MACHINERY COST

2015/2016

COMPILED BY:

COMPUTUS MANAGEMENT BUREAU, CC

CK 1989/040736/23

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16-Oct-2015

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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:
Pryse van trekkers, implemente en komponente is bekom by:
AFGRI Onderdele, Bethlehem
AFGRI, Bethlehem
Batterysentrum, Bethlehem
BP Implemente, Bothaville
Dormas, Johannesburg
Maxiprest Bethlehem
Ortman, USA
Same Trekkerdienste, Reitz
Van Zyl Staalwerke, Reitz
VKB, Reitz

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 =	6	%	
Inflation rate =	5	%	
Real rate of financing cost =	1	%	
Discount on purchase price =	10	%	
Insurance rate =	0.5	%	
Lisence fee =	288.00	Rand per annum	6001 - 6750 kg
Diesel price (Rabat excluded) =	11.46	Rand/liter	
Marginal tax rate =	28	%	

spreading of inflation rate =	**Factor**
- Year 1	1.0000
- Year 2	1.0500
- Year 3	1.1025
- Year 4	1.1576
- Year 5	1.2155
- Year 6	1.2763
- Year 7	1.3401
- Year 8	1.4071
- Year 9	1.4775
- Year 10	1.5513
TOTAL	12.578

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 2 607	per month (natura included)
	B2	R 3 128	"
	B3	R 3 754	"
	B4	R 4 505	"
General worker level	A1	R 2 607	"
	A2	R 2 868	"
	A3	R 3 154	"

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 5090 E	JOHN DEERE 6105 M	JOHN DEERE 6140 M	JOHN DEERE 6150 M	JOHN DEERE 7230R	JOHN DEERE 8295 R	JOHN DEERE 9560R
kW	66	78	99	110	171	217	417
Annual hours in use	1000	1000	1000	1000	1000	1000	1000

PRICE:

List price	R 615 100.00	R 907 400.00	R 1 170 000.00	R 1 512 800.00	R 243 600.00	R 2 803 400.00	R 4 816 700.00
Purchase price	R 553 590.00	R 816 660.00	R 1 053 000.00	R 1 361 520.00	R 219 240.00	R 2 523 060.00	R 4 335 030.00
Trade value after life	R 459 839.57	R 678 358.69	R 874 674.53	R 1 130 946.69	R 226 931.08	R 2 611 570.61	R 4 487 105.71

PRICE PER kW:

List price	R 9 319.70	R 11 633.33	R 11 818.18	R 13 752.73	R 1 424.56	R 12 918.89	R 11 550.84
Purchase price	R 8 387.73	R 10 470.00	R 10 636.36	R 12 377.45	R 1 282.11	R 11 627.00	R 10 395.76
Trade value after life	R 6 967.27	R 8 696.91	R 8 835.10	R 10 281.33	R 1 327.08	R 12 034.89	R 10 760.45

COST OVER LIFE TIME:

Operator's cost	R 312 840.00	R 312 840.00	R 375 408.00	R 375 408.00	R 450 489.60	R 450 489.60	R 540 587.52
Fixed cost	R 172 637.64	R 253 307.71	R 325 781.06	R 420 388.31	R 28 651.75	R 299 466.69	R 512 464.47
Maintanance cost	R 187 145.35	R 199 943.31	R 185 084.77	R 238 533.86	R 338 683.11	R 588 438.39	R 865 594.44
Repair cost	R 300 295.41	R 519 132.86	R 742 090.79	R 960 296.22	R -145 640.41	R 1 633 137.67	R 2 951 436.80
TOTAL COST	**R 972 918.40**	**R 1 285 223.87**	**R 1 628 364.63**	**R 1 994 626.40**	**R 672 184.06**	**R 2 971 532.34**	**R 4 870 083.23**

COST PER kW:

Operator's cost	R 4 740.00	R 4 010.77	R 3 792.00	R 3 412.80	R 2 634.44	R 2 075.99	R 1 296.37
Fixed cost	R 2 615.72	R 3 247.53	R 3 290.72	R 3 821.71	R 167.55	R 1 380.03	R 1 228.93
Maintanance cost	R 2 835.54	R 2 563.38	R 1 869.54	R 2 168.49	R 1 980.60	R 2 711.70	R 2 075.77
Repair cost	R 4 549.93	R 6 655.55	R 7 495.87	R 8 729.97	R -851.70	R 7 525.98	R 7 077.79
TOTAL COST	**R 14 741.19**	**R 16 477.23**	**R 16 448.13**	**R 18 132.97**	**R 3 930.90**	**R 13 693.70**	**R 11 678.86**

COST PER ANNUM:

Operator's cost	R 31 284.00	R 31 284.00	R 37 540.80	R 37 540.80	R 45 048.96	R 45 048.96	R 54 058.75
Fixed cost	R 17 263.76	R 25 330.77	R 32 578.11	R 42 038.83	R 2 865.17	R 29 946.67	R 51 246.45
Maintanance cost	R 18 714.54	R 19 994.33	R 18 508.48	R 23 853.39	R 33 868.31	R 58 843.84	R 86 559.44
Repair cost	R 30 029.54	R 51 913.29	R 74 209.08	R 96 029.62	R -14 564.04	R 163 313.77	R 295 143.68
TOTAL COST	**R 97 291.84**	**R 128 522.39**	**R 162 836.46**	**R 199 462.64**	**R 67 218.41**	**R 297 153.23**	**R 487 008.32**

COST PER HOUR:

Operator's cost	R 31.28	R 31.28	R 37.54	R 37.54	R 45.05	R 45.05	R 54.06
Fixed cost	R 17.26	R 25.33	R 32.58	R 42.04	R 2.87	R 29.95	R 51.25
Maintanance cost	R 18.71	R 19.99	R 18.51	R 23.85	R 33.87	R 58.84	R 86.56
Repair cost	R 30.03	R 51.91	R 74.21	R 96.03	R -14.56	R 163.31	R 295.14
TOTAL COST	**R 97.29**	**R 128.52**	**R 162.84**	**R 199.46**	**R 67.22**	**R 297.15**	**R 487.01**

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**			**17.05**													**395.95**
3 Btms (400) BP	1.20	5.5	83	0.55	5.48	250	66	21.69	38050	34245	10811	2343	225	0	5556	62133	70257	281.03	97.29	177.60	458.63
3 Btms (450) BP	1.35	5.5	83	0.62	6.16	250	66	19.28	38050	34245	10811	2343	225	0	5556	55229	63354	253.41	97.29	157.87	411.29
4 Btms (400) BP	1.60	6.0	83	0.80	7.97	250	78	17.62	48700	43830	13837	2999	288	0	7111	50483	60881	243.53	128.52	161.30	404.82
4 Btms (450) BP	1.80	6.0	83	0.90	8.96	250	78	15.66	48700	43830	13837	2999	288	0	7111	44873	55272	221.09	128.52	143.38	364.47
5 Btms (400) BP	2.00	6.0	83	1.00	9.96	250	99	17.89	66250	59625	18823	4080	392	0	9674	51259	65405	261.62	162.84	163.49	425.11
5 Btms (450) BP	2.25	7.5	83	1.40	14.01	250	110	14.14	66250	59625	18823	4080	392	0	9674	40501	54647	218.59	199.46	142.41	361.00
6 Btms (450) BP	2.40	8.5	83	1.69	16.93	250	171	18.18	77300	69570	21963	4761	458	0	11287	52082	68587	274.35	67.22	39.70	314.05
8 Bts (550) WT	4.40	8.5	83	3.10	31.04	250	217	12.58	149500	134550	42477	9207	885	0	21830	36050	67972	271.89	297.15	95.73	367.62
10 Bts (550) WT	5.50	10.0	83	4.57	45.65	250	417	16.44	189000	170100	53700	11640	1119	0	27597	47108	87464	349.86	487.01	106.68	456.54
Deep rip:				**1.00**	**10.03**			**24.29**													**480.21**
1 tine ripper BP	0.90	5.5	78	0.39	3.86	350	66	30.77	9100	8190	2586	560	54	0	994	123415	125023	357.21	97.29	251.99	609.20
1 tine ripper BP	1.50	6.0	78	0.70	7.02	350	78	20.00	9100	8190	2586	560	54	0	994	80220	81828	233.79	128.52	183.08	416.87
3 tine ripper BP	1.50	6.0	78	0.70	7.02	350	99	25.38	20200	18180	5739	1244	120	0	2206	101818	105387	301.11	162.84	231.96	533.07
3 tine ripper BP	1.50	5.8	78	0.68	6.79	350	110	29.18	20200	18180	5739	1244	120	0	2206	117032	120601	344.57	199.46	293.93	638.51
5 tine ripper BP	2.50	7.0	78	1.37	13.65	350	171	22.55	29700	26730	8439	1829	176	0	3243	90446	95694	273.41	67.22	49.24	322.65
7 tine ripper BP	3.50	8.0	78	2.18	21.84	350	217	17.88	39450	35505	11209	2430	234	0	4307	71735	78706	224.87	297.15	136.06	360.93
Disk:				**3.35**	**33.47**			**9.46**													**353.86**
Offset BP	1.85	6.0	79	0.88	8.77	250	66	13.55	25950	23355	7373	1598	154	0	2058	38814	42625	170.50	97.29	110.95	281.45
Offset BP	2.32	8.0	79	1.47	14.66	250	78	9.58	103250	92925	29336	6359	611	0	8190	27434	42594	170.38	128.52	87.65	258.03
Offset BP	2.75	8.0	79	1.74	17.38	250	99	10.25	109100	98190	30998	6719	646	0	8654	29375	45395	181.58	162.84	93.69	275.27
Offset BP	3.50	8.5	79	2.35	23.50	250	110	8.42	172650	155385	49054	10633	1022	0	13695	24137	49487	197.95	199.46	84.87	282.82
Offset BP	3.80	8.5	79	2.55	25.52	250	171	12.06	206150	185535	58573	12696	1221	0	16353	34559	64829	259.31	67.22	26.34	285.66
Offset Baldan	5.80	9.0	79	4.12	41.24	250	217	9.47	388800	349920	110468	23945	2302	0	30841	27137	84225	336.90	297.15	72.06	408.96
Offset Baldan	6.95	9.0	79	4.94	49.41	250	217	7.90	556000	500400	157974	34243	3292	0	44104	22647	104285	417.14	297.15	60.13	477.27
Offset Baldan	8.50	13.0	79	8.73	87.30	250	217	4.47	773600	696240	219800	47644	4580	0	61365	12819	126408	505.63	487.01	55.79	561.42
Till:				**3.26**	**32.57**			**7.74**													**208.35**
Shank Tiller BP	2.00	8.0	84	1.34	13.44	250	66	7.73	26450	23805	7515	1629	157	0	2041	22159	25985	103.94	97.29	72.39	176.33
Vibro Flex BP	2.50	8.0	84	1.68	16.80	250	78	7.31	37900	34110	10768	2334	224	0	2924	20950	26433	105.73	128.52	76.50	182.23
Vibro F 13t BP	3.50	8.4	84	2.47	24.70	250	99	6.31	58150	52335	16522	3581	344	0	4487	18089	26501	106.01	162.84	65.94	171.94
Vibro F 15t BP	3.50	9.0	84	2.65	26.46	250	110	6.55	62550	56295	17772	3852	370	0	4826	18759	27808	111.23	199.46	75.38	186.61
Shank Tiller BP	4.00	8.0	84	2.69	26.88	250	171	10.02	50200	45180	14263	3092	297	0	3873	28706	35968	143.87	67.22	25.01	168.88
Vibro F 3bm BP	6.50	9.0	84	4.91	49.14	250	217	6.96	190450	171405	54112	11729	1128	0	14695	19926	47478	189.91	297.15	60.47	250.38
Vibro F 3bm BP	8.00	10.5	84	7.06	70.56	250	417	9.31	252950	227655	71870	15579	1498	0	19517	26668	63261	253.04	487.01	69.02	322.06

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:				**2.11**	**21.05**			**7.16**													**187.19**
BD 7 Tine BP	2.40	6.0	84	1.21	12.10	250	66	8.59	54950	49455	15613	3384	325	0	3519	24621	31850	127.40	97.29	80.43	207.83
BD 9 Tine BP	3.20	6.0	84	1.61	16.13	250	66	6.45	70500	63450	20031	4342	417	0	4515	18466	27740	110.96	97.29	60.32	171.28
BD 11 Tine BP	3.50	7.0	84	2.06	20.58	250	78	5.97	86150	77535	24477	5306	510	0	5517	17102	28435	113.74	128.52	62.45	176.19
BD 11 Tn H BP	4.00	7.0	84	2.35	23.52	250	99	6.63	97650	87885	27745	6014	578	0	6254	18993	31839	127.36	162.84	69.23	196.59
BD 15 Tn H BP	5.60	7.0	84	3.29	32.93	250	171	8.18	132850	119565	37746	8182	787	0	8508	23433	40910	163.64	67.22	20.41	184.05
Drillers:				**3.02**	**30.17**			**6.01**													**515.18**
3 row BP (V/D)	2.30	7.5	65	1.12	11.21	120	66	9.27	177400	159660	63853	9581	1118	8603	18850	12749	50901	424.18	97.29	86.77	510.95
4 row BP (V/L)	3.60	7.5	65	1.76	17.55	120	66	5.92	266000	239400	95744	14366	1676	8603	28265	8145	61055	508.79	97.29	55.44	564.23
4 rw Jumil Notill	3.60	8.5	65	1.99	19.89	250	78	6.18	230830	207747	83085	12466	1454	8603	24528	17696	64747	258.99	128.52	64.62	323.60
6 rw Jumil No till	5.40	8.5	65	2.98	29.84	250	99	5.23	540297	486267	194474	29179	3404	8603	57412	14973	113571	454.28	162.84	54.58	508.86
8 rw Jumil No till	7.20	8.5	65	3.98	39.78	250	110	4.36	742658	668392	267312	40108	4679	8603	78915	12478	144782	579.13	199.46	50.14	629.27
6 row JD (V/D)	5.40	8.5	65	2.98	29.84	120	110	5.81	459100	413190	165248	24794	2892	8603	48784	7986	93059	775.49	199.46	66.86	842.35
6 row JD (V/L)	5.40	8.5	65	2.98	29.84	120	110	5.81	44100	39690	15873	2382	278	8603	4686	7986	23934	199.45	199.46	66.86	266.31
8 row JD (V/D)	7.20	10.0	65	4.68	46.80	250	171	5.75	579000	521100	208405	31270	3648	8603	61524	16488	121532	486.13	67.22	14.36	500.49
8 row JD (V/L)	7.20	10.0	65	4.68	46.80	250	171	5.75	564100	507690	203042	30465	3554	8603	59941	16488	119050	476.20	67.22	14.36	490.56
Wheat plant:				**1.91**	**19.06**			**8.04**													**511.41**
7 row BP BP14	2.84	6.5	65	1.20	12.00	150	66	8.66	194900	175410	70152	10526	1228	8603	20682	14892	55931	372.87	97.29	81.08	453.95
7 row BP BP14	3.25	6.5	65	1.37	13.73	150	66	7.57	194900	175410	70152	10526	1228	8603	20682	13013	54052	360.35	97.29	70.85	431.20
7 row BP BP14	3.66	8.0	65	1.90	19.03	150	78	6.45	194900	175410	70152	10526	1228	8603	20682	11096	52135	347.56	128.52	67.53	415.09
9 row BP BP18	3.56	8.0	65	1.85	18.51	150	110	9.36	243100	218790	87501	13129	1531	8603	25797	16088	65148	434.32	128.52	69.43	503.75
9 row BP BP18	4.06	8.0	65	2.11	21.11	150	110	8.21	243100	218790	87501	13129	1531	8603	25797	14107	63167	421.11	162.84	77.13	498.24
9 row BP BP18	4.57	8.0	65	2.38	23.76	150	110	7.29	243100	218790	87501	13129	1531	8603	25797	12532	61592	410.62	162.84	68.52	479.14
12 r BP BPS24	3.56	8.0	65	1.85	18.51	150	110	9.36	323950	291555	116602	17495	2041	8603	34376	16088	78603	524.02	199.46	107.75	631.77
12 r BP BPS24	4.06	8.0	65	2.11	21.11	150	110	8.21	323950	291555	116602	17495	2041	8603	34376	14107	76622	510.81	199.46	94.48	605.29
12 r BP BPS24	4.57	8.0	65	2.38	23.76	150	110	7.29	323950	291555	116602	17495	2041	8603	34376	12532	75047	500.32	199.46	83.93	584.25
Spray:				**7.82**	**78.20**			**1.37**													**102.17**
600 L BP	12.00	8.5	60	6.12	61.20	150	66	1.51	31200	28080	8865	1922	185	2868	2003	2595	9572	63.81	97.29	15.90	79.71
1000 L BP	14.00	8.5	60	7.14	71.40	150	78	1.53	43150	38835	12260	2657	255	2868	2770	2629	11180	74.53	97.29	13.63	88.16
2000 L BP	16.00	8.5	75	10.20	102.00	150	78	1.07	107800	97020	30629	6639	638	2868	6920	1840	18905	126.03	128.52	12.60	138.63

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**			**6.44**													**183.39**
3 row Cultiv BP	3.00	4.0	83	1.00	9.96	250	66	9.28	32100	28890	9120	1977	190	0	4193	26579	32939	131.76	97.29	97.68	229.44
3 row Cultiv BP	3.00	7.5	83	1.87	18.68	250	66	4.95	32100	28890	9120	1977	190	0	4193	14175	20535	82.14	97.29	52.10	134.24
4 row Cultiv BP	4.00	4.0	83	1.33	13.28	250	78	8.22	39100	35190	11109	2408	231	0	5107	23559	31306	125.22	128.52	96.78	222.00
4 row Cultiv BP	4.00	8.5	83	2.82	28.22	250	78	3.87	39100	35190	11109	2408	231	0	5107	11086	18833	75.33	128.52	45.54	120.88
6 row Cultiv BP	4.60	4.0	83	1.53	15.27	250	99	9.08	57100	51390	16224	3517	338	0	7459	26001	37314	149.26	162.84	106.62	255.88
6 row Cultiv BP	4.60	8.5	83	3.25	32.45	250	99	4.27	57100	51390	16224	3517	338	0	7459	12236	23549	94.20	162.84	50.18	144.37
6 row Cultiv BP	6.50	4.0	83	2.16	21.58	250	110	7.14	79900	71910	22702	4921	473	0	10437	20445	36276	145.10	199.46	92.43	237.53
6 row Cultiv BP	6.50	9.0	83	4.86	48.56	250	110	3.17	79900	71910	22702	4921	473	0	10437	9087	24918	99.67	199.46	41.08	140.75
8 row Cultiv BP	7.20	4.0	83	2.39	23.90	250	171	10.02	89850	80865	25529	5534	532	0	11737	28693	46495	185.98	67.22	28.12	214.10
8 row Cultiv BP	7.20	9.0	83	5.38	53.78	250	171	4.45	89850	80865	25529	5534	532	0	11737	12753	30555	122.22	67.22	12.50	134.72
Fertilizer Applicator:				**2.56**	**25.58**			**6.44**													**159.39**
3 row JD	4.50	7.5	60	2.03	20.25	250	78	5.39	0	0	0	0	0	5735	0	15450	21185	84.74	128.52	63.47	148.21
4 row JD	3.60	7.5	60	1.62	16.20	250	99	8.56	0	0	0	0	0	5735	0	24512	30247	120.99	162.84	100.52	221.50
6 row JD	5.40	9.0	60	2.92	29.16	250	110	5.28	0	0	0	0	0	5735	0	15131	20866	83.46	199.46	68.40	151.87
8 row JD	7.20	8.5	60	3.67	36.72	250	171	6.52	0	0	0	0	0	5735	0	18679	24414	97.66	67.22	18.31	115.96
Spread:				**8.53**	**85.32**			**1.74**													**165.93**
600 L BP	12.00	9.0	42	4.54	45.36	150	66	2.04	7850	7065	2230	483	46	5735	1330	3502	11097	73.98	97.29	21.45	95.43
1200 L BP	18.00	9.0	50	8.10	81.00	150	78	1.35	79600	71640	22616	4902	471	5735	13488	2317	26914	179.43	128.52	15.87	195.29
1500 L BP	24.00	9.0	60	12.96	129.60	150	171	1.85	90200	81180	25628	5555	534	5735	15284	3175	30284	201.89	67.22	5.19	207.08
Mow:				**1.33**	**13.32**			**10.38**													**369.91**
Slasher mow BP	1.20	6	75	0.54	5.40	300	66	17.11	17200	15480	4887	1059	102	0	3332	58828	63322	211.07	97.29	180.17	391.24
Slasher mow BP	1.50	7	75	0.79	7.88	300	78	13.87	21150	19035	6009	1303	125	0	4098	47674	53199	177.33	128.52	163.20	340.53
Slasher mow BP	1.80	7	75	0.95	9.45	300	66	9.78	24800	22320	7046	1527	147	0	4805	33616	40095	133.65	97.29	102.95	236.60
Disk mow Kuhn	2.00	7	75	1.05	10.50	300	78	10.40	111140	100026	31578	6845	658	0	21533	35755	64791	215.97	128.52	122.40	338.37
Disk mow Kuhn	2.40	7	75	1.26	12.60	300	78	8.67	125630	113067	35695	7737	744	0	24340	29796	62617	208.72	128.52	102.00	310.73
Mow/Cond Kuhn	2.50	9	75	1.69	16.88	300	110	9.13	253250	227925	71955	15597	1499	0	49066	31375	97538	325.13	199.46	118.20	443.33
Mow/Cond Kuhn	3.00	9	75	2.03	20.25	300	110	7.60	253250	227925	71955	15597	1499	0	49066	26146	92308	307.69	199.46	98.50	406.19
Mow/Cond Kuhn	3.50	9	75	2.36	23.63	300	110	6.52	382560	344304	108695	23561	2265	0	74120	22411	122356	407.85	199.46	84.43	492.28

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:				**2.63**	**26.28**			**4.23**													**114.82**
4 Wheel Katova	2.28	8.5	80	1.55	15.50	200	66	5.96	9500	8550	2699	585	56	0	1464	13660	15765	78.82	97.29	62.75	141.58
8 Wheel Katova	5.45	8.5	80	3.71	37.06	200	66	2.49	30000	27000	8524	1848	178	0	4622	5715	12361	61.81	97.29	26.25	88.06
Bale:				**1.58**	**15.77**			**8.35**													**399.09**
1.2 m Dia Masc	2.28	6.8	60	0.93	9.30	200	66	11.17	277820	250038	73156	17688	1616	0	22123	25612	67039	335.20	97.29	104.59	439.78
1.2 m Dia Masc	5.45	6.8	60	2.22	22.24	200	78	5.52	315000	283500	82947	20055	1832	0	25084	12663	59634	298.17	128.52	57.80	355.97
1.6 m Dia Masc	2.28	6.8	60	0.93	9.30	200	66	11.17	299660	269694	78907	19079	1743	0	23862	25612	70296	351.48	97.29	104.59	456.07
1.6 m Dia Masc	5.45	6.8	60	2.22	22.24	200	78	5.52	299660	269694	78907	19079	1743	0	23862	12663	57347	286.73	128.52	57.80	344.53
Potatoes:				**0.54**	**5.40**			**23.83**													**642.10**
Planter BP	1.50	6	60	0.54	5.40	100	78	22.75	103350	93015	29364	6365	612	8603	10967	26072	52619	526.19	128.52	238.00	764.19
Ridger BP	1.50	6	60	0.54	5.40	100	78	22.75	17250	15525	4901	1062	102	0	1374	26072	28610	286.10	128.52	238.00	524.10
Lifter BP	1.50	6	60	0.54	5.40	100	78	26.00	69350	62415	19704	4271	411	0	5522	29796	40000	400.00	128.52	238.00	638.01
Sort:	Cap/d	Pwr/h		Bag/ha	ha/day	ha/year										Power					**1 792.73**
Wash & pack	4800	60		2000	2	100			1308000	1177200	371636	80556	7744	0	86816	25000	200116	2 001.16	0.00	0.00	2 001.16
Wash & pack	16000	100		2000	8	300			3270000	2943000	929091	201391	19360	0	217040	37500	475291	1 584.30	0.00	0.00	1 584.30
Silage:								**24.19**													**637.36**
Silage BP	0.90	6.8	60	0.37	3.67	200	66	28.31	98900	89010	28100	6091	586	8603	10463	64884	90627	453.13	97.29	264.96	718.09
Silage BP	1.50	6.8	60	0.61	6.12	200	78	20.07	84900	76410	24122	5229	503	8603	8982	46009	69325	346.63	128.52	210.00	556.63
Harvest:				**1.10**	**11.02**			**11.26**													**413.21**
Bean cutter SL	5.40	5	60	1.62	16.20	300	78	7.58	747000	739530	222349	51718	24047	2607	79031	655200	812603	2 708.68	97.29	60.06	2 768.73
Trail harvest BP	1.80	6.8	60	0.73	7.34	300	66	14.15	255600	230040	72623	15742	1513	2868	27042	48663	95828	319.43	97.29	132.48	451.90
Trail harvest BP	3.60	6.8	60	1.47	14.69	300	78	8.36	314350	282915	89315	19360	1861	2868	33258	28755	86102	287.01	128.52	87.50	374.51
NH 660 6r Head	5.46	8.0	65	2.84	28.39	1000	142	9.00	4891000	4401900	1699686	270221	30508	11262	180745	103169	595906	595.91			595.91
NH 660 25' Table	7.60	8.0	65	3.95	39.52	1000	142	6.47	4852000	4366800	1686133	268067	30265	11262	179304	74119	563016	563.02			563.02
Transport:				**km/h**		**h/year**		**l/ha**										**R/h**	**R/h**		**R/km**
10 Ton flat BP				12		500	78	10.92	124100	111690	35260	7643	735	2868	2750	62572	76567	153.13	128.52		23.47
10 Ton bin BP				12		500	78	10.92	144250	129825	40985	8884	854	2868	3197	62572	78374	156.75	128.52		23.77

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**			**16.39**													**404.77**
(Broad)																					
Super 19 5 tine	2.00	7.0	84	1.18	11.76	250	110	14.73	102900	92610	29237	6337	609	0	6590	42208	55744	222.98	199.46	169.61	392.59
Super 19 7 tine	2.80	7.0	84	1.65	16.46	250	171	16.36	136100	122490	38670	8382	806	0	8716	46867	64771	259.08	67.22	40.83	299.91
Super 19 9 tine	3.60	7.0	84	2.12	21.17	250	217	16.15	176650	158985	50191	10879	1046	0	11313	46258	69496	277.98	297.15	140.38	418.36
Super 19 11 tine	4.40	7.0	84	2.59	25.87	250	217	13.21	216370	194733	61476	13326	1281	0	13856	37847	66311	265.24	297.15	114.86	380.10
Super 19 13 tine	5.20	7.0	84	3.06	30.58	250	417	21.48	242210	217989	68818	14917	1434	0	15511	61540	93403	373.61	487.01	159.28	532.89
Rolmoer:				**8.46**	**84.60**			**2.80**													**138.60**
Rolmoer BP	6.00	12.0	94	6.77	67.68	250	99	3.22	204850	184365	58203	12616	1213	0	6115	9220	29164	116.65	162.84	24.06	140.71
Rolmoer BP	9.00	12.0	94	10.15	101.52	250	110	2.38	229850	206865	65306	14156	1361	0	6861	6829	29207	116.83	199.46	19.65	136.48
Striptill:																					
(Till only)				**3.71**	**37.13**			**7.05**													**306.32**
Orthman 4 row	3.64	8.0	85	2.48	24.75	250	110	7.00	31000	27900	11158	1674	195	0	1985	20053	23908	95.63	199.46	80.58	176.22
Orthman 6 row	5.46	8.0	85	3.71	37.13	250	171	7.25	442000	397800	159093	23871	2784	0	28306	20783	75744	302.97	67.22	18.10	321.08
Orthman 8 row	7.28	8.0	85	4.95	49.50	250	217	6.90	568000	511200	204445	30675	3578	0	36375	19780	90409	361.63	297.15	60.03	421.66
(Till with fertilizer)				**3.28**	**32.76**			**7.99**													**410.16**
Orthman 4 row	3.64	8.0	75	2.18	21.84	250	110	7.93	356000	320400	128138	19226	2243	2868	22798	22727	69862	279.45	199.46	91.33	370.78
Orthman 6 row	5.46	8.0	75	3.28	32.76	250	171	8.22	499000	449100	179610	26949	3144	2868	31956	23554	88470	353.88	67.22	20.52	374.40
Orthman 8 row	7.28	8.0	75	4.37	43.68	250	217	7.82	635600	572040	228777	34326	4004	2868	40704	22417	104320	417.28	297.15	68.03	485.31
(Till with plant)				**2.84**	**28.39**			**9.22**													**837.17**
Orthman 4 row	3.64	8.0	65	1.89	18.93	250	110	9.15	731500	658350	263296	39505	4608	8603	77729	26224	156669	626.68	199.46	105.38	732.06
Orthman 6 row	5.46	8.0	65	2.84	28.39	250	171	9.49	944700	850230	340035	51020	5951	8603	100384	27177	193135	772.54	67.22	23.68	796.21
Orthman 8 row	7.28	8.0	65	3.79	37.86	250	217	9.03	1151000	1035900	414290	62161	7251	8603	122305	25866	226186	904.74	297.15	78.50	983.24
Harrow:				**2.01**	**20.08**			**7.96**													**159.54**
3 row Single BP	2.70	7.5	85	1.72	17.21	250	66	8.44	29790	26811	8464	1835	176	0	889	24168	27069	108.27	97.29	56.52	164.80
4 row Single BP	3.60	7.5	85	2.30	22.95	250	78	7.48	32310	29079	9180	1990	191	0	964	21422	24568	98.27	128.52	56.00	154.27
6 row Single BP	5.40	9.0	85	4.13	41.31	250	99	5.27	48420	43578	13757	2982	287	0	1445	15105	19819	79.28	162.84	39.42	118.70
8 row Single BP	7.20	8.5	85	5.20	52.02	250	110	4.65	93375	84038	26530	5751	553	0	2787	13328	22419	89.68	199.46	38.34	128.02

BP = BP Implemente BO = Big Ox FC = Falcon JD = John Deere JS = John Shearer Ra = Radium WT = Wilton GC= GC Tillage
AP = Agriponent

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE			JOHN DEERE		
DETAILS	5090 E			6105 M		
kW	66			78		
Annual hours in use	1000			1000		
PRICE:	**Per kW**	**Total**	**Per hour**	**Per kW**	**Total**	**Per hour**
List price	R 9 319.70	R 615 100.00	R 61.51	R 11 633.33	R 907 400.00	R 90.74
Purchase price	R 8 387.73	R 553 590.00	R 55.36	R 10 470.00	R 816 660.00	R 81.67
Trade value after life	R 6 967.27	R 459 839.57	R 45.98	R 8 696.91	R 678 358.69	R 67.84
COST:	**Per kW**	**Per Year**	**Per hour**	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 4 740.00	R 31 284.00	R 31.28	R 4 010.77	R 31 284.00	R 31.28
Fixed cost	R 2 615.72	R 17 263.76	R 17.26	R 3 247.53	R 25 330.77	R 25.33
Maintanance cost	R 2 835.54	R 18 714.54	R 18.71	R 2 563.38	R 19 994.33	R 19.99
Repair cost	R 4 549.93	R 30 029.54	R 30.03	R 6 655.55	R 51 913.29	R 51.91
TOTAL COST	**R 14 741.19**	**R 97 291.84**	**R 97.29**	**R 16 477.23**	**R 128 522.39**	**R 128.52**

FIXED COST:	Per kW	Cost per Year	Cost per hour	Per kW	Cost per Year	Cost per hour
- Depreciation	R 1 420.46	R 9 375.04	R 9.38	R 1 773.09	R 13 830.13	R 13.83
- Lisence	R 43.64	R 288.00	R 0.29	R 36.92	R 288.00	R 0.29
- Insurance	R 383.87	R 2 533.57	R 2.53	R 479.17	R 3 737.55	R 3.74
- Financing cost	R 767.75	R 5 067.15	R 5.07	R 958.35	R 7 475.09	R 7.48
TOTAL	**R 2 615.72**	**R 17 263.76**	**R 17.26**	**R 3 247.53**	**R 25 330.77**	**R 25.33**

MAINTANANCE	Hours	Price	Cost/hour	Hours	Price	Cost/hour
Oil:			**R 7.77**			**R 7.23**
- Machine oil	150	R 882.48	R 5.88	150	R 705.98	R 4.71
- Transmission oil	1500	R 2 833.26	R 1.89	1500	R 3 777.68	R 2.52
Filters:			**R 2.96**			**R 4.79**
- Air filter (primary)	600	R 416.72	R 0.69	600	R 392.75	R 0.65
- Air filter (sekondary)	600	R 236.37	R 0.39	600	R 726.14	R 1.21
- Diesel filter	450	R 290.37	R 0.65	450	R 290.37	R 0.65
- Hidrolic oil filter	450	R 330.19	R 0.73	450	R 510.92	R 1.14
- Oil filter	150	R 74.38	R 0.50	150	R 171.71	R 1.14
- Transmission oil filter	1500	R -	R -	1500	R -	R -
- Air conditioner filter	750	R -	R -	750	R -	R -
Tyres:			**R 7.45**			**R 7.45**
- Set at front	3000	R 8 774.00	R 2.92	3000	R 8 774.00	R 2.92
- Set at rear	4000	R 18 088.00	R 4.52	4000	R 18 088.00	R 4.52
Battery:	2000	R 1 064.91	**R 0.53**	2000	R 1 064.91	**R 0.53**
TOTAL			**R 18.71**			**R 19.99**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time	Factor	List Price	Cost/life time
- Year 1	0.0150	R 615 100.00	R 9 226.50	0.0150	R 907 400.00	R 13 611.00
- Year 2	0.0305	R 645 855.00	R 19 698.58	0.0305	R 952 770.00	R 29 059.49
- Year 3	0.0415	R 678 147.75	R 28 143.13	0.0415	R 1 000 408.50	R 41 516.95
- Year 4	0.0508	R 712 055.14	R 36 172.40	0.0508	R 1 050 428.93	R 53 361.79
- Year 5	0.0592	R 747 657.89	R 44 261.35	0.0592	R 1 102 950.37	R 65 294.66
- Year 6	0.0667	R 785 040.79	R 52 362.22	0.0667	R 1 158 097.89	R 77 245.13
- Year 7	0.0738	R 824 292.83	R 60 832.81	0.0738	R 1 216 002.78	R 89 741.01
- Year 8	0.0804	R 865 507.47	R 69 586.80	0.0804	R 1 276 802.92	R 102 654.96
- Year 9	0.0866	R 908 782.84	R 78 700.59	0.0866	R 1 340 643.07	R 116 099.69
- Year 10	0.0927	R 954 221.99	R 88 456.38	0.0927	R 1 407 675.22	R 130 491.49
TOTAL			**R 487 440.76**			**R 719 076.16**

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE			JOHN DEERE		
DETAILS	6140 M			6150 M		
kW	99			110		
Annual hours in use	1000			1000		
PRICE:	**Total**	**Per hour**	**Per hour**	**Per kW**	**Total**	**Per hour**
List price	R 11 818.18	R 1 170 000.00	R 117.00	R 13 752.73	R 1 512 800.00	R 151.28
Purchase price	R 10 636.36	R 1 053 000.00	R 105.30	R 12 377.45	R 1 361 520.00	R 136.15
Trade value after life	R 8 835.10	R 874 674.53	R 87.47	R 10 281.33	R 1 130 946.69	R 113.09
COST:	**Per kW**	**Per Year**	**Per hour**	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 3 792.00	R 37 540.80	R 37.54	R 3 412.80	R 37 540.80	R 37.54
Fixed cost	R 3 290.72	R 32 578.11	R 32.58	R 3 821.71	R 42 038.83	R 42.04
Maintanance cost	R 1 869.54	R 18 508.48	R 18.51	R 2 168.49	R 23 853.39	R 23.85
Repair cost	R 7 495.87	R 74 209.08	R 74.21	R 8 729.97	R 96 029.62	R 96.03
TOTAL COST	**R 16 448.13**	**R 162 836.46**	**R 162.84**	**R 18 132.97**	**R 199 462.64**	**R 199.46**

FIXED COST:	Per kW	Cost per Year	Cost per hour	Per kW	Cost per Year	Cost per hour
- Depreciation	R 1 801.27	R 17 832.55	R 17.83	R 2 096.12	R 23 057.33	R 23.06
- Lisence	R 29.09	R 288.00	R 0.29	R 26.18	R 288.00	R 0.29
- Insurance	R 486.79	R 4 819.19	R 4.82	R 566.47	R 6 231.17	R 6.23
- Financing cost	R 973.57	R 9 638.37	R 9.64	R 1 132.94	R 12 462.33	R 12.46
TOTAL	**R 3 290.72**	**R 32 578.11**	**R 32.58**	**R 3 821.71**	**R 42 038.83**	**R 42.04**

MAINTANANCE	Hours	Price	Cost/hour	Hours	Price	Cost/hour
Oil:			**R 7.23**			**R 6.47**
- Machine oil	150	R 705.98	R 4.71	150	R 705.98	R 4.71
- Transmission oil	1500	R 3 777.68	R 2.52	1500	R 2 644.38	R 1.76
Filters:			**R 8.03**			**R 6.84**
- Air filter (primary)	600	R 852.46	R 1.42	600	R 852.46	R 1.42
- Air filter (sekondary)	600	R 1 344.59	R 2.24	600	R 1 344.59	R 2.24
- Diesel filter	450	R 290.37	R 0.65	450	R 290.37	R 0.65
- Hidrolic oil filter	450	R 510.92	R 1.14	450	R 354.27	R 0.79
- Oil filter	150	R 171.71	R 1.14	150	R 171.71	R 1.14
- Transmission oil filter	1500	R 385.65	R 0.26	1500	R 385.65	R 0.26
- Air conditioner filter	750	R 886.96	R 1.18	750	R 255.66	R 0.34
Tyres:			**R 2.72**			**R 9.48**
- Set at front	3000	R 3 062.00	R 1.02	3000	R 10 842.00	R 3.61
- Set at rear	4000	R 6 814.00	R 1.70	4000	R 23 472.00	R 5.87
Battery:	2000	R 1 064.91	**R 0.53**	2000	R 2 129.82	**R 1.06**
TOTAL			**R 18.51**			**R 23.85**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time	Factor	List Price	Cost/life time
- Year 1	0.0150	R 1 170 000.00	R 17 550.00	0.0150	R 1 512 800.00	R 22 692.00
- Year 2	0.0305	R 1 228 500.00	R 37 469.25	0.0305	R 1 588 440.00	R 48 447.42
- Year 3	0.0415	R 1 289 925.00	R 53 531.89	0.0415	R 1 667 862.00	R 69 216.27
- Year 4	0.0508	R 1 354 421.25	R 68 804.60	0.0508	R 1 751 255.10	R 88 963.76
- Year 5	0.0592	R 1 422 142.31	R 84 190.82	0.0592	R 1 838 817.86	R 108 858.02
- Year 6	0.0667	R 1 493 249.43	R 99 599.74	0.0667	R 1 930 758.75	R 128 781.61
- Year 7	0.0738	R 1 567 911.90	R 115 711.90	0.0738	R 2 027 296.69	R 149 614.50
- Year 8	0.0804	R 1 646 307.49	R 132 363.12	0.0804	R 2 128 661.52	R 171 144.39
- Year 9	0.0866	R 1 728 622.87	R 149 698.74	0.0866	R 2 235 094.60	R 193 559.19
- Year 10	0.0927	R 1 815 054.01	R 168 255.51	0.0927	R 2 346 849.33	R 217 552.93
TOTAL			**R 927 175.57**			**R 1 198 830.08**

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE			JOHN DEERE		
DETAILS	7230R			8295 R		
kW	171			217		
Annual hours in use	1000			1000		
PRICE:	**Per kW**	**Total**	**Per hour**	**Per kW**	**Total**	**Per hour**
List price	R 1 424.56	R 243 600.00	R 24.36	R 12 918.89	R 2 803 400.00	R 280.34
Purchase price	R 1 282.11	R 219 240.00	R 21.92	R 11 627.00	R 2 523 060.00	R 252.31
Trade value after life	R 1 327.08	R 226 931.08	R 22.69	R 12 034.89	R 2 611 570.61	R 261.16
COST:	**Per kW**	**Per Year**	**Per hour**	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 2 634.44	R 45 048.96	R 45.05	R 2 075.99	R 45 048.96	R 45.05
Fixed cost	R 167.55	R 2 865.17	R 2.87	R 1 380.03	R 29 946.67	R 29.95
Maintanance cost	R 1 980.60	R 33 868.31	R 33.87	R 2 711.70	R 58 843.84	R 58.84
Repair cost	R -851.70	R -14 564.04	R -14.56	R 7 525.98	R 163 313.77	R 163.31
TOTAL COST	**R 3 930.90**	**R 67 218.41**	**R 67.22**	**R 13 693.70**	**R 297 153.23**	**R 297.15**

FIXED COST:	Per kW	Cost per Year	Cost per hour	Per kW	Cost per Year	Cost per hour
- Depreciation	R -44.98	R -769.11	R -0.77	R -407.88	R -8 851.06	R -8.85
- Lisence	R 16.84	R 288.00	R 0.29	R 13.27	R 288.00	R 0.29
- Insurance	R 65.23	R 1 115.43	R 1.12	R 591.55	R 12 836.58	R 12.84
- Financing cost	R 130.46	R 2 230.86	R 2.23	R 1 183.09	R 25 673.15	R 25.67
TOTAL	**R 167.55**	**R 2 865.17**	**R 2.87**	**R 1 380.03**	**R 29 946.67**	**R 29.95**

MAINTANANCE	Hours	Price	Cost/hour	Hours	Price	Cost/hour
Oil:			**R 13.02**			**R 15.64**
- Machine oil	150	R 1 470.80	R 9.81	150	R 1 647.30	R 10.98
- Transmission oil	1500	R 4 816.54	R 3.21	1500	R 6 988.71	R 4.66
Filters:			**R 4.44**			**R 4.62**
- Air filter (primary)	600	R 412.85	R 0.69	600	R 279.64	R 0.47
- Air filter (sekondary)	600	R 214.45	R 0.36	600	R 566.23	R 0.94
- Diesel filter	450	R 300.62	R 0.67	450	R 300.62	R 0.67
- Hidrolic oil filter	450	R 378.18	R 0.84	450	R 378.18	R 0.84
- Oil filter	150	R 210.62	R 1.40	150	R 210.62	R 1.40
- Transmission oil filter	1500	R -	R -	1500	R -	R -
- Air conditioner filter	750	R 359.22	R 0.48	750	R 221.09	R 0.29
Tyres:			**R 15.35**			**R 37.52**
- Set at front	3000	R 10 842.00	R 3.61	3000	R 31 136.00	R 10.38
- Set at rear	4000	R 46 944.00	R 11.74	4000	R 108 568.00	R 27.14
Battery:	2000	R 2 129.82	**R 1.06**	2000	R 2 129.82	**R 1.06**
TOTAL			**R 33.87**			**R 58.84**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time	Factor	List Price	Cost/life time
- Year 1	0.0150	R 243 600.00	R 3 654.00	0.0150	R 2 803 400.00	R 42 051.00
- Year 2	0.0305	R 255 780.00	R 7 801.29	0.0305	R 2 943 570.00	R 89 778.89
- Year 3	0.0415	R 268 569.00	R 11 145.61	0.0415	R 3 090 748.50	R 128 266.06
- Year 4	0.0508	R 281 997.45	R 14 325.47	0.0508	R 3 245 285.93	R 164 860.52
- Year 5	0.0592	R 296 097.32	R 17 528.96	0.0592	R 3 407 550.22	R 201 726.97
- Year 6	0.0667	R 310 902.19	R 20 737.18	0.0667	R 3 577 927.73	R 238 647.78
- Year 7	0.0738	R 326 447.30	R 24 091.81	0.0738	R 3 756 824.12	R 277 253.62
- Year 8	0.0804	R 342 769.66	R 27 558.68	0.0804	R 3 944 665.32	R 317 151.09
- Year 9	0.0866	R 359 908.15	R 31 168.05	0.0866	R 4 141 898.59	R 358 688.42
- Year 10	0.0927	R 377 903.55	R 35 031.66	0.0927	R 4 348 993.52	R 403 151.70
TOTAL			**R 193 042.71**			**R 2 221 576.06**

TRACTOR COST (DETAIL)

MODEL	JOHN DEERE		
DETAILS	9560R		
kW	417		
Annual hours in use	1000		
PRICE:	**Per kW**	**Total**	**Per hour**
List price	R 11 550.84	R 4 816 700.00	R 481.67
Purchase price	R 10 395.76	R 4 335 030.00	R 433.50
Trade value after life	R 10 760.45	R 4 487 105.71	R 448.71
COST:	**Per kW**	**Per Year**	**Per hour**
Operator's cost	R 1 296.37	R 54 058.75	R 54.06
Fixed cost	R 1 228.93	R 51 246.45	R 51.25
Maintanance cost	R 2 075.77	R 86 559.44	R 86.56
Repair cost	R 7 077.79	R 295 143.68	R 295.14
TOTAL COST	**R 11 678.86**	**R 487 008.32**	**R 487.01**

FIXED COST:	Per kW/Year	Cost per Year	Cost per hour
- Depreciation	R -364.69	R -15 207.57	R -15.21
- Lisence	R 6.91	R 288.00	R 0.29
- Insurance	R 528.91	R 22 055.34	R 22.06
- Financing cost	R 1 057.81	R 44 110.68	R 44.11
TOTAL	**R 1 228.93**	**R 51 246.45**	**R 51.25**

MAINTANANCE	Hours	Price	Cost/hour
Oil:			**R 20.88**
- Machine oil	150	R 2 470.94	R 16.47
- Transmission oil	1500	R 6 610.94	R 4.41
Filters:			**R 10.33**
- Air filter (primary)	600	R 875.02	R 1.46
- Air filter (sekondary)	600	R 907.62	R 1.51
- 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 488.09	R 0.33
- Air conditioner filter	750	R 233.36	R 0.31
Tyres:			**R 54.28**
- Set at front	4000	R 108 568.00	R 27.14
- Set at rear	4000	R 108 568.00	R 27.14
Battery:	2000	R 2 129.82	**R 1.06**
TOTAL			**R 86.56**

MAINTAIN & REPAIR	Factor	List Price	Cost/life time
- Year 1	0.0150	R 4 816 700.00	R 72 250.50
- Year 2	0.0305	R 5 057 535.00	R 154 254.82
- Year 3	0.0415	R 5 310 411.75	R 220 382.09
- Year 4	0.0508	R 5 575 932.34	R 283 257.36
- Year 5	0.0592	R 5 854 728.95	R 346 599.95
- Year 6	0.0667	R 6 147 465.40	R 410 035.94
- Year 7	0.0738	R 6 454 838.67	R 476 367.09
- Year 8	0.0804	R 6 777 580.61	R 544 917.48
- Year 9	0.0866	R 7 116 459.64	R 616 285.40
- Year 10	0.0927	R 7 472 282.62	R 692 680.60
TOTAL		**R**	**3 817 031.24**

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 5090 E **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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	9227	61510	9592	60901	9592	60901	615100	401464	18946664
2	1.103	0.980	1.081	0.031	18761	61510	20276	60298	29868	121199		374624	10037782
3	1.158	0.971	1.124	0.042	25527	61510	28681	59701	58549	180900		352092	7174471
4	1.216	0.961	1.168	0.051	31247	61510	36499	59110	95048	240010		332231	5849883
5	1.276	0.951	1.214	0.059	36414	61510	44219	58525	139267	298535		314309	5153162
6	1.340	0.942	1.262	0.067	41027	61510	51794	57945	191061	356480		297908	4775460
7	1.407	0.933	1.312	0.074	45394	61510	59577	57371	250638	413851		282759	4586367
8	1.477	0.923	1.364	0.080	49454	61510	67475	56803	318113	470655		268671	**4519028**
9	1.551	0.914	1.418	0.087	53268	61510	75557	56241	393670	526896		255504	4536459
10	1.629	0.905	1.475	0.093	57020	61510	84082	55684	477752	582580		243149	4618236

JOHN DEERE 6105 M **78 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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	13611	90740	14150	89842	14150	89842	907400	573529	29915083
2	1.103	0.980	1.081	0.031	27676	90740	29911	88952	44061	178794		534874	15782770
3	1.158	0.971	1.124	0.042	37657	90740	42311	88071	86372	266865		502435	11232309
4	1.216	0.961	1.168	0.051	46096	90740	53844	87199	140216	354064		473852	9116455
5	1.276	0.951	1.214	0.059	53718	90740	65232	86336	205448	440400		448070	7992314
6	1.340	0.942	1.262	0.067	60524	90740	76407	85481	281854	525882		424485	7371352
7	1.407	0.933	1.312	0.074	66966	90740	87888	84635	369743	610516		402707	7047144
8	1.477	0.923	1.364	0.080	72955	90740	99540	83797	469283	694313		382463	6914063
9	1.551	0.914	1.418	0.087	78581	90740	111462	82967	580745	777280		363548	**6913680**
10	1.629	0.905	1.475	0.093	84116	90740	124039	82146	704784	859426		345805	7013549

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 6140 M **99 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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	17550	117000	18245	115842	18245	115842	1170000	698647	42862820
2	1.103	0.980	1.081	0.031	35685	117000	38568	114695	56813	230536		650876	22477903
3	1.158	0.971	1.124	0.042	48555	117000	54555	113559	111368	344095		610817	15897296
4	1.216	0.961	1.168	0.051	59436	117000	69426	112435	180794	456530		575545	12815643
5	1.276	0.951	1.214	0.059	69264	117000	84110	111321	264904	567851		543750	11155743
6	1.340	0.942	1.262	0.067	78039	117000	98519	110219	363423	678071		514683	10215774
7	1.407	0.933	1.312	0.074	86346	117000	113323	109128	476745	787199		487860	9698879
8	1.477	0.923	1.364	0.080	94068	117000	128347	108048	605092	895246		462942	9453581
9	1.551	0.914	1.418	0.087	101322	117000	143719	106978	748812	1002224		439674	**9396077**
10	1.629	0.905	1.475	0.093	108459	117000	159935	105919	908747	1108143		417863	9479473

JOHN DEERE 6150 M **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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	22692	151280	23591	149782	23591	149782	1512800	876549	58234793
2	1.103	0.980	1.081	0.031	46140	151280	49867	148299	73458	298081		816155	30458156
3	1.158	0.971	1.124	0.042	62781	151280	70540	146831	143998	444912		765531	21481525
4	1.216	0.961	1.168	0.051	76850	151280	89767	145377	233765	590289		720973	17265076
5	1.276	0.951	1.214	0.059	89558	151280	108753	143938	342518	734227		680821	14980790
6	1.340	0.942	1.262	0.067	100904	151280	127384	142513	469902	876740		644128	13674034
7	1.407	0.933	1.312	0.074	111645	151280	146526	141102	616428	1017841		610279	12940839
8	1.477	0.923	1.364	0.080	121629	151280	165951	139705	782379	1157546		578844	12575318
9	1.551	0.914	1.418	0.087	131008	151280	185828	138321	968207	1295867		549501	**12463563**
10	1.629	0.905	1.475	0.093	140237	151280	206795	136952	1175002	1432819		522005	12541623

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 7230R **171 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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	3654	24360	3799	24119	3799	24119	243600	172141	6122926
2	1.103	0.980	1.081	0.031	7430	24360	8030	23880	11829	47999		146028	4103429
3	1.158	0.971	1.124	0.042	10109	24360	11359	23644	23187	71642		128962	3241650
4	1.216	0.961	1.168	0.051	12375	24360	14455	23409	37642	95052		116133	2778989
5	1.276	0.951	1.214	0.059	14421	24360	17512	23178	55154	118230		105831	2507354
6	1.340	0.942	1.262	0.067	16248	24360	20512	22948	75666	141178		97226	2343366
7	1.407	0.933	1.312	0.074	17978	24360	23594	22721	99261	163899		89850	2248077
8	1.477	0.923	1.364	0.080	19585	24360	26722	22496	125983	186395		83408	2199718
9	1.551	0.914	1.418	0.087	21096	24360	29923	22273	155906	208668		77703	**2185477**
10	1.629	0.905	1.475	0.093	22582	24360	33299	22053	189206	230721		72596	2197961

JOHN DEERE 8295 R **217 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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	42051	280340	43716	277564	43716	277564	2803400	1697194	100267576
2	1.103	0.980	1.081	0.031	85504	280340	92410	274816	136127	552381		1422073	61398957
3	1.158	0.971	1.124	0.042	116341	280340	130718	272095	266845	824476		1243384	46502602
4	1.216	0.961	1.168	0.051	142413	280340	166349	269401	433194	1093877		1109765	38768213
5	1.276	0.951	1.214	0.059	165961	280340	201533	266734	634727	1360611		1002961	34233481
6	1.340	0.942	1.262	0.067	186987	280340	236058	264093	870785	1624704		914156	31427778
7	1.407	0.933	1.312	0.074	206891	280340	271529	261478	1142315	1886182		838356	29687815
8	1.477	0.923	1.364	0.080	225393	280340	307528	258889	1449843	2145071		772434	28657163
9	1.551	0.914	1.418	0.087	242774	280340	344361	256326	1794204	2401397		714292	28130384
10	1.629	0.905	1.475	0.093	259875	280340	383216	253788	2177420	2655186		662450	**27988014**

OPTIMAL TRACTOR REPLACEMENT

JOHN DEERE 9560R **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
	5	1	(1) x (2)		R	R	(3) x (5)	(6) x (2)	R	R	R	R	R
1	1.050	0.990	1.040	0.015	17550	117000	18245	115842	18245	115842	4816700	1264726	351741214
2	1.103	0.980	1.081	0.031	35685	117000	38568	114695	56813	230536		972739	189898029
3	1.158	0.971	1.124	0.042	48555	117000	54555	113559	111368	344095		791232	133000545
4	1.216	0.961	1.168	0.051	59436	117000	69426	112435	180794	456530		660617	103726997
5	1.276	0.951	1.214	0.059	69264	117000	84110	111321	264904	567851		559914	85887843
6	1.340	0.942	1.262	0.067	78039	117000	98519	110219	363423	678071		479069	73914770
7	1.407	0.933	1.312	0.074	86346	117000	113323	109128	476745	787199		412423	65370659
8	1.477	0.923	1.364	0.080	94068	117000	128347	108048	605092	895246		356456	59011204
9	1.551	0.914	1.418	0.087	101322	117000	143719	106978	748812	1002224		308817	54134647
10	1.629	0.905	1.475	0.093	108459	117000	159935	105919	908747	1108143		267855	**50317616**

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	3.20	4.58	5.88	7.20	8.51	9.89	11.31	12.79	14.38	79.25
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	5.90	8.43	10.85	13.24	15.70	18.21	20.85	23.59	26.48	146.02
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	3.20	4.59	5.89	7.20	8.53	9.92	11.30	12.82	14.38	79.32
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	4.28	4.98	5.61	6.20	6.76	7.36	7.95	8.55	9.18	64.04
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	5.17	6.01	6.76	7.46	8.16	8.86	9.58	10.30	11.08	77.16
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	3.44	4.00	4.50	4.97	5.42	5.90	6.37	6.87	7.37	51.37
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	5.48	7.08	8.51	9.88	11.24	12.62	14.04	16.10	17.00	105.15
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	6.85	8.84	10.63	12.35	14.05	15.77	17.53	19.37	21.25	130.62
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	5.37	7.67	9.86	12.05	14.27	16.58	18.95	36.94	13.57	137.77
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	7.31	8.51	9.56	10.56	11.55	12.53	13.55	14.58	15.67	109.19
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	2.56	2.99	3.36	3.71	4.06	4.41	4.76	5.13	5.51	38.35
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	4.29	6.14	7.90	9.64	11.42	13.25	15.17	17.17	19.27	106.26
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	4.28	6.13	7.88	9.63	11.41	13.24	15.14	17.14	19.25	106.12
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	4.28	6.13	7.88	9.63	11.41	13.24	15.14	17.14	19.25	106.12
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	2.68	3.84	4.93	6.02	7.13	8.28	9.47	10.73	12.04	66.37
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	2.43	3.47	4.46	5.45	6.45	7.50	8.58	9.69	10.89	60.06

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	1.49	2.14	2.74	3.35	3.97	4.61	5.28	5.97	6.70	36.95
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	3.16	4.29	5.34	6.36	7.38	8.44	9.50	10.64	11.79	68.53
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	4.73	6.43	8.00	9.52	11.05	12.62	14.24	15.91	17.69	102.64
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	3.64	4.95	6.16	7.33	8.51	9.72	10.96	12.25	13.61	79.02
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	10.31	12.01	13.50	14.90	16.30	17.69	19.11	20.58	22.09	154.05
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	3.21	4.60	5.92	7.22	8.56	9.93	11.37	12.87	14.44	79.63
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	8.93	12.14	15.10	17.98	20.87	23.83	26.88	30.04	33.35	193.75
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	4.27	6.11	7.86	9.60	11.37	13.20	15.10	17.09	19.19	105.80
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	10.11	11.77	13.23	14.62	15.98	17.35	18.74	36.94	23.27	169.44
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	4.31	5.01	5.63	6.21	6.79	7.37	7.96	8.57	9.20	64.19
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	3.42	4.42	5.33	6.17	7.02	7.88	8.77	9.68	10.63	65.31
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	4.31	5.02	5.64	6.22	6.80	7.38	7.98	8.60	9.23	64.34
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	3.21	4.60	5.92	7.22	8.56	9.93	11.37	12.87	14.44	79.63
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	1.48	1.73	1.93	2.15	2.34	2.55	2.76	2.95	3.18	22.16
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	1.69	2.21	2.65	3.08	3.50	3.93	4.38	4.82	5.27	32.51

Source: Institute for Agricultural Engineering

TOTAL CULTIVATING 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	395.95		395.95		395.95	395.95	395.95	395.95				395.95	395.95	
Deep chisel		404.77		404.77			480.21							
Disk	353.86		353.86		353.86	353.86	353.86	353.86	353.86	353.86			353.86	
Till		208.35	208.35	208.35	208.35	208.35	208.35	208.35	208.35	208.35		208.35	208.35	
Till			208.35					208.35					208.35	
Till								208.35					208.35	
Rolmoer		138.60		138.60						138.60				
Chisel plough									187.19					
Chisel plough									187.19					
Drill	515.18	515.18	515.18	515.18	515.18	515.18				515.18	323.60			
Wheat plant								511.41	511.41			511.41	511.41	
Spray	102.17	102.17	102.17	102.17	102.17	102.17		102.17	102.17	102.17	102.17		102.17	
Spray	102.17	102.17								102.17	102.17			
Wead cultivate	183.39	183.39				183.39				183.39	102.17			
Fertilizer applicate	165.93	165.93	165.93	165.93			165.93				165.93			
Spread														165.93
Mow														369.91
Harrow														114.82
Bale														399.09
Potatoes:														
- Planter							764.19							
- Ridger							524.10							
- Lifter					673.11		638.01							
- Sort							1792.73							
TOTAL (Rand/ha)	**R 1 819**	**R 1 821**	**R 1 950**	**R 1 535**	**R 2 249**	**R 1 759**	**R 5 323**	**R 1 988**	**R 1 550**	**R 1 604**	**R 796**	**R 1 116**	**R 1 988**	**R 1 050**

Self harvest: (Rand/ha)

- Trail harvester	R 413.21	R 413.21	R 413.21	R 413.21						
- Combine harvester	R 595.91	R 595.91	R 595.91	R 595.91	R 563.02	R 563.02		R 563.02	R 563.02	R 563.02

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	17.1		17.1		17.1	17.1	17.1	17.1				17.1	17.1	
Deep rip		24.3		24.3			24.3							
Disk	9.5		9.5		9.5	9.5	9.5	9.5	9.5	9.5			9.5	
Till		7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7		7.7	7.7	
Till			7.7					7.7					7.7	
Till								7.7					7.7	
Rolmoer		2.8		2.8						2.8				
Chisel plough									7.2					
Chisel plough									7.2					
Drill	6.0	6.0	6.0	6.0	6.0	6.0				6.0	6.0			
Wheat plant								8.0	8.0			8.0	8.0	
Spray	1.4	1.4	1.4	1.4	1.4	1.4		1.4	1.4	1.4	1.4		1.4	
Spray	1.4	1.4								1.4	1.4			
Wead cultivate	6.4	6.4				6.4				6.4	6.4			
Fertilizer applicate	1.7	1.7	1.7	1.7			1.7				1.7			
Spread														1.7
Mow														10.4
Harrow														4.2
Bale														8.3
Potatoes:														
- Planter							22.8							
- Ridger							22.8							
- Lifter					7.6		26.0							
- Sort														
TOTAL (Rand/ha)	**43.5**	**51.8**	**51.1**	**44.0**	**49.2**	**48.1**	**131.8**	**59.2**	**40.9**	**35.2**	**16.9**	**32.8**	**59.2**	**24.7**
	R 497.98	**R 593.32**	**R 585.87**	**R 503.77**	**R 564.07**	**R 551.01**	**R 1 510.40**	**R 677.93**	**R 469.25**	**R 403.38**	**R 194.09**	**R 376.34**	**R 677.93**	**R 283.11**

Self harvest: (Liter/ha)

- Trail harvester	11.3	11.3	11.3	11.3						
- Combine harvester	9.0	9.0	9.0	9.0	9.0	9.0		9.0	9.0	9.0

Self harvest: (Rand/ha)

- Trail harvester	R 129.03	R 129.03	R 129.03	R 129.03						
- Combine harvester	R 103.17	R 103.17	R 103.17	R 103.17	R 103.17	R 103.17		R 103.17	R 103.17	R 103.17

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	33.28		33.28		33.28	33.28	33.28	33.28				33.28	33.28	
Deep rip		48.00		48.00			48.00							
Disk	17.18		17.18		17.18	17.18	17.18	17.18	17.18	17.18			17.18	
Till		14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98	14.98		14.98	14.98	
Till			14.98					14.98					14.98	
Till								14.98					14.98	
Chisel plough		18.63		18.63						18.63				
Chisel plough									18.63					
Chisel plough									18.63					
Drill	70.84	70.84	70.84	70.84	70.84	70.84				70.84	70.84			
Wheat plant								76.20	76.20			76.20	76.20	
Spray	23.30	23.30	23.30	23.30	23.30	23.30		23.30	23.30	23.30	23.30		23.30	
Spray	23.30	23.30								23.30	23.30			
Wead cultivate	17.13	17.13				17.13				17.13	17.13			
Fertilizer applicate	43.24	43.24	43.24	43.24			43.24				43.24			
Spread														43.24
Mow														30.26
Harrow														14.31
Bale														23.85
Potatoes:														
- Planter							143.96							
- Ridger							57.93							
- Lifter					28.87		57.93							
- Sort														
TOTAL (Rand/ha)	**228.27**	**259.43**	**217.80**	**219.00**	**188.45**	**176.71**	**416.51**	**194.91**	**168.93**	**185.37**	**177.82**	**124.46**	**194.91**	**111.66**

Self harvest: (Rand/ha)

- Trail harvester	41.5	41.5	41.5	41.5						
- Combine harvester	15.9	15.9	15.9	15.9	15.9	15.9		15.9	15.9	15.9

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							23.47					11.74	0.00	11.74
10 Ton bin BP	71.32	71.32	71.32	71.32	71.32	71.32		71.32	71.32	71.32	71.32			
Fuel cost														
10 Ton flat BP							11.59					5.79	0.00	5.79
10 Ton bin BP	34.76	34.76	34.76	34.76	34.76	34.76		34.76	34.76	34.76	34.76			
Operator's cost														
10 Ton flat BP							3.43					1.71	0.00	1.71
10 Ton bin BP	10.28	10.28	10.28	10.28	10.28	10.28	3.43	10.28	10.28	10.28	10.28			