14**	**R 22 233.75**	**R 173 423.26**	**R 173.42**

FIXED COST:	Per kW	Cost per Year	Cost per hour	Per kW	Cost per Year	Cost per hour
- Depreciation	R 858.40	R 5 665.45	R 5.67	R 1 241.38	R 9 682.76	R 9.68
- Lisence	R 56.82	R 375.00	R 0.38	R 48.08	R 375.00	R 0.38
- Insurance	R 428.54	R 2 828.36	R 2.83	R 619.73	R 4 833.93	R 4.83
- Financing cost	R 857.08	R 5 656.73	R 5.66	R 1 239.47	R 9 667.86	R 9.67
TOTAL	**R 2 200.84**	**R 14 525.54**	**R 14.53**	**R 3 148.66**	**R 24 559.55**	**R 24.56**

MAINTANANCE	Hours	Price	Cost/hour	Hours	Price	Cost/hour
Oil:			**R 10.12**			**R 9.46**
- Machine oil	150	R 1 133.42	R 7.56	150	R 906.73	R 6.04
- Transmission oil	1500	R 3 840.93	R 2.56	1500	R 5 121.24	R 3.41
Filters:			**R 4.71**			**R 7.75**
- Air filter (primary)	600	R 729.03	R 1.22	600	R 472.53	R 0.79
- Air filter (sekondary)	600	R 284.37	R 0.47	600	R 1 619.55	R 2.70
- Diesel filter	450	R 409.09	R 0.91	450	R 409.09	R 0.91
- Hidrolic oil filter	450	R 584.47	R 1.30	450	R 704.07	R 1.56
- Oil filter	150	R 122.10	R 0.81	150	R 268.75	R 1.79
- Transmission oil filter	1500	R -	R -	1500	R -	R -
- Air conditioner filter	750	R -	R -	750	R -	R -
Tyres:			**R 10.63**			**R 10.63**
- Set at front	3000	R 13 043.48	R 4.35	3000	R 13 043.48	R 4.35
- Set at rear	4000	R 25 130.44	R 6.28	4000	R 25 130.44	R 6.28
Battery:	2000	R 2 155.00	**R 1.08**	2000	R 2 155.00	**R 1.08**
TOTAL			**R 26.54**			**R 28.92**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time	Factor	List Price	Cost/life time
- Year 1	0.0150	R 660 000.00	R 9 900.00	0.0150	R 1 128 000.00	R 16 920.00
- Year 2	0.0305	R 699 600.00	R 21 337.80	0.0305	R 1 195 680.00	R 36 468.24
- Year 3	0.0415	R 741 576.00	R 30 775.40	0.0415	R 1 267 420.80	R 52 597.96
- Year 4	0.0508	R 786 070.56	R 39 932.38	0.0508	R 1 343 466.05	R 68 248.08
- Year 5	0.0592	R 833 234.79	R 49 327.50	0.0592	R 1 424 074.01	R 84 305.18
- Year 6	0.0667	R 883 228.88	R 58 911.37	0.0667	R 1 509 518.45	R 100 684.88
- Year 7	0.0738	R 936 222.61	R 69 093.23	0.0738	R 1 600 089.56	R 118 086.61
- Year 8	0.0804	R 992 395.97	R 79 788.64	0.0804	R 1 696 094.93	R 136 366.03
- Year 9	0.0866	R 1 051 939.73	R 91 097.98	0.0866	R 1 797 860.63	R 155 694.73
- Year 10	0.0927	R 1 115 056.11	R 103 365.70	0.0927	R 1 905 732.27	R 176 661.38
TOTAL			**R 553 530.00**			**R 946 033.09**

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE			JOHN DEERE		
DETAILS	6140M OS			6155M CAB		
kW	99			110		
Annual hours in use	1000			1000		
PRICE:	**Total**	**Per hour**	**Per hour**	**Per kW**	**Total**	**Per hour**
List price	R 15 555.56	R 1 540 000.00	R 154.00	R 20 727.27	R 2 280 000.00	R 228.00
Purchase price	R 14 000.00	R 1 386 000.00	R 138.60	R 18 654.55	R 2 052 000.00	R 205.20
Trade value after life	R 12 664.71	R 1 253 806.26	R 125.38	R 16 875.31	R 1 856 284.60	R 185.63
COST:	**Per kW**	**Per Year**	**Per hour**	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 6 028.93	R 59 686.44	R 59.69	R 5 426.04	R 59 686.44	R 59.69
Fixed cost	R 3 373.02	R 33 392.92	R 33.39	R 4 478.06	R 49 258.67	R 49.26
Maintanance cost	R 2 659.14	R 26 325.52	R 26.33	R 3 456.99	R 38 026.94	R 38.03
Repair cost	R 10 387.02	R 102 831.48	R 102.83	R 13 926.59	R 153 192.51	R 153.19
TOTAL COST	**R 22 448.12**	**R 222 236.36**	**R 222.24**	**R 27 287.69**	**R 300 164.57**	**R 300.16**

FIXED COST:	Per kW	Cost per Year	Cost per hour	Per kW	Cost per Year	Cost per hour
- Depreciation	R 1 335.29	R 13 219.37	R 13.22	R 1 779.23	R 19 571.54	R 19.57
- Lisence	R 37.88	R 375.00	R 0.38	R 34.09	R 375.00	R 0.38
- Insurance	R 666.62	R 6 599.52	R 6.60	R 888.25	R 9 770.71	R 9.77
- Financing cost	R 1 333.24	R 13 199.03	R 13.20	R 1 776.49	R 19 541.42	R 19.54
TOTAL	**R 3 373.02**	**R 33 392.92**	**R 33.39**	**R 4 478.06**	**R 49 258.67**	**R 49.26**

MAINTANANCE	Hours	Price	Cost/hour	Hours	Price	Cost/hour
Oil:			**R 9.46**			**R 8.43**
- Machine oil	150	R 906.73	R 6.04	150	R 906.73	R 6.04
- Transmission oil	1500	R 5 121.24	R 3.41	1500	R 3 584.87	R 2.39
Filters:			**R 13.06**			**R 11.37**
- Air filter (primary)	600	R 1 451.51	R 2.42	600	R 1 451.51	R 2.42
- Air filter (sekondary)	600	R 2 454.47	R 4.09	600	R 2 454.47	R 4.09
- Diesel filter	450	R 409.09	R 0.91	450	R 409.09	R 0.91
- Hidrolic oil filter	450	R 704.07	R 1.56	450	R 675.00	R 1.50
- Oil filter	150	R 268.75	R 1.79	150	R 268.75	R 1.79
- Transmission oil filter	1500	R 475.93	R 0.32	1500	R 475.93	R 0.32
- Air conditioner filter	750	R 1 479.15	R 1.97	750	R 255.66	R 0.34
Tyres:			**R 2.72**			**R 16.07**
- Set at front	3000	R 3 062.00	R 1.02	3000	R 19 033.04	R 6.34
- Set at rear	4000	R 6 814.00	R 1.70	4000	R 38 895.66	R 9.72
Battery:	2000	R 2 155.00	**R 1.08**	2000	R 4 310.00	**R 2.16**
TOTAL			**R 26.33**			**R 38.03**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time	Factor	List Price	Cost/life time
- Year 1	0.0150	R 1 540 000.00	R 23 100.00	0.0150	R 2 280 000.00	R 34 200.00
- Year 2	0.0305	R 1 632 400.00	R 49 788.20	0.0305	R 2 416 800.00	R 73 712.40
- Year 3	0.0415	R 1 730 344.00	R 71 809.28	0.0415	R 2 561 808.00	R 106 315.03
- Year 4	0.0508	R 1 834 164.64	R 93 175.56	0.0508	R 2 715 516.48	R 137 948.24
- Year 5	0.0592	R 1 944 214.52	R 115 097.50	0.0592	R 2 878 447.47	R 170 404.09
- Year 6	0.0667	R 2 060 867.39	R 137 459.85	0.0667	R 3 051 154.32	R 203 511.99
- Year 7	0.0738	R 2 184 519.43	R 161 217.53	0.0738	R 3 234 223.58	R 238 685.70
- Year 8	0.0804	R 2 315 590.60	R 186 173.48	0.0804	R 3 428 276.99	R 275 633.47
- Year 9	0.0866	R 2 454 526.03	R 212 561.95	0.0866	R 3 633 973.61	R 314 702.11
- Year 10	0.0927	R 2 601 797.60	R 241 186.64	0.0927	R 3 852 012.03	R 357 081.51
TOTAL			**R 1 291 570.00**			**R 1 912 194.55**

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE			JOHN DEERE		
DETAILS	8R250 CAB			8R280 CAB		
kW	180			217		
Annual hours in use	1000			1000		
PRICE:	**Per kW**	**Total**	**Per hour**	**Per kW**	**Total**	**Per hour**
List price	R 23 777.78	R 4 280 000.00	R 428.00	R 22 018.43	R 4 778 000.00	R 477.80
Purchase price	R 21 400.00	R 3 852 000.00	R 385.20	R 19 816.59	R 4 300 200.00	R 430.02
Trade value after life	R 24 123.32	R 4 342 197.45	R 434.22	R 22 338.41	R 4 847 434.44	R 484.74
COST:	**Per kW**	**Per Year**	**Per hour**	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 3 647.50	R 65 655.08	R 65.66	R 3 025.58	R 65 655.08	R 65.66
Fixed cost	R 711.76	R 12 811.74	R 12.81	R 657.09	R 14 258.81	R 14.26
Maintanance cost	R 2 918.82	R 52 538.77	R 52.54	R 4 525.33	R 98 199.74	R 98.20
Repair cost	R 17 023.17	R 306 417.05	R 306.42	R 13 941.13	R 302 522.43	R 302.52
TOTAL COST	**R 24 301.26**	**R 437 422.64**	**R 437.42**	**R 22 149.13**	**R 480 636.07**	**R 480.64**

FIXED COST:	Per kW	Cost per Year	Cost per hour	Per kW	Cost per Year	Cost per hour
- Depreciation	R -2 723.32	R -49 019.75	R -49.02	R -2 521.82	R -54 723.44	R -54.72
- Lisence	R 20.83	R 375.00	R 0.38	R 17.28	R 375.00	R 0.38
- Insurance	R 1 138.08	R 20 485.49	R 20.49	R 1 053.87	R 22 869.09	R 22.87
- Financing cost	R 2 276.17	R 40 970.99	R 40.97	R 2 107.75	R 45 738.17	R 45.74
TOTAL	**R 711.76**	**R 12 811.74**	**R 12.81**	**R 657.09**	**R 14 258.81**	**R 14.26**

MAINTANANCE	Hours	Price	Cost/hour	Hours	Price	Cost/hour
Oil:			**R 16.95**			**R 20.42**
- Machine oil	150	R 1 889.03	R 12.59	150	R 2 115.71	R 14.10
- Transmission oil	1500	R 6 529.58	R 4.35	1500	R 9 474.29	R 6.32
Filters:			**R 7.65**			**R 7.54**
- Air filter (primary)	600	R 687.23	R 1.15	600	R 371.12	R 0.62
- Air filter (sekondary)	600	R 378.07	R 0.63	600	R 873.76	R 1.46
- Diesel filter	450	R 622.29	R 1.38	450	R 622.29	R 1.38
- Hidrolic oil filter	450	R 647.87	R 1.44	450	R 647.87	R 1.44
- Oil filter	150	R 321.58	R 2.14	150	R 321.58	R 2.14
- Transmission oil filter	1500	R -	R -	1500	R -	R -
- Air conditioner filter	750	R 677.32	R 0.90	750	R 373.89	R 0.50
Tyres:			**R 25.79**			**R 68.08**
- Set at front	3000	R 19 033.04	R 6.34	3000	R 54 252.18	R 18.08
- Set at rear	4000	R 77 791.32	R 19.45	4000	R 200 000.00	R 50.00
Battery:	2000	R 4 310.00	**R 2.16**	2000	R 4 310.00	**R 2.16**
TOTAL			**R 52.54**			**R 98.20**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time	Factor	List Price	Cost/life time
- Year 1	0.0150	R 4 280 000.00	R 64 200.00	0.0150	R 4 778 000.00	R 71 670.00
- Year 2	0.0305	R 4 536 800.00	R 138 372.40	0.0305	R 5 064 680.00	R 154 472.74
- Year 3	0.0415	R 4 809 008.00	R 199 573.83	0.0415	R 5 368 560.80	R 222 795.27
- Year 4	0.0508	R 5 097 548.48	R 258 955.46	0.0508	R 5 690 674.45	R 289 086.26
- Year 5	0.0592	R 5 403 401.39	R 319 881.36	0.0592	R 6 032 114.91	R 357 101.20
- Year 6	0.0667	R 5 727 605.47	R 382 031.28	0.0667	R 6 394 041.81	R 426 482.59
- Year 7	0.0738	R 6 071 261.80	R 448 059.12	0.0738	R 6 777 684.32	R 500 193.10
- Year 8	0.0804	R 6 435 537.51	R 517 417.22	0.0804	R 7 184 345.38	R 577 621.37
- Year 9	0.0866	R 6 821 669.76	R 590 756.60	0.0866	R 7 615 406.10	R 659 494.17
- Year 10	0.0927	R 7 230 969.94	R 670 310.91	0.0927	R 8 072 330.47	R 748 305.03
TOTAL			**R 3 589 558.19**			**R 4 007 221.74**

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE		
DETAILS	9R590 CAB		
kW	417		
Annual hours in use	1000		
PRICE:	**Per kW**	**Total**	**Per hour**
List price	R 23 201.44	R 9 675 000.00	R 967.50
Purchase price	R 20 881.29	R 8 707 500.00	R 870.75
Trade value after life	R 23 538.60	R 9 815 598.21	R 981.56
COST:	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 1 889.35	R 78 786.10	R 78.79
Fixed cost	R 683.18	R 28 488.42	R 28.49
Maintanance cost	R 3 389.78	R 141 353.81	R 141.35
Repair cost	R 16 068.85	R 670 070.86	R 670.07
TOTAL COST	**R 22 031.16**	**R 918 699.18**	**R 918.70**

FIXED COST:	Per kW/Year	Cost per Year	Cost per hour
- Depreciation	R -2 657.31	R -110 809.82	R -110.81
- Lisence	R 8.99	R 375.00	R 0.38
- Insurance	R 1 110.50	R 46 307.75	R 46.31
- Financing cost	R 2 220.99	R 92 615.49	R 92.62
TOTAL	**R 683.18**	**R 28 488.42**	**R 28.49**

MAINTANANCE	Hours	Price	Cost/hour
Oil:			**R 27.13**
- Machine oil	150	R 3 173.56	R 21.16
- Transmission oil	1500	R 8 962.17	R 5.97
Filters:			**R 12.07**
- Air filter (primary)	600	R 1 399.48	R 2.33
- Air filter (sekondary)	600	R 1 213.96	R 2.02
- Diesel filter	450	R 273.38	R 0.61
- Hidrolic oil filter	450	R 1 287.58	R 2.86
- Oil filter	150	R 488.08	R 3.25
- Transmission oil filter	1500	R 675.00	R 0.45
- Air conditioner filter	750	R 403.91	R 0.54
Tyres:			**R 100.00**
- Set at front	4000	R 200 000.00	R 50.00
- Set at rear	4000	R 200 000.00	R 50.00
Battery:	2000	R 4 310.00	**R 2.16**
TOTAL			**R 141.35**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time
- Year 1	0.0150	R 9 675 000.00	R 145 125.00
- Year 2	0.0305	R 10 255 500.00	R 312 792.75
- Year 3	0.0415	R 10 870 830.00	R 451 139.45
- Year 4	0.0508	R 11 523 079.80	R 585 372.45
- Year 5	0.0592	R 12 214 464.59	R 723 096.30
- Year 6	0.0667	R 12 947 332.46	R 863 587.08
- Year 7	0.0738	R 13 724 172.41	R 1 012 843.92
- Year 8	0.0804	R 14 547 622.76	R 1 169 628.87
- Year 9	0.0866	R 15 420 480.12	R 1 335 413.58
- Year 10	0.0927	R 16 345 708.93	R 1 515 247.22
TOTAL		**R**	**8 114 246.62**

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 5090E OS **66 kW** **Optimal replacement takes place in the** **8** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	9900	66000	10390	65347	10390	65347	660000	430769	19906059
2	1.124	0.980	1.101	0.031	20130	66000	22172	64700	32563	130046		401971	10367330
3	1.191	0.971	1.156	0.042	27390	66000	31663	64059	64225	194105		377793	7316186
4	1.262	0.961	1.213	0.051	33528	66000	40677	63425	104902	257530		356482	5918320
5	1.338	0.951	1.273	0.059	39072	66000	49749	62797	154651	320326		337252	5197194
6	1.419	0.942	1.336	0.067	44022	66000	58827	62175	213478	382501		319655	4821801
7	1.504	0.933	1.402	0.074	48708	66000	68311	61559	281789	444061		303400	4652728
8	1.594	0.923	1.472	0.080	53064	66000	78104	60950	359894	505011		288283	**4618576**
9	1.689	0.914	1.545	0.087	57156	66000	88292	60346	448186	565357		274155	4680010
10	1.791	0.905	1.621	0.093	61182	66000	99190	59749	547376	625106		260898	4815647

JOHN DEERE 6110M OS **78 kW** **Optimal replacement takes place in the** **8** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	16920	112800	17758	111683	17758	111683	1128000	712961	36487026
2	1.124	0.980	1.101	0.031	34404	112800	37895	110577	55652	222261		664908	18953890
3	1.191	0.971	1.156	0.042	46812	112800	54114	109483	109766	331743		624583	13333409
4	1.262	0.961	1.213	0.051	57302	112800	69520	108399	179287	440142		589052	10743306
5	1.338	0.951	1.273	0.059	66778	112800	85026	107325	264313	547467		557001	9391253
6	1.419	0.942	1.336	0.067	75238	112800	100541	106263	364854	653730		527683	8670603
7	1.504	0.933	1.402	0.074	83246	112800	116750	105211	481604	758940		500611	8325613
8	1.594	0.923	1.472	0.080	90691	112800	133488	104169	615091	863109		475444	**8225555**
9	1.689	0.914	1.545	0.087	97685	112800	150899	103138	765991	966247		451930	8298384
10	1.791	0.905	1.621	0.093	104566	112800	169525	102116	935516	1068363		429875	8504669

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 6140M OS **99 kW** **Optimal replacement takes place in the** **8** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	23100	154000	24244	152475	24244	152475	1540000	919587	55514774
2	1.124	0.980	1.101	0.031	46970	154000	51736	150966	75979	303441		856709	28730828
3	1.191	0.971	1.156	0.042	63910	154000	73879	149471	149858	452912		803981	20118769
4	1.262	0.961	1.213	0.051	78232	154000	94912	147991	244771	600903		757555	16117640
5	1.338	0.951	1.273	0.059	91168	154000	116082	146526	360853	747428		715705	13995141
6	1.419	0.942	1.336	0.067	102718	154000	137263	145075	498116	892503		677446	12828367
7	1.504	0.933	1.402	0.074	113652	154000	159393	143639	657508	1036142		642141	12227756
8	1.594	0.923	1.472	0.080	123816	154000	182244	142216	839752	1178358		609342	**11994699**
9	1.689	0.914	1.545	0.087	133364	154000	206015	140808	1045767	1319167		578717	12019691
10	1.791	0.905	1.621	0.093	142758	154000	231444	139414	1277211	1458581		550008	12242233

JOHN DEERE 6155M CAB **110 kW** **Optimal replacement takes place in the** **9** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	34200	228000	35893	225743	35893	225743	2280000	1321082	86471474
2	1.124	0.980	1.101	0.031	69540	228000	76596	223507	112489	449250		1230059	44678354
3	1.191	0.971	1.156	0.042	94620	228000	109380	221295	221868	670545		1153761	31222804
4	1.262	0.961	1.213	0.051	115824	228000	140519	219104	362388	889648		1086607	24949728
5	1.338	0.951	1.273	0.059	134976	228000	171862	216934	534249	1106582		1026092	21599525
6	1.419	0.942	1.336	0.067	152076	228000	203221	214786	737470	1321369		970791	19734680
7	1.504	0.933	1.402	0.074	168264	228000	235984	212660	973454	1534028		919776	18748081
8	1.594	0.923	1.472	0.080	183312	228000	269815	210554	1243269	1744583		872398	18330560
9	1.689	0.914	1.545	0.087	197448	228000	305009	208469	1548279	1953052		828175	**18311619**
10	1.791	0.905	1.621	0.093	211356	228000	342657	206405	1890936	2159457		786734	18596684

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 8R250 CAB **180 kW** **Optimal replacement takes place in the** **9** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	64200	428000	67378	423762	67378	423762	4280000	2936797	113895302
2	1.124	0.980	1.101	0.031	130540	428000	143785	419567	211163	843329		2485621	73999958
3	1.191	0.971	1.156	0.042	177620	428000	205327	415413	416490	1258742		2191101	57618024
4	1.262	0.961	1.213	0.051	217424	428000	263782	411300	680272	1670041		1969926	49007085
5	1.338	0.951	1.273	0.059	253376	428000	322618	407227	1002889	2077269		1792450	44054651
6	1.419	0.942	1.336	0.067	285476	428000	381484	403195	1384373	2480464		1644343	41150515
7	1.504	0.933	1.402	0.074	315864	428000	442988	399203	1827361	2879667		1517481	39552688
8	1.594	0.923	1.472	0.080	344112	428000	506496	395251	2333857	3274918		1406775	38851343
9	1.689	0.914	1.545	0.087	370648	428000	572561	391337	2906418	3666256		1308806	**38807785**
10	1.791	0.905	1.621	0.093	396756	428000	643233	387463	3549651	4053718		1221160	39286307

JOHN DEERE 8R280 CAB **217 kW** **Optimal replacement takes place in the** **9** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	71670	477800	75218	473069	75218	473069	4778000	2892628	168050920
2	1.124	0.980	1.101	0.031	145729	477800	160515	468385	235733	941455		2423723	102237633
3	1.191	0.971	1.156	0.042	198287	477800	229217	463748	464950	1405203		2119173	77170340
4	1.262	0.961	1.213	0.051	242722	477800	294475	459156	759425	1864359		1891439	64276393
5	1.338	0.951	1.273	0.059	282858	477800	360156	454610	1119581	2318969		1709406	56830743
6	1.419	0.942	1.336	0.067	318693	477800	425872	450109	1545452	2769079		1558050	52339904
7	1.504	0.933	1.402	0.074	352616	477800	494531	445653	2039984	3214731		1428859	49682588
8	1.594	0.923	1.472	0.080	384151	477800	565429	441240	2605413	3655972		1316505	48257033
9	1.689	0.914	1.545	0.087	413775	477800	639182	436872	3244595	4092843		1217411	**47717708**
10	1.791	0.905	1.621	0.093	442921	477800	718077	432546	3962671	4525389		1129053	47866250

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 9R590 CAB **417 kW** **Optimal replacement takes place in the** **10** **th year**

Year	(1) Inflation factor	(2) Interest factor	(3) Current value factor	(4) Repair factor	(5) Annual repair cost	(6) Annual depreciation	(7) Adapted repair cost	(8) Adapted depreciation	(9) Total repair cost	(10) Total depreciation	(11) Purchase price	(12) Resale value	(13) Replacement cost
	6	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.060	0.990	1.050	0.015	23100	154000	24244	152475	24244	152475	9675000	2540376	705346173
2	1.124	0.980	1.101	0.031	46970	154000	51736	150966	75979	303441		1953879	380259795
3	1.191	0.971	1.156	0.042	63910	154000	73879	149471	149858	452912		1589297	265858985
4	1.262	0.961	1.213	0.051	78232	154000	94912	147991	244771	600903		1326939	206898789
5	1.338	0.951	1.273	0.059	91168	154000	116082	146526	360853	747428		1124664	170879665
6	1.419	0.942	1.336	0.067	102718	154000	137263	145075	498116	892503		962275	146628927
7	1.504	0.933	1.402	0.074	113652	154000	159393	143639	657508	1036142		828409	129254196
8	1.594	0.923	1.472	0.080	123816	154000	182244	142216	839752	1178358		715990	116259741
9	1.689	0.914	1.545	0.087	133364	154000	206015	140808	1045767	1319167		620300	106238070
10	1.791	0.905	1.621	0.093	142758	154000	231444	139414	1277211	1458581		538023	**98338402**

SPREADING OF REPAIR COST

As persentage of each year's list price

Implement	Hours in use per year	YEARS										
		1	2	3	4	5	6	7	8	9	10	Total
Tractors % van list price	1000	1.50	3.05	4.15	5.08	5.92	6.67	7.38	8.04	8.66	9.27	59.72
- Inflation adapted		1.50	3.23	4.66	6.05	7.47	8.93	10.47	12.09	13.80	15.66	83.87
Mould board ploughs	250	2.76	5.62	7.65	9.37	10.89	12.30	13.59	14.82	15.97	17.07	110.04
- Inflation adapted		2.76	5.96	8.60	11.16	13.75	16.46	19.28	22.28	25.45	28.84	154.54
Disc harrows	250	1.50	3.05	4.16	5.09	5.92	6.68	7.40	8.03	8.68	9.27	59.78
- Inflation adapted		1.50	3.23	4.67	6.06	7.47	8.94	10.50	12.07	13.83	15.66	83.95
Chisel plow	250	3.15	4.08	4.52	4.85	5.10	5.30	5.49	5.65	5.79	5.92	49.85
- Inflation adapted		3.15	4.32	5.08	5.78	6.44	7.09	7.79	8.50	9.23	10.00	67.37
Cultivators, field	250	3.79	4.92	5.45	5.84	6.14	6.39	6.61	6.81	6.97	7.14	60.06
- Inflation adapted		3.79	5.22	6.12	6.96	7.75	8.55	9.38	10.24	11.11	12.06	81.18
One toe ripper	300	2.52	3.28	3.63	3.89	4.09	4.25	4.40	4.53	4.65	4.75	39.99
- Inflation adapted		2.52	3.48	4.08	4.63	5.16	5.69	6.24	6.81	7.41	8.03	54.05
Rotary tiller	200	3.18	5.22	6.42	7.35	8.13	8.81	9.42	9.98	10.90	10.96	80.37
- Inflation adapted		3.18	5.53	7.21	8.75	10.26	11.79	13.36	15.01	17.37	18.52	110.99
Cultivators, row	250	3.98	6.52	8.02	9.18	10.16	11.01	11.77	12.46	13.11	13.70	99.91
- Inflation adapted		3.98	6.91	9.01	10.93	12.83	14.73	16.70	18.74	20.90	23.15	137.87
Rotevators	250	2.51	5.11	6.96	8.52	9.91	11.18	12.37	13.47	25.00	8.75	103.78
- Inflation adapted		2.51	5.42	7.82	10.15	12.51	14.96	17.55	20.25	39.85	14.78	145.80
Rippers	350	5.36	6.96	7.72	8.26	8.69	9.05	9.35	9.63	9.87	10.10	84.99
- Inflation adapted		5.36	7.38	8.67	9.84	10.97	12.11	13.26	14.48	15.73	17.06	114.87
Stubble choppers	200	1.88	2.44	2.71	2.90	3.05	3.18	3.29	3.38	3.47	3.55	29.85
- Inflation adapted		1.88	2.59	3.04	3.45	3.85	4.26	4.67	5.08	5.53	6.00	40.35
Planters, rows, mnt	120	2.01	4.09	5.57	6.82	7.93	8.95	9.89	10.78	11.62	12.42	80.08
- Inflation adapted		2.01	4.34	6.26	8.12	10.01	11.98	14.03	16.21	18.52	20.98	112.46
Planters, row, trailed	150	2.01	4.08	5.56	6.81	7.92	8.94	9.88	10.76	11.60	12.41	79.97
- Inflation adapted		2.01	4.32	6.25	8.11	10.00	11.96	14.01	16.18	18.49	20.97	112.30
Planters, wheat	150	2.01	4.08	5.56	6.81	7.92	8.94	9.88	10.76	11.60	12.41	79.97
- Inflation adapted		2.01	4.32	6.25	8.11	10.00	11.96	14.01	16.18	18.49	20.97	112.30
Harvestor	200	1.26	2.55	3.48	4.26	4.95	5.59	6.18	6.73	7.26	7.76	50.02
- Inflation adapted		1.26	2.70	3.91	5.07	6.25	7.48	8.77	10.12	11.57	13.11	70.24
Harvestor, trailed	300	1.14	2.31	3.15	3.85	4.48	5.05	5.60	6.10	6.56	7.02	45.26
- Inflation adapted		1.14	2.45	3.54	4.59	5.66	6.76	7.94	9.17	10.46	11.86	63.56

SPREADING OF REPAIR COST

Implement	Hours in use per year	YEARS										
		1	2	3	4	5	6	7	8	9	10	Total
Combine harvester	300	0.70	1.42	1.94	2.37	2.76	3.11	3.44	3.75	4.04	4.32	27.85
- Inflation adapted		0.70	1.51	2.18	2.82	3.48	4.16	4.88	5.64	6.44	7.30	39.11
Mowers, disc cond	150	1.64	3.01	3.89	4.61	5.23	5.78	6.30	6.75	7.20	7.60	52.01
- Inflation adapted		1.64	3.19	4.37	5.49	6.60	7.73	8.94	10.15	11.48	12.84	72.43
Mowers, cutter bar	150	2.46	4.50	5.83	6.91	7.83	8.66	9.42	10.12	10.77	11.40	77.90
- Inflation adapted		2.46	4.77	6.55	8.23	9.89	11.59	13.36	15.22	17.17	19.26	108.49
Mowers, drum	200	1.90	3.47	4.49	5.32	6.03	6.67	7.25	7.79	8.29	8.77	59.98
- Inflation adapted		1.90	3.68	5.04	6.34	7.61	8.93	10.28	11.71	13.21	14.82	83.53
Harrows	200	7.57	9.82	10.89	11.66	12.26	12.77	13.20	13.58	13.93	14.24	119.92
- Inflation adapted		7.57	10.41	12.24	13.89	15.48	17.09	18.72	20.42	22.20	24.06	162.07
Balers	200	1.51	3.06	4.17	5.11	5.94	6.71	7.41	8.08	8.71	9.31	60.01
- Inflation adapted		1.51	3.24	4.69	6.09	7.50	8.98	10.51	12.15	13.88	15.73	84.28
Slasher	300	4.65	8.50	11.01	13.04	14.79	16.35	17.78	19.10	20.33	21.50	147.05
- Inflation adapted		4.65	9.01	12.37	15.53	18.67	21.88	25.22	28.72	32.40	36.32	204.78
Forage harvesters	200	2.00	4.07	5.54	6.79	7.90	8.91	9.85	10.73	11.57	12.37	79.73
- Inflation adapted		2.00	4.31	6.22	8.09	9.97	11.92	13.97	16.13	18.44	20.90	111.97
Fertilizer spreaders	150	7.42	9.63	10.68	11.43	12.03	12.52	12.95	13.32	25.00	15.00	129.98
- Inflation adapted		7.42	10.21	12.00	13.61	15.19	16.75	18.37	20.03	39.85	25.34	178.77
Sprayers, boom	150	3.15	4.10	4.54	4.86	5.11	5.32	5.50	5.66	5.80	5.93	49.97
- Inflation adapted		3.15	4.35	5.10	5.79	6.45	7.12	7.80	8.51	9.24	10.02	67.53
Sprayers, air carrier	150	2.00	3.26	4.01	4.60	5.08	5.50	5.88	6.23	6.55	6.85	49.96
- Inflation adapted		2.00	3.46	4.51	5.48	6.41	7.36	8.34	9.37	10.44	11.57	68.93
Bean puller	200	3.16	4.10	4.55	4.87	5.12	5.33	5.51	5.67	5.82	5.95	50.08
- Inflation adapted		3.16	4.35	5.11	5.80	6.46	7.13	7.82	8.53	9.28	10.05	67.69
Potato lifters	200	1.51	3.06	4.17	5.11	5.94	6.71	7.41	8.08	8.71	9.31	60.01
- Inflation adapted		1.51	3.24	4.69	6.09	7.50	8.98	10.51	12.15	13.88	15.73	84.28
Trailer	500	1.09	1.41	1.57	1.67	1.77	1.83	1.90	1.96	2.00	2.05	17.25
- Inflation adapted		1.09	1.49	1.76	1.99	2.23	2.45	2.70	2.95	3.19	3.46	23.31
Transfer trailer	250	1.00	1.61	2.00	2.29	2.53	2.74	2.93	3.11	3.26	3.40	24.87
- Inflation adapted		1.00	1.71	2.25	2.73	3.19	3.67	4.16	4.68	5.20	5.74	34.31

Source: Institute for Agricultural Engineering

TOTAL CULTIVATING COST PER CROP

Cultivation	Maize		Sunflower		Beans	Soya's	Potatoes	Wheat		Sorghum	No	Fodder (Annl)	Fodder (Perennial)	
	No-till	Tine	No-till	Tine				No-till	Tine		Till		Establish	Production
	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha
Plough														
Deep chisel		749.33		749.33	749.33	749.33	859.67		749.33	749.33		749.33	749.33	
Disk					570.27	570.27	570.27		570.27	570.27			570.27	
Till		328.31		328.31	328.31	328.31	328.31		328.31	328.31		328.31	328.31	
Till									328.31				328.31	
Till									328.31				328.31	
Rolmoer		233.56		233.56			233.56			233.56				
Chisel plough														
Chisel plough														
Drill	1021.36	1021.36	1021.36	1021.36	1021.36	1021.36				1021.36	643.79			
Wheat plant								886.84	886.84			886.84	886.84	
Spray	130.48	130.48	130.48	130.48	130.48	130.48		130.48	130.48	130.48	130.48		130.48	
Spray	130.48	130.48	130.48					130.48		130.48	130.48			
Spray	130.48		130.48					130.48						
Fertilizer applicate	173.69	173.69	173.69	173.69			173.69				173.69			
Spread														173.69
Mow														573.70
Harrow														166.08
Bale														616.36
Potatoes:														
- Planter							1152.36							
- Ridger							955.32							
- Lifter					1428.94		1101.17							
- Sort							2538.69							
TOTAL (Rand/ha)	**R 1 587**	**R 2 767**	**R 1 587**	**R 2 637**	**R 4 229**	**R 2 800**	**R 7 913**	**R 1 278**	**R 3 322**	**R 3 164**	**R 1 078**	**R 1 964**	**R 3 322**	**R 1 530**

Self harvest: (Rand/ha)

- Trail harvester	R 407.89	R 407.89	R 407.89	R 407.89										
- Combine harvester	R 757.73	R 757.73	R 757.73	R 757.73	R 700.18	R 700.18		R 700.18	R 700.18	R 700.18				

FUEL COST PER CROP

Cultivation	Maize		Sunflower		Beans	Soya's	Potatoes	Wheat		Sorghum	No	Fodder (Annl)	Fodder (Perennial)	
	Plough	Tine	Plough	Tine				Plough	Tine		Till		Establish	Production
	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha	L/ha
Plough														
Deep rip		24.5		24.5	24.5	24.5	24.5		24.5	24.5		24.5	24.5	
Disk					9.1	9.1	9.1		9.1	9.1			9.1	
Till		6.0		6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Till									6.0				6.0	
Till									6.0				6.0	
Rolmoer		2.8		2.8			7.5			2.8				
Chisel plough														
Chisel plough														
Drill	5.7	5.7	5.7	5.7	5.7	5.7				5.7	5.7			
Wheat plant								8.7	8.7			8.7	8.7	
Spray	1.3	1.3	1.3	1.3	1.3	1.3		1.3	1.3	1.3	1.3		1.3	
Spray	1.3	1.3	1.3					1.3		1.3	1.3			
Spray	1.3		1.3					1.3						
Fertilizer applicate	1.5	1.5	1.5	1.5			1.5				1.5			
Spread														1.5
Mow														9.3
Harrow														3.9
Bale														10.9
Potatoes:														
- Planter							22.8							
- Ridger							22.8							
- Lifter					7.6		26.0							
- Sort														
TOTAL (Rand/ha)	**11.2**	**43.2**	**11.2**	**41.8**	**54.2**	**46.6**	**120.2**	**12.7**	**61.8**	**50.8**	**9.8**	**39.3**	**61.8**	**25.5**
	R 246	**R 953**	**R 246**	**R 923**	**R 1 197**	**R 1 030**	**R 2 652**	**R 281**	**R 1 364**	**R 1 121**	**R 217**	**R 867**	**R 1 364**	**R 564**

Self harvest: (Liter/ha)

- Trail harvester	11.3	11.3	11.3	11.3						
- Combine harvester	6.8	6.8	6.8	6.8	6.8	6.8		6.8	6.8	6.8

Self harvest: (Rand/ha)

- Trail harvester	R 248.51	R 248.51	R 248.51	R 248.51						
- Combine harvester	R 149.03	R 149.03	R 149.03	R 149.03	R 149.03	R 149.03		R 149.03	R 149.03	R 149.03

OPERATOR'S COST PER CROP

Cultivation	Maize		Sunflower		Beans	Soya's	Potatoes	Wheat		Sorghum	No	Fodder (Annl)	Fodder (Perennial)	
	Plough	Tine	Plough	Tine				Plough	Tine		Till		Establish	Production
	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha	R/ha
Plough														
Deep rip		78.16		78.16	78.16	78.16	78.16		78.16	78.16		78.16	78.16	
Disk					26.44	26.44	26.44		26.44	26.44			26.44	
Till		21.40		21.40	21.40	21.40	21.40		21.40	21.40		21.40	21.40	
Till									21.40				21.40	
Till									21.40				21.40	
Chisel plough		31.23		31.23			31.23			31.23				
Chisel plough														
Chisel plough														
Drill	108.88	108.88	108.88	108.88	108.88	108.88				108.88	108.88			
Wheat plant								131.52	131.52			131.52	131.52	
Spray	38.72	38.72	38.72	38.72	38.72	38.72		38.72	38.72	38.72	38.72		38.72	
Spray	38.72	38.72	38.72					38.72		38.72	38.72			
Spray	38.72		38.72					38.72						
Fertilizer applicate	69.83	69.83	69.83	69.83			69.83				69.83			
Spread														69.83
Mow														43.89
Harrow														22.73
Bale														54.27
Potatoes:														
- Planter							242.92							
- Ridger							100.48							
- Lifter					49.32		100.48							
- Sort														
TOTAL (Rand/ha)	**R 295**	**R 387**	**R 295**	**R 348**	**R 323**	**R 274**	**R 671**	**R 248**	**R 339**	**R 344**	**R 256**	**R 231**	**R 339**	**R 191**

Self harvest: (Rand/ha)

- Trail harvester	71.2	71.2	71.2	71.2						
- Combine harvester	17.3	17.3	17.3	17.3	17.3	17.3		17.3	17.3	17.3

TRANSPORT PER CROP

Transport	Maize		Sunflower		Beans	Soya's	Potatoes	Wheat		Sorghum	No	Fodder (Annl)	Fodder (Perennial)	
	Plough	Tine	Plough	Tine				Plough	Tine		Till		Establish	Production
	R/ton	R/ton	R/ton	R/ton	R/ton	R/ton	R/ton	R/ton	R/ton		R/ton	R/ton	R/ton	R/ton
	30	30	30	30	30	30	10	30	30	30	30	5		5
Total cost	km	km	km	km	km	km	km	km	km	km	km	km	km	km
10 Ton flat BP							37.76					20.98	0.00	20.98
10 Ton bin BP	114.39	114.39	114.39	114.39	114.39	114.39		114.39	114.39	114.39	114.39			
Fuel cost														
10 Ton flat BP							22.32					11.16	0.00	11.16
10 Ton bin BP	66.95	66.95	66.95	66.95	66.95	66.95		66.95	66.95	66.95	66.95			
Operator's cost														
10 Ton flat BP							5.90					2.95	0.00	2.95
10 Ton bin BP	17.71	17.71	17.71	17.71	17.71	17.71	5.90	17.71	17.71	17.71	17.71			