



Guide to machinery costs 2013/14



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CONTENTS

1. Introduction	1–8	5. Four-wheel drive orchard tractors	20–22
1.1 Notes on machinery costs	1	5.1 Low power demand	20
1.1.1 <i>Depreciation</i>	1	5.2 Medium power demand	21
1.1.2 <i>Interest</i>	1	5.3 High power demand	22
1.1.3 <i>Insurance and licence</i>	2	6. Tillage equipment	23–25
1.1.4 <i>Repairs and maintenance</i>	2	6.1 Rippers	23
1.1.5 <i>Fuel</i>	2	6.1.1 <i>Medium duty</i>	23
1.2 The cost per hectare	2	6.1.2 <i>Heavy duty</i>	23
1.2.1 <i>Cost per unit of measure</i>	3	6.2 Mouldboard ploughs with shear-bolt protection	23
1.2.2 <i>Duration time per hectare and per kilometre</i>	3	6.2.1 <i>Mounted</i>	23
1.2.3 <i>Cost per hectare</i>	3	6.2.2 <i>Mounted reversible</i>	23
Table 1 Tractor and Implement	4	6.3 Mouldboard ploughs with hydraulic, spring or other plough protection	23
Table 2 Self-propelled combine harvester—maize	4	6.3.1 <i>Mounted, semi-mounted or trailed</i>	23
Table 3 Self-propelled combine harvester—wheat	5	6.4 Disc ploughs	23
Table 4 Tractor and trailer	6	6.5 Spring-tine chisel ploughs	24
Table 5 Tractor and trailer	6	6.6 Disc harrows	24
1.3 References	8	6.6.1 <i>Offset disc light</i>	24
2. Two-wheel drive tractors	9–11	6.6.2 <i>Trailed offset with wheels</i>	24
2.1 Low power demand	9	6.6.3 <i>Trailed offset with wheels—oil bath</i>	24
2.2 Medium power demand	10	6.6.4 <i>Tandem discs</i>	24
2.3 High power demand	11	6.6.5 <i>Semimounted and trailed one-way</i>	24
3. Four-wheel drive tractors	12–17	6.7 Rotary harrows	25
3.1 Low power demand	12, 13	6.7.1 <i>Medium duty</i>	25
3.2 Medium power demand	14, 15	6.7.2 <i>Heavy duty</i>	25
3.3 High power demand	16, 17	6.8 Power harrows	25
4. Two-wheel drive orchard tractors	18–19	6.9 Ridgers	25
4.1 Low power demand	18	6.9.1 <i>Disc ridgers</i>	25
4.2 Medium power demand	18	6.9.2 <i>Shear ridgers</i>	25
4.3 High power demand	19	6.10 Rotavators	25

7.	Tine implements	26	10.1	Mowers	34
7.1	Cultivators	26	10.1.1	<i>Cutterbar</i>	34
7.1.1	<i>Row crop</i>	26	10.1.2	<i>Disc and drum</i>	34
7.1.2	<i>Field cultivators—shank tillers</i>	26	10.2	Mower conditioners	35
7.1.3	<i>Field cultivators—vibro tillers</i>	26	10.2.1	<i>Mounted</i>	35
			10.2.2	<i>Trailed</i>	35
8.	Planting equipment	27–30	10.3	Slashers	35
8.1	Single-kernel planters	27, 28	10.3.1	<i>Heavy duty</i>	35
8.1.1	<i>Mounted</i>	27	10.3.2	<i>Extra heavy duty</i>	35
8.1.2	<i>Trailed</i>	28	10.4	Haymakers	35
8.2	Seed drills	29	10.5	Hay rakes and tedders	36
8.2.1	<i>Mounted</i>	29	10.5.1	<i>Finger-wheel rakes</i>	36
8.2.2	<i>Trailed—conventional</i>	29	10.5.2	<i>PTO-powered rakes</i>	36
8.2.3	<i>Trailed—no till</i>	29	10.6	Hay balers	37
8.3	Wheat planters	30	10.6.1	<i>Square balers</i>	37
8.4	Potato planters	30	10.6.2	<i>Round balers</i>	37
8.5	Vegetable transplanters	30	10.7	Bale handling equipment	37
8.6	Fine-seed seeders	30	10.7.1	<i>Round bales</i>	37
8.7	Land rollers	30	10.7.2	<i>Bale wrappers</i>	37
			10.7.3	<i>Bale shredders</i>	37
9.	Plant nutrition and pest control equipment	31–33	11.	Harvesting equipment	38
9.1	Fertiliser spreaders	31	11.1	Trailed combines	38
9.1.1	<i>Mounted</i>	31	11.2	Forage harvesters	38
9.1.2	<i>Trailed</i>	32	11.2.1	<i>Precision chop</i>	38
9.2	Manure spreaders	32	11.2.2	<i>Flail type</i>	38
9.3	Lime spreaders	32	11.3	Threshers	38
9.4	Mist blowers	32	11.4	Potato lifters	38
9.4.1	<i>Mounted with PTO drive</i>	32	12.	Feed-processing equipment	39
9.4.2	<i>Trailed with PTO drive</i>	32	12.1	Hammermills	39
9.5	Boom sprayers	33	12.1.1	<i>Electric and PTO driven—electric motor excluded</i>	39
9.5.1	<i>Mounted</i>	33	12.1.2	<i>Trailed with intake mechanisms</i>	39
9.5.2	<i>Trailed</i>	33	12.2	Feed mixers	39
10.	Hay and silage machinery	34–37			

12.2.1	<i>Wagon mixers</i>	39	16.3	Four-wheeled trailers	49
12.2.2	<i>Vertical mixers</i>	39	16.4	Drawn fire-fighting water carts without pumps and plumbing	49
12.3	Rollermillers—motor included	39			
13.	Earth-moving equipment	40	17.	LDVs	50–51
13.1	Front-end loaders	40	17.1	Two-wheel drive	50
13.2	Rear-mounted graders	40	17.1.1	<i>Petrol</i> —single cab	50
13.3	Dam scoops	40	17.1.2	<i>Diesel</i> —single cab	50
13.4	Rear-mounted post diggers	40	17.1.3	<i>Club cab</i>	50
			17.1.4	<i>Double cab</i>	50
14.	Self-propelled combine harvesters	41–43	17.2	Four-wheel drive	51
14.1a	Maize combine harvesters—engines	41	17.2.1	<i>Single cab</i>	51
14.1b	Maize combine harvesters—heads	42	17.2.2	<i>Club cab</i>	51
14.1c	Maize combine harvesters—engines and heads	42	17.2.3	<i>Double cab</i>	51
14.2a	Wheat combine harvesters—engines	43	18.	Trucks and trucks with trailers	52
14.2b	Wheat combine harvesters—heads	44	18.1	Single differential with dropsides	52
14.2c	Wheat combine harvesters—engines and heads	44	18.2	Double differential with dropsides	52
			18.3	Dual axle—horse only	52
15.	Cane and timber equipment	45–47	18.4	Single differential with semi-trailer	52
15.1	Truck trailers (Costs in cents per km)	45	18.5	6 x 4 truck tractor with timber trailer	52
15.1.1	<i>Cane trailers</i>	45	18.6	6 x 4 truck tractor with sugar cane single-spiller trailer	52
15.1.2	<i>Timber trailers</i>	45			
15.2	Tractor trailers with brakes	46	19.	Electric motors	53–56
15.2.1	<i>Cane trailers</i>	46	19.1	Electric motors—1,1kW to 4,0 kW—1 000 rpm 6-pole high efficiency	53
15.2.2	<i>Timber trailers</i>	46	19.2	Electric motors—5,5kW to 18,5 kW—1 000 rpm 6-pole high efficiency	54
15.3	Cane and timber loaders	47	19.3	Electric motors—22,0kW to 75,0 kW—1 000 rpm 6-pole high efficiency	55
15.3.1	<i>Cane loaders</i>	47	19.4	Electric motors—90,0 to 185,0 kW—1 000 rpm 6-pole high efficiency	56
15.3.2	<i>Timber loaders</i>	47			
16.	Trailers	48–49	20.	Field capacities of agricultural machinery	57–65
16.1	Two-wheeled trailers	48	20.1	Introduction	57
16.1.1	<i>Flatbed</i>	48	20.2	Table of field capacities	58
16.1.2	<i>Dropsides</i>	48			
16.2	Tip trailers slow speed	48			

1. INTRODUCTION

The *Guide to Machinery Costs* is compiled to assist farmers, extension personnel and others involved in costing farm operations, and machinery decision making. These costs are updated annually and are based on available technical and financial data, in particular prices published in *Agfacts*. Prices of agricultural machinery vary between firms and regions.

The performance of machines also varies under different working conditions. It is therefore important that the user interprets these costs intelligently for a particular region, or set of circumstances.

It is important to note that many machines are no longer available on the market, while new machines have entered the market. Equipment marked with an asterisk (*) represents an alternative/higher price for the implement in question, while equipment which is no longer available is marked with a double asterisk (**). The price of this equipment is increased by an appropriate percentage based on the previous year's price, and this equipment will not be listed in the following years. An adjustment to the expected lifespan of the equipment is made from time to time, based on information received from researchers, manufacturers and users of equipment. Any information of this nature is welcome, together with any constructive criticism which can assist in improving this publication.

Compilation of the *Guide to Machinery Costs* would not have been possible without the valuable assistance of the manufacturers and suppliers of agricultural machinery, who have kindly provided the necessary technical and financial information.

The initial computer programs were developed by Messers K.P. Archibald and G.F. Ortmann, formally of the Division of Agricultural Production Economics—Natal region. These programs were converted into an IBM compatible micro-computer version by Mr. R.J. Gordijn, and further adapted by Mr P.A. Gordijn and Mr J.C. Mentz. This version was converted into Excel by Ms P.C. Pennefather. Further modifications and enhancements have been made by Ms C.G. Archer. The guide has been updated this year by Mr P.A. Lubbe, (Department of Agriculture, Forestry and Fisheries), and Ms C.G. Archer, (KwaZulu-Natal Department of Agriculture). Past valuable contributions have been made by Mr E.N.C. Whitehead and Mr P.J. Burger.

1.1 Notes on machinery costs

The costs of owning and operating machinery can be divided into two categories, namely fixed costs and variable costs.

Fixed costs are related to machinery ownership and occur regardless of whether the machinery is used or not. Fixed costs per hour of usage are inversely proportional to the extent of annual usage. Variable costs relate directly to the degree of utilisation of the machine and include factors such as repairs and maintenance costs, fuel and lubricants.

The division into fixed and variable costs is not always an absolute one. There is a valid argument for considering depreciation charges as being made up of two main components, one of which is determined by obsolescence and is a fixed cost, and the other relates to "wear and tear" and is considerably influenced by the use of the machine. In this case depreciation could be considered to be a variable cost.

The cost figures in this *Guide to Machinery Costs* are AVERAGE figures excluding the current Value Added Tax, at the month of updating. They are based on the assumed life expectancies and annual usage, obtained from studies done in South Africa, Great Britain and the U.S.A. According to Culpin (1959), it is injudicious to assume a life expectancy beyond 15 years for any implement or machine. These figures are therefore suggested, and serve as a guideline where specific information is unavailable.

1.1.1 Depreciation

Depreciation is the reduction in value of a machine with the passage of time. There are various methods of calculating depreciation costs. The straight-line method gives a constant annual charge for depreciation throughout the lifespan of the machine, and this is the method used in the *Guide to Machinery Costs* to calculate the depreciation costs.

1.1.2 Interest

A charge for interest is included as a fixed cost because the money which is invested in machinery could have been invested in other productive enterprises or investments. The interest rate that is used in the *Guide to Machinery Costs* is the interest rate that can be obtained on a medium-term (5 year) investment.

The value of the machine decreases over time as reflected by annual depreciation charges. Consequently, the amount of money invested in the machine decreases, from the initial purchase price to the scrap value at the end of the machine's useful life. The interest charge takes this into account as it is based on the average investment during the lifespan of the machine.

1.1.3 Insurance and licence

These costs are based on current charges imposed by various insurance companies and the government. In some instances, insurance and licence charges are assumed to be a percentage of the average investment of the machine.

1.1.4 Repairs and maintenance

These costs are difficult to estimate as they vary greatly, depending on operating conditions, management, maintenance programmes, local costs, etc. It is generally agreed that repair costs will increase with age but are unlikely to increase proportionally. Repair costs per hour of use will increase with age but will tend to level off as the machine becomes older (Kepner *et.al.*,1978, p. 36).

Accurate estimates of repair costs are not easily obtainable. However, work done by the Directorate of Agricultural Engineering has been used where appropriate (see Reference 4). Repair costs are quoted as a percentage of the purchase price of the machinery, divided by the annual use. The percentages are kept constant over the lifespan of the machine, thereby obtaining an average cost during the machine's useful life. There are disadvantages to this method, however for general reference purposes it is the most practical method.

For further information on repairs and maintenance cost formulae consult the reference list, with particular attention to references 1 and 6.

1.1.5 Fuel

Fuel consumption is also a contentious issue and can vary greatly for different areas, machines and even operators. Here again, these figures are based on the results of surveys done in South Africa and the U.S. For further information consult references 1, 5 and 6.

There are three levels of power demand for tractors—light, medium and heavy—depending on the type of work being done. The fuel consumption is in litres per kW-hour and varies for each level of power demand. There is also a variation in the percentage of available kW that is used at each level. (See notes at the foot of each page.)

A single level of power demand is used for self-propelled combine harvesters. The fuel consumption is in litres per kW-hour and varies with the engine power (kW).

In the case of LDVs and trucks, the fuel usages per 100 km are the average figures supplied by the dealerships and manufacturers' standards. Clearly these consumption figures will vary for different vehicles, drivers and circumstances in general. The listed fuel usage figures are for information purposes only, and users of the guide have to adjust the fuel costs if their consumption figures are noticeably different.

The prices of diesel, petrol and oil were those prevailing on the highveld at the time of updating the guide. Users may need to adjust the fuel costs if current prices are significantly different from those used in the guide.

(See notes at the foot of each page.)

1.2 Cost per hectare

The following remarks have to be kept in mind concerning the costs of using tractors and implements.

- 1) The driver/operator and labour costs are not included in the listed costs
- 2) The costs of materials (e.g. baling twine, wire, seed, fertiliser) are not included in the listed costs.

1.2.1 Cost per unit of measure

Machinery costs included in this guide are listed below, together with the unit of measure.

Tractors	R/hour	(R/hr)	The cost per hour is based on clock hours and not tractor hours.
Implements	R/hour	(R/hr)	
Self-propelled combine harvesters	R/hour	(R/hr)	
Trailers	R/hour	(R/hr)	
LDVs	Cents/kilometre	(c/km)	
Trucks	Cents/kilometre	(c/km)	
Electric motors	R/Hour	(R/hr)	

If the necessary conversion factors are available, these costs can be translated into the cost per hectare, per ton, etc.

1.2.2 Duration time per hectare and per kilometre

The duration time per hectare depends upon the working width of an implement, the work speed, and the effectiveness of the machinery being used to carry out an activity. The following formula can be used to calculate the duration time per hectare:

$$\text{Duration per hectare } \left(\frac{\text{hr}}{\text{ha}} \right) = \frac{10\,000}{[\text{work width (m)} \times [\text{work speed } \left(\frac{\text{Km}}{\text{hr}} \right) \times 1\,000] \times \text{effectiveness (\%)}]}$$

To calculate a Rand per hectare value, information is required on the time requirement of the machine per hectare. Some rough guidelines to these figures are reported in the “Field Capacities” section at the end of this publication. Take note that this figure will largely depend on the shape of the field, speed of the machine, area, etc.

In the case of vehicles, cane and timber equipment, the duration time is given by the following formula:

$$\text{Duration per kilometer } \left(\frac{\text{hr}}{\text{Km}} \right) = \frac{1}{[\text{average speed } \left(\frac{\text{Km}}{\text{hr}} \right)]}$$

In other words, the duration time per kilometre is the inverse of the average speed.

1.2.3 Cost per hectare

To determine costs per hectare from the data in the *Guide to Machinery Costs*, the following formula can be used:

$$\text{Costs per hectare (R/ha)} = \text{Cost per hour (R/hr)} \times \text{Duration time per hectare (hr/ha)}$$

In other words, the duration time of the activity (e.g. ploughing, spraying, fertilising) is multiplied by the cost per hour.

The cost per hour will be that of the tractor, plus the cost of any implement used with the tractor to perform the activity (e.g. tractor and plough, tractor and boom sprayer, tractor plus trailed combine harvester). The cost of a self-propelled combine harvester will replace the cost of the tractor when appropriate.

The costs per ton (unit of yield) can be determined by using the following formula:

$$\text{Costs per ton (R/ton)} = \text{Cost per hectare (R/ha)} \div \text{Tons per hectare (ton/ha)}$$

$$\text{Costs per ton (R/ton)} = \text{Cost per hectare (R/ha)} \times \text{Hectare per ton (ha/ton)}$$

The following tables give some indication of how the information in the guide can be used to determine the costs of using equipment to perform a range of farming activities. Fixed costs are the total of depreciation, interest, licence and insurance. Variable costs consist of repairs and maintenance, fuel and oil, and tyres. No labour costs are included in these examples. Cost per hour is based on clock hours and not tractor meter hours. The costs in the following tables are taken from the *Guide to Machinery Costs 2013/14*.

TABLE 1: Tractor and implement

a) Activity duration times

Activity	Tractor			Description	Implement			Duration (hr/ha) (= 10 000 ÷ (A x B x 1 000 x C/100))
	Power (kW)	Drive (2W/4W)	Power demand (L/M/H)		Working width (m) (A)	Working speed (km/hr) (B)	Effectiveness (%) (C)	
Plough	98	4W	H	3-furrow disc plough	2,6	2,6	85	1,74
Plant	63	4W	M	3-row (1,5 m) maize planter	1,5	3,0	85	2,61
Fertilise	63	4W	M	4 000 ℓ double-disc fertiliser spreader	3,2	3,2	85	1,15
Spray	63	4W	L	12 m boom sprayer	12	6,0	85	0,16

b) Activity costs per hour and per hectare

Activity	Duration (hr/ha) (A)	Tractor		Tractor costs			Implement Description	Implement costs			Total costs	
		kW 2/4W	Power demand (L/M/H)	Fixed (R/hr)	Variable (R/hr)	Total (R/hr) (B)		Fixed (R/hr)	Variable (R/hr)	Total (R/hr) (C)	Per hour (D = B + C)	Per ha (D x A)
Plough	1,74	98 4W	H	77,35	292,96	370,31	3 furrow disc plough	13,73	10,41	24,14	394,45	686,34
Plant	2,61	63 4W	M	51,85	171,14	222,98	3 row (1,5 m) mtd. maize planter	49,25	27,17	76,42	299,41	781,46
Fertilise	1,15	63 4W	M	51,85	171,14	222,99	4 000 ℓ double-disc fert. spreader	459,22	308,43	767,65	990,64	1 139,24
Spray	0,16	63 4W	L	51,85	156,51	208,36	12 m mtd. (1 000 ℓ) boom sprayer	27,38	9,44	36,82	245,18	39,23

This information indicates that it costs R394,45/hour to plough using a 98kW (4-wheel) drive tractor which is pulling a 3 furrow disc plough, assuming that ploughing is a heavy operation. It indicates that it costs R781,46 to plant one hectare using a 63kW (4-wheel) drive tractor which is pulling a 3-row (1,5 m) mounted planter, assuming that planting is a medium operation, and it takes 2,61 hours to plant one hectare. No costs are included for labour, or seed and other materials.

TABLE 2: Self-propelled combine harvester—maize

a) Activity duration time

Activity	Combine details					Duration (hr/ha) (= 10 000 ÷ (A x B x 1 000 x C/100))
	Engine size (kW)	Description/head size and row size	Working width (m) (A)	Working speed (km/hr) (B)	Effectiveness (%) (C)	
Harvest	207	8-row 0,9 snapper maize combine	7,2	5,0	90	0,309
Harvest	313	12-row 0,9 snapper maize combine	10,8	6,0	90	0,171

b) Activity costs per hour and per hectare

Activity	Duration (hr/ha) (A)	Engine size (kW)	Engine costs			Description/head size and row size	Head costs			Total costs	
			Fixed (R/hr)	Variable (R/hr)	Total (R/hr) (B)		Fixed (R/hr)	Variable (R/hr)	Total (R/hr) (C)	Per hour (D = B + C)	Per ha (D x A)
Harvest	0,309	207	710,73	6 66,57	1 377,30	8-row 0,9 snapper head	212,78	51,53	264,31	1 641,61	507,26
Harvest	0,171	313	1 357,34	1 076,35	2 433,69	12-row 0,9 snapper head	384,78	93,29	477,96	2 911,65	497,89

TABLE 3: Self-propelled combine harvester—wheat

a) Activity duration time

Activity	Combine details					Duration
	Engine size (kW)	Description/head size and row size	Working width (m) (A)	Working speed (km/hr) (B)	Effectiveness (%) (C)	(hr/ha) (= 10 000 ÷ (A x B x 1 000 x C/100))
Harvest	146	6,0 m wheat combine	6,0	5,0	90	0,370
Harvest	216	9,1 m wheat combine	9,1	5,0	90	0,244

b) Activity costs per hour and per hectare

Activity	Duration (hr/ha) (A)	Engine size (kW)	Engine costs			Description/head	Head costs			Total costs	
			Fixed (R/hr)	Variable (R/hr)	Total (R/hr) (B)		Fixed (R/hr)	Variable (R/hr)	Total (R/hr) (C)	Per hour (D = B + C)	Per ha (D x A)
Harvest	0,370	146	495,50	468,74	964,24	6,0 m wheat combine	148,79	36,04	184,83	1 149,07	425,16
Harvest	0,244	216	1 049,00	769,98	1 818,98	9,1 m wheat combine	188,17	45,57	233,74	2 052,72	500,86

TABLE 4: Truck

a) Activity duration time

Activity	Truck details		Average speed		Duration	
	Description	Capacity (ton) (A)	km/hr (B)	hr/km (C = 1 ÷ B)	km/hr.ton (D = B ÷ A)	hr/km.ton (E = C ÷ A)
Transport 8 t grain	8,0 t single-differential truck	8,0	80,0	0,0125	10,00	0,0016

b) Activity costs per kilometre, per hour, and per ton

Activity	Truck description	Truck costs		Total costs			
		Fixed (R/km)	Variable (R/km)	R/km (F)	R/hr (G = F x B)	R/km.ton (H = F ÷ A)	R/hr.ton (I = F x D)
Transport 8 t grain	8,0 t Single-differential truck	2,31	6,69	9,00	720,00	1,13	90,00

These costs do not include the driver, or any other labour assistance.

Example: Assume that a maize farmer achieved a yield of 8t/ha on two hectares. He needs to transport 16 t of grain. He is using an 8,0 t single-differential truck, with an average speed of 80 km/hr. This means that two trips will have to be done. The total distance to be travelled for both return trips is 50 km. Using the tables above, as a guideline, the following costs can be derived.

c) Example: Truck activity costs

Activity	Tonnage transported (tons)	Total distance travelled 2 loads (km)	Truck 8 t single-diff.	Truck cost (fixed + variable)	Average speed		Duration		Total costs			
	(A)	(B)	ton (C)	R/km (D)	km/hr (E)	hr/km (F = 1 ÷ E)	km/hr. ton (G = E ÷ C)	hr/km.ton (H = F ÷ C)	R/km (D)	R/hr (I = D x E)	R/km.ton (J = D ÷ C)	R/hr.ton (K = I ÷ C)
Transport 8 t grain	16,0	50,0	8	9,00	80,0	0,0125	10,00	0,00156	9,00	720,00	1,13	90,00

The total distance travelled = 50 km (B)
 The total cost per kilometre (R/km) = R 9,00 (D)
 The total cost of the return trip = R 450,00 (L = B x D)
 Tonnage transported = 16 tons (A)
 Cost per ton = R 28,13 (M = L ÷ A)
 The 16 t maize grain yield was from 2 ha
 = 8 t/ha (N)
 Cost per hectare = R 225,00 (M x N)

TABLE 5: Tractor and trailer

a) Activity duration time

Activity	Tractor			Trailer		Average speed		Duration	
	Power (kW)	Drive (2W/4W)	Power demand (L/M/H)	Description	Capacity (ton) (A)	km/hr (B)	hr/km (C = 1 ÷ B)	km/hr.ton (D = B ÷ A)	hr/km.ton (E = C ÷ A)
Transport grain	98	4W	H	10 t 4-wheel trailer with dropsides	10,0	10,00	0,10	1,00	0,01

b) Activity costs per hour, per kilometre, and per ton

Activity	Tractor	Tractor costs			Trailer	Trailer costs			Total costs			
	kW; 2/4 W; L/M/H	Fixed (R/hr)	Var. (R/hr)	Total (R/hr) (F)	Description	Fixed (R/hr)	Vari. (R/hr)	Total (R/hr) (G)	R/hr (H = F + G)	R/km (I = H x C)	R/hr.ton (J = H ÷ A)	R/km.ton (K = I ÷ A)
Transport	98 4W; H	77,35	292,96	370,32	10 t 4-wheel Trailer with dropsides	24,60	13,47	38,07	408,39	40,84	40,84	4,08

Example: Assume that a maize farmer has to transport 10 tons of maize from the field to the silo. He is using a 98kW (4-wheel) drive tractor and a 10 t 4-wheel trailer (with dropsides), with an average speed of 20 km/hr. This means that one trip will have to be undertaken. The total distance to be travelled from the field to the silo is 10 km. Using the tables above, as a guideline, the following costs can be derived.

c) Example: Tractor and trailer activity costs

Activity	Tonnage transported (tons) (A)	Total distance travelled (km) (B)	Tractor 98 4W; H	4 W Trailer 10 ton (D = 10)	Average speed		Duration		Total costs			
			Total cost R/hr (C)	Total cost R/hr (E)	km/hr (F)	hr/km (G = 1 ÷ F)	km/hr.ton (H = F ÷ D)	hr/km.ton (I = G ÷ D)	R/hr (J = C + E)	R/km (K = J x G)	R/hr.ton (L = J ÷ D)	R/km.ton (M = K ÷ D)
Transport 10 t grain	10,0	10,0	370,32	38,07	20,0	0,05	2,00	0,005	408,39	20,42	40,84	2,04

The total distance travelled = 10 km (B)
 The total cost per kilometre (R/km) = R20,42 (K)
 The total cost of the trip = R 204,20 (N = B x K)
 Tonnage transported (Yield) = 10 tons (A)
 Cost per ton (R/T) = R20,42 (O = N ÷ A)
 The 10 t maize grain yield was from 2 ha
 = 5t/ha (P)
 Cost per hectare = R102,10 (O x P)

Other combinations of tractors, vehicles and equipment can be determined using the illustrations above.

It must be noted that the preceding examples do not include the costs of drivers and assistants. In the case of hay-making and baling operations, the cost of twine is not included.

1.3 References

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2. TWO-WHEEL DRIVE TRACTORS

2.1 Low power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
18	63 300	6 330	34 815	4,75	0,61	2,96	8,32	5,36	6,33	33,44	39,77	48,09	45,13	2,52
22	153 188	15 319	84 253	11,49	1,47	7,16	20,13	12,96	15,32	40,87	56,19	76,32	69,15	3,08
28	112 200	11 220	61 710	8,42	1,08	5,25	14,74	9,49	11,22	52,02	63,24	77,98	72,73	3,92
30	110 450	11 045	60 748	8,28	1,06	5,16	14,51	9,35	11,05	55,73	66,78	81,29	76,13	4,20
33	131 500	13 150	72 325	9,86	1,27	6,15	17,28	11,13	13,15	61,31	74,46	91,73	85,59	4,62
35	154 500	15 450	84 975	11,59	1,49	7,22	20,30	13,07	15,45	65,02	80,47	100,77	93,55	4,90
41	204 398	20 440	112 419	15,33	1,97	9,56	26,85	17,30	20,44	76,17	96,61	123,46	113,91	5,74
44	154 333	15 433	84 883	11,58	1,49	7,22	20,28	13,06	15,43	81,74	97,18	117,45	110,24	6,16
45	215 180	21 518	118 349	16,14	2,07	10,06	28,27	18,21	21,52	83,60	105,12	133,39	123,33	6,30
50	249 600	24 960	137 280	18,72	2,40	11,67	32,79	21,12	24,96	92,89	117,85	150,64	138,97	7,00
54	208 000	20 800	114 400	15,60	2,00	9,72	27,33	17,60	20,80	100,32	121,12	148,45	138,72	7,56
55	256 377	25 638	141 007	19,23	2,47	11,99	33,68	21,70	25,64	102,18	127,82	161,50	149,51	7,70
57	324 567	32 457	178 512	24,34	3,12	15,17	42,64	27,47	32,46	105,89	138,35	180,99	165,82	7,98
60	279 916	27 992	153 954	20,99	2,69	13,09	36,77	23,69	27,99	111,47	139,46	176,23	163,15	8,40
63	305 900	30 590	168 245	22,94	2,94	14,30	40,19	25,89	30,59	117,04	147,63	187,82	173,52	8,82
66	395 833	39 583	217 708	29,69	3,81	18,51	52,00	33,50	39,58	122,61	162,20	214,20	195,70	9,24
67	449 522	44 952	247 237	33,71	4,33	21,02	59,06	38,04	44,95	124,47	169,42	228,48	207,47	9,38
74	508 988	50 899	279 943	38,17	4,90	23,80	66,87	43,07	50,90	137,48	188,38	255,24	231,45	10,36
82	577 400	57 740	317 570	43,31	5,56	26,99	75,86	48,86	57,74	152,34	210,08	285,94	258,94	11,48
82	724 138	72 414	398 276	54,31	6,97	33,85	95,13	61,28	72,41	152,34	224,75	319,89	286,03	11,48

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 35% of Kilowatts used
- 11) Litres used per kilowatt hour 0,4 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

2.2 Medium power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
18	63 300	6 330	34 815	4,75	0,61	2,96	8,32	5,36	6,33	37,62	43,95	52,27	49,31	2,84
22	153 188	15 319	84 253	11,49	1,47	7,16	20,13	12,96	15,32	45,98	61,30	81,42	74,26	3,47
28	112 200	11 220	61 710	8,42	1,08	5,25	14,74	9,49	11,22	58,52	69,74	84,48	79,24	4,41
30	110 450	11 045	60 748	8,28	1,06	5,16	14,51	9,35	11,05	62,70	73,75	88,26	83,09	4,73
33	131 500	13 150	72 325	9,86	1,27	6,15	17,28	11,13	13,15	68,97	82,12	99,40	93,25	5,20
35	154 500	15 450	84 975	11,59	1,49	7,22	20,30	13,07	15,45	73,15	88,60	108,90	101,68	5,51
41	204 398	20 440	112 419	15,33	1,97	9,56	26,85	17,30	20,44	85,69	106,13	132,98	123,43	6,46
44	154 333	15 433	84 883	11,58	1,49	7,22	20,28	13,06	15,43	91,96	107,39	127,67	120,45	6,93
45	215 180	21 518	118 349	16,14	2,07	10,06	28,27	18,21	21,52	94,05	115,57	143,84	133,78	7,09
50	249 600	24 960	137 280	18,72	2,40	11,67	32,79	21,12	24,96	104,50	129,46	162,25	150,58	7,88
54	208 000	20 800	114 400	15,60	2,00	9,72	27,33	17,60	20,80	112,86	133,66	160,99	151,26	8,51
55	256 377	25 638	141 007	19,23	2,47	11,99	33,68	21,70	25,64	114,95	140,59	174,27	162,28	8,66
57	324 567	32 457	178 512	24,34	3,12	15,17	42,64	27,47	32,46	119,13	151,59	194,23	179,05	8,98
60	279 916	27 992	153 954	20,99	2,69	13,09	36,77	23,69	27,99	125,40	153,39	190,17	177,08	9,45
63	305 900	30 590	168 245	22,94	2,94	14,30	40,19	25,89	30,59	131,67	162,26	202,45	188,15	9,92
66	395 833	39 583	217 708	29,69	3,81	18,51	52,00	33,50	39,58	137,94	177,52	229,53	211,02	10,40
67	449 522	44 952	247 237	33,71	4,33	21,02	59,06	38,04	44,95	140,03	184,98	244,04	223,02	10,55
74	508 988	50 899	279 943	38,17	4,90	23,80	66,87	43,07	50,90	154,66	205,56	272,43	248,63	11,66
82	577 400	57 740	317 570	43,31	5,56	26,99	75,86	48,86	57,74	171,38	229,12	304,98	277,98	12,92
82	724 138	72 414	398 276	54,31	6,97	33,85	95,13	61,28	72,41	171,38	243,80	338,93	305,08	12,92

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 45% of kilowatts used
- 11) Litres used per kilowatt hour 0,35 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

2.3 High power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
18	63 300	6 330	34 815	4,75	0,61	2,96	8,32	5,36	6,33	42,99	49,32	57,64	54,68	3,24
22	153 188	15 319	84 253	11,49	1,47	7,16	20,13	12,96	15,32	52,55	67,87	87,99	80,83	3,96
28	112 200	11 220	61 710	8,42	1,08	5,25	14,74	9,49	11,22	66,88	78,10	92,84	87,60	5,04
30	110 450	11 045	60 748	8,28	1,06	5,16	14,51	9,35	11,05	71,66	82,70	97,21	92,05	5,40
33	131 500	13 150	72 325	9,86	1,27	6,15	17,28	11,13	13,15	78,82	91,97	109,25	103,10	5,94
35	154 500	15 450	84 975	11,59	1,49	7,22	20,30	13,07	15,45	83,60	99,05	119,35	112,13	6,30
41	204 398	20 440	112 419	15,33	1,97	9,56	26,85	17,30	20,44	97,93	118,37	145,23	135,67	7,38
44	154 333	15 433	84 883	11,58	1,49	7,22	20,28	13,06	15,43	105,10	120,53	140,81	133,59	7,92
45	215 180	21 518	118 349	16,14	2,07	10,06	28,27	18,21	21,52	107,49	129,01	157,27	147,21	8,10
50	249 600	24 960	137 280	18,72	2,40	11,67	32,79	21,12	24,96	119,43	144,39	177,18	165,51	9,00
54	208 000	20 800	114 400	15,60	2,00	9,72	27,33	17,60	20,80	128,98	149,78	177,11	167,39	9,72
55	256 377	25 638	141 007	19,23	2,47	11,99	33,68	21,70	25,64	131,37	157,01	190,69	178,71	9,90
57	324 567	32 457	178 512	24,34	3,12	15,17	42,64	27,47	32,46	136,15	168,61	211,25	196,07	10,26
60	279 916	27 992	153 954	20,99	2,69	13,09	36,77	23,69	27,99	143,32	171,31	208,08	195,00	10,80
63	305 900	30 590	168 245	22,94	2,94	14,30	40,19	25,89	30,59	150,48	181,07	221,26	206,96	11,34
66	395 833	39 583	217 708	29,69	3,81	18,51	52,00	33,50	39,58	157,65	197,23	249,23	230,73	11,88
67	449 522	44 952	247 237	33,71	4,33	21,02	59,06	38,04	44,95	160,04	204,99	264,04	243,03	12,06
74	508 988	50 899	279 943	38,17	4,90	23,80	66,87	43,07	50,90	176,76	227,66	294,52	270,73	13,32
82	577 400	57 740	317 570	43,31	5,56	26,99	75,86	48,86	57,74	195,87	253,61	329,46	302,47	14,76
82	724 138	72 414	398 276	54,31	6,97	33,85	95,13	61,28	72,41	195,87	268,28	363,41	329,56	14,76

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 60% of kilowatts used
- 11) Litres used per kilowatt hour 0,3 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

3. FOUR-WHEEL DRIVE TRACTORS

3.1 Low power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
12	120 625	12 063	66 344	9,05	1,16	5,64	15,85	10,21	12,06	22,29	34,36	50,20	44,56	1,68
16	183 438	18 344	100 891	13,76	1,77	8,58	24,10	15,52	18,34	29,72	48,07	72,17	63,59	2,24
18	83 000	8 300	45 650	6,23	0,80	3,88	10,90	7,02	8,30	33,44	41,74	52,64	48,76	2,52
21	171 456	17 146	94 301	12,86	1,65	8,02	22,53	14,51	17,15	39,01	56,16	78,68	70,67	2,94
23	188 587	18 859	103 723	14,14	1,82	8,82	24,78	15,96	18,86	42,73	61,59	86,36	77,55	3,22
29	223 813	22 381	123 097	16,79	2,15	10,46	29,40	18,94	22,38	53,88	76,26	105,66	95,20	4,06
31	264 142	26 414	145 278	19,81	2,54	12,35	34,70	22,35	26,41	57,59	84,01	118,71	106,36	4,34
35	210 000	21 000	115 500	15,75	2,02	9,82	27,59	17,77	21,00	65,02	86,02	113,61	103,79	4,90
41	222 500	22 250	122 375	16,69	2,14	10,40	29,23	18,83	22,25	76,17	98,42	127,65	117,25	5,74
44	188 500	18 850	103 675	14,14	1,81	8,81	24,76	15,95	18,85	81,74	100,59	125,36	116,55	6,16
50	275 200	27 520	151 360	20,64	2,65	12,87	36,15	23,29	27,52	92,89	120,41	156,56	143,70	7,00
52	281 326	28 133	154 729	21,10	2,71	13,15	36,96	23,81	28,13	96,61	124,74	161,70	148,55	7,28
55	300 874	30 087	165 481	22,57	2,90	14,07	39,53	25,46	30,09	102,18	132,27	171,79	157,73	7,70
57	363 195	36 320	199 757	27,24	3,50	16,98	47,71	30,74	36,32	105,89	142,21	189,93	172,95	7,98
58	280 167	28 017	154 092	21,01	2,70	13,10	36,81	23,71	28,02	107,75	135,77	172,58	159,48	8,12
60	339 600	33 960	186 780	25,47	3,27	15,88	44,61	28,74	33,96	111,47	145,43	190,04	174,17	8,40
61	403 981	40 398	222 190	30,30	3,89	18,89	53,07	34,19	40,40	113,33	153,72	206,80	187,91	8,54
63	394 650	39 465	217 058	29,60	3,80	18,45	51,85	33,40	39,47	117,04	156,51	208,35	189,90	8,82
67	494 633	49 463	272 048	37,10	4,76	23,12	64,98	41,86	49,46	124,47	173,94	238,92	215,79	9,38
73	481 358	48 136	264 747	36,10	4,63	22,50	63,24	40,73	48,14	135,62	183,76	246,99	224,49	10,22
78	845 422	84 542	464 982	63,41	8,14	39,52	111,07	71,54	84,54	144,91	229,45	340,52	300,99	10,92
82	631 168	63 117	347 142	47,34	6,07	29,51	82,92	53,41	63,12	152,34	215,46	298,38	268,87	11,48
83	619 392	61 939	340 666	46,45	5,96	28,96	81,37	52,42	61,94	154,20	216,14	297,51	268,55	11,62
93	708 763	70 876	389 819	53,16	6,82	33,13	93,11	59,98	70,88	172,78	243,65	336,77	303,63	13,02
98	588 800	58 880	323 840	44,16	5,67	27,53	77,35	49,83	58,88	182,06	240,94	318,30	290,77	13,72

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 35% of Kilowatts used
- 11) Litres used per kilowatt hour 0,4 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

3.1 Low power demand (cont.)

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
103	981 500	98 150	539 825	73,61	9,45	45,89	128,94	83,06	98,15	191,35	289,50	418,45	372,56	14,42
109	1 066 654	106 665	586 660	80,00	10,27	49,87	140,13	90,27	106,67	202,50	309,17	449,30	399,43	15,26
116	704 000	70 400	387 200	52,80	6,78	32,91	92,49	59,58	70,40	215,50	285,90	378,39	345,48	16,24
123	933 717	93 372	513 544	70,03	8,99	43,65	122,67	79,02	93,37	228,51	321,88	444,55	400,90	17,22
136	1 291 435	129 144	710 289	96,86	12,43	60,37	169,66	109,29	129,14	252,66	381,80	551,47	491,09	19,04
145	1 266 300	126 630	696 465	94,97	12,19	59,20	166,36	107,16	126,63	269,38	396,01	562,37	503,17	20,30
157	1 525 100	152 510	838 805	114,38	14,68	71,30	200,36	129,06	152,51	291,67	444,18	644,54	573,25	21,98
162	1 475 340	147 534	811 437	110,65	14,20	68,97	193,82	124,85	147,53	300,96	448,50	642,32	573,35	22,68
175	2 038 500	203 850	1 121 175	152,89	19,62	95,30	267,81	172,51	203,85	325,12	528,97	796,77	701,47	24,50
184	1 854 267	185 427	1 019 847	139,07	17,85	86,69	243,60	156,92	185,43	341,84	527,26	770,87	684,18	25,76
194	2 196 600	219 660	1 208 130	164,75	21,14	102,69	288,58	185,89	219,66	360,41	580,07	868,65	765,96	27,16
209	2 305 000	230 500	1 267 750	172,88	22,19	107,76	302,82	195,06	230,50	388,28	618,78	921,60	813,84	29,26
219	2 488 061	248 806	1 368 434	186,60	23,95	116,32	326,87	210,55	248,81	406,86	655,66	982,53	866,22	30,66
229	2 406 250	240 625	1 323 438	180,47	23,16	112,49	316,12	203,63	240,63	425,44	666,06	982,18	869,69	32,06
235	2 668 200	266 820	1 467 510	200,12	25,68	124,74	350,53	225,80	266,82	436,58	703,40	1 053,94	929,20	32,90
250	2 402 927	240 293	1 321 610	180,22	23,13	112,34	315,68	203,35	240,29	464,45	704,74	1 020,43	908,09	35,00
298	3 333 750	333 375	1 833 563	250,03	32,09	155,85	437,97	282,12	333,38	553,62	887,00	1 324,97	1 169,12	41,72
317	1 620 000	162 000	891 000	121,50	15,59	75,74	212,83	137,09	162,00	588,92	750,92	963,75	888,02	44,38
327	3 604 765	360 476	1 982 620	270,36	34,70	168,52	473,58	305,05	360,48	607,50	967,98	1 441,55	1 273,03	45,78
363	3 858 029	385 803	2 121 916	289,35	37,13	180,36	506,85	326,49	385,80	674,38	1 060,18	1 567,03	1 386,67	50,82
380	3 570 733	357 073	1 963 903	267,80	34,37	166,93	469,11	302,17	357,07	705,96	1 063,04	1 532,14	1 365,21	53,20
399	4 002 944	400 294	2 201 619	300,22	38,53	187,14	525,89	338,75	400,29	741,26	1 141,56	1 667,44	1 480,31	55,86
411	4 838 050	483 805	2 660 928	362,85	46,57	226,18	635,60	409,42	483,81	763,56	1 247,36	1 882,96	1 656,78	57,54
448	5 018 600	501 860	2 760 230	376,40	48,30	234,62	659,32	424,70	501,86	832,29	1 334,15	1 993,47	1 758,85	62,72

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 35% of Kilowatts used
- 11) Litres used per kilowatt hour 0,4 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

3.2 Medium power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
12	120 625	12 063	66 344	9,05	1,16	5,64	15,85	10,21	12,06	25,08	37,14	52,99	47,35	1,89
16	183 438	18 344	100 891	13,76	1,77	8,58	24,10	15,52	18,34	33,44	51,78	75,88	67,31	2,52
18	83 000	8 300	45 650	6,23	0,80	3,88	10,90	7,02	8,30	37,62	45,92	56,82	52,94	2,84
21	171 456	17 146	94 301	12,86	1,65	8,02	22,53	14,51	17,15	43,89	61,04	83,56	75,55	3,31
23	188 587	18 859	103 723	14,14	1,82	8,82	24,78	15,96	18,86	48,07	66,93	91,70	82,89	3,62
29	223 813	22 381	123 097	16,79	2,15	10,46	29,40	18,94	22,38	60,61	82,99	112,40	101,93	4,57
31	264 142	26 414	145 278	19,81	2,54	12,35	34,70	22,35	26,41	64,79	91,20	125,91	113,56	4,88
35	210 000	21 000	115 500	15,75	2,02	9,82	27,59	17,77	21,00	73,15	94,15	121,74	111,92	5,51
41	222 500	22 250	122 375	16,69	2,14	10,40	29,23	18,83	22,25	85,69	107,94	137,17	126,77	6,46
44	188 500	18 850	103 675	14,14	1,81	8,81	24,76	15,95	18,85	91,96	110,81	135,58	126,76	6,93
50	275 200	27 520	151 360	20,64	2,65	12,87	36,15	23,29	27,52	104,50	132,02	168,18	155,31	7,88
52	281 326	28 133	154 729	21,10	2,71	13,15	36,96	23,81	28,13	108,68	136,81	173,77	160,62	8,19
55	300 874	30 087	165 481	22,57	2,90	14,07	39,53	25,46	30,09	114,95	145,04	184,57	170,50	8,66
57	363 195	36 320	199 757	27,24	3,50	16,98	47,71	30,74	36,32	119,13	155,45	203,17	186,19	8,98
58	280 167	28 017	154 092	21,01	2,70	13,10	36,81	23,71	28,02	121,22	149,24	186,05	172,95	9,14
60	339 600	33 960	186 780	25,47	3,27	15,88	44,61	28,74	33,96	125,40	159,36	203,98	188,10	9,45
61	403 981	40 398	222 190	30,30	3,89	18,89	53,07	34,19	40,40	127,49	167,89	220,96	202,08	9,61
63	394 650	39 465	217 058	29,60	3,80	18,45	51,85	33,40	39,47	131,67	171,14	222,98	204,53	9,92
67	494 633	49 463	272 048	37,10	4,76	23,12	64,98	41,86	49,46	140,03	189,49	254,48	231,35	10,55
73	481 358	48 136	264 747	36,10	4,63	22,50	63,24	40,73	48,14	152,57	200,71	263,95	241,44	11,50
78	845 422	84 542	464 982	63,41	8,14	39,52	111,07	71,54	84,54	163,02	247,56	358,63	319,11	12,29
82	631 168	63 117	347 142	47,34	6,07	29,51	82,92	53,41	63,12	171,38	234,50	317,42	287,91	12,92
83	619 392	61 939	340 666	46,45	5,96	28,96	81,37	52,42	61,94	173,47	235,41	316,78	287,83	13,07
93	708 763	70 876	389 819	53,16	6,82	33,13	93,11	59,98	70,88	194,37	265,25	358,36	325,23	14,65
98	588 800	58 880	323 840	44,16	5,67	27,53	77,35	49,83	58,88	204,82	263,70	341,06	313,53	15,44

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 45% of kilowatts used
- 11) Litres used per kilowatt hour 0,35 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

3.2 Medium power demand (cont.)

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
103	981 500	98 150	539 825	73,61	9,45	45,89	128,94	83,06	98,15	215,27	313,42	442,37	396,48	16,22
109	1 066 654	106 665	586 660	80,00	10,27	49,87	140,13	90,27	106,67	227,81	334,48	474,61	424,74	17,17
116	704 000	70 400	387 200	52,80	6,78	32,91	92,49	59,58	70,40	242,44	312,84	405,33	372,42	18,27
123	933 717	93 372	513 544	70,03	8,99	43,65	122,67	79,02	93,37	257,07	350,44	473,11	429,46	19,37
136	1 291 435	129 144	710 289	96,86	12,43	60,37	169,66	109,29	129,14	284,24	413,39	583,05	522,67	21,42
145	1 266 300	126 630	696 465	94,97	12,19	59,20	166,36	107,16	126,63	303,05	429,68	596,04	536,84	22,84
157	1 525 100	152 510	838 805	114,38	14,68	71,30	200,36	129,06	152,51	328,13	480,64	681,00	609,71	24,73
162	1 475 340	147 534	811 437	110,65	14,20	68,97	193,82	124,85	147,53	338,58	486,12	679,94	610,97	25,52
175	2 038 500	203 850	1 121 175	152,89	19,62	95,30	267,81	172,51	203,85	365,75	569,60	837,41	742,11	27,56
184	1 854 267	185 427	1 019 847	139,07	17,85	86,69	243,60	156,92	185,43	384,56	569,99	813,60	726,91	28,98
194	2 196 600	219 660	1 208 130	164,75	21,14	102,69	288,58	185,89	219,66	405,46	625,12	913,70	811,01	30,56
209	2 305 000	230 500	1 267 750	172,88	22,19	107,76	302,82	195,06	230,50	436,82	667,32	970,13	862,38	32,92
219	2 488 061	248 806	1 368 434	186,60	23,95	116,32	326,87	210,55	248,81	457,72	706,52	1 033,39	917,07	34,49
229	2 406 250	240 625	1 323 438	180,47	23,16	112,49	316,12	203,63	240,63	478,62	719,24	1 035,36	922,87	36,07
235	2 668 200	266 820	1 467 510	200,12	25,68	124,74	350,53	225,80	266,82	491,16	757,98	1 108,51	983,77	37,01
250	2 402 927	240 293	1 321 610	180,22	23,13	112,34	315,68	203,35	240,29	522,51	762,80	1 078,48	966,15	39,38
298	3 333 750	333 375	1 833 563	250,03	32,09	155,85	437,97	282,12	333,38	622,83	956,20	1 394,17	1 238,32	46,94
317	1 620 000	162 000	891 000	121,50	15,59	75,74	212,83	137,09	162,00	662,54	824,54	1 037,37	961,63	49,93
327	3 604 765	360 476	1 982 620	270,36	34,70	168,52	473,58	305,05	360,48	683,44	1 043,91	1 517,49	1 348,97	51,50
363	3 858 029	385 803	2 121 916	289,35	37,13	180,36	506,85	326,49	385,80	758,68	1 144,48	1 651,33	1 470,97	57,17
380	3 570 733	357 073	1 963 903	267,80	34,37	166,93	469,11	302,17	357,07	794,21	1 151,28	1 620,39	1 453,46	59,85
399	4 002 944	400 294	2 201 619	300,22	38,53	187,14	525,89	338,75	400,29	833,92	1 234,21	1 760,10	1 572,96	62,84
411	4 838 050	483 805	2 660 928	362,85	46,57	226,18	635,60	409,42	483,81	859,00	1 342,81	1 978,40	1 752,23	64,73
448	5 018 600	501 860	2 760 230	376,40	48,30	234,62	659,32	424,70	501,86	936,33	1 438,19	2 097,51	1 862,89	70,56

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 45% of kilowatts used
- 11) Litres used per kilowatt hour 0,35 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

3.3 High power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
12	120 625	12 063	66 344	9,05	1,16	5,64	15,85	10,21	12,06	28,66	40,73	56,57	50,93	2,16
16	183 438	18 344	100 891	13,76	1,77	8,58	24,10	15,52	18,34	38,22	56,56	80,66	72,08	2,88
18	83 000	8 300	45 650	6,23	0,80	3,88	10,90	7,02	8,30	42,99	51,29	62,20	58,32	3,24
21	171 456	17 146	94 301	12,86	1,65	8,02	22,53	14,51	17,15	50,16	67,31	89,83	81,82	3,78
23	188 587	18 859	103 723	14,14	1,82	8,82	24,78	15,96	18,86	54,94	73,80	98,57	89,76	4,14
29	223 813	22 381	123 097	16,79	2,15	10,46	29,40	18,94	22,38	69,27	91,65	121,05	110,59	5,22
31	264 142	26 414	145 278	19,81	2,54	12,35	34,70	22,35	26,41	74,05	100,46	135,16	122,81	5,58
35	210 000	21 000	115 500	15,75	2,02	9,82	27,59	17,77	21,00	83,60	104,60	132,19	122,37	6,30
41	222 500	22 250	122 375	16,69	2,14	10,40	29,23	18,83	22,25	97,93	120,18	149,41	139,01	7,38
44	188 500	18 850	103 675	14,14	1,81	8,81	24,76	15,95	18,85	105,10	123,95	148,71	139,90	7,92
50	275 200	27 520	151 360	20,64	2,65	12,87	36,15	23,29	27,52	119,43	146,95	183,10	170,24	9,00
52	281 326	28 133	154 729	21,10	2,71	13,15	36,96	23,81	28,13	124,21	152,34	189,30	176,15	9,36
55	300 874	30 087	165 481	22,57	2,90	14,07	39,53	25,46	30,09	131,37	161,46	200,99	186,92	9,90
57	363 195	36 320	199 757	27,24	3,50	16,98	47,71	30,74	36,32	136,15	172,47	220,18	203,21	10,26
58	280 167	28 017	154 092	21,01	2,70	13,10	36,81	23,71	28,02	138,54	166,56	203,36	190,26	10,44
60	339 600	33 960	186 780	25,47	3,27	15,88	44,61	28,74	33,96	143,32	177,28	221,89	206,01	10,80
61	403 981	40 398	222 190	30,30	3,89	18,89	53,07	34,19	40,40	145,70	186,10	239,18	220,29	10,98
63	394 650	39 465	217 058	29,60	3,80	18,45	51,85	33,40	39,47	150,48	189,95	241,79	223,34	11,34
67	494 633	49 463	272 048	37,10	4,76	23,12	64,98	41,86	49,46	160,04	209,50	274,48	251,36	12,06
73	481 358	48 136	264 747	36,10	4,63	22,50	63,24	40,73	48,14	174,37	222,50	285,74	263,24	13,14
78	845 422	84 542	464 982	63,41	8,14	39,52	111,07	71,54	84,54	186,31	270,85	381,92	342,40	14,04
82	631 168	63 117	347 142	47,34	6,07	29,51	82,92	53,41	63,12	195,87	258,98	341,90	312,39	14,76
83	619 392	61 939	340 666	46,45	5,96	28,96	81,37	52,42	61,94	198,25	260,19	341,57	312,61	14,94
93	708 763	70 876	389 819	53,16	6,82	33,13	93,11	59,98	70,88	222,14	293,02	386,13	353,00	16,74
98	588 800	58 880	323 840	44,16	5,67	27,53	77,35	49,83	58,88	234,08	292,96	370,32	342,79	17,64

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + Salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - Salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 60% of kilowatts used
- 11) Litres used per kilowatt hour 0,3 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

3.3 High power demand (cont.)

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
103	981 500	98 150	539 825	73,61	9,45	45,89	128,94	83,06	98,15	246,03	344,18	473,12	427,24	18,54
109	1 066 654	106 665	586 660	80,00	10,27	49,87	140,13	90,27	106,67	260,36	367,02	507,15	457,29	19,62
116	704 000	70 400	387 200	52,80	6,78	32,91	92,49	59,58	70,40	277,08	347,48	439,97	407,05	20,88
123	933 717	93 372	513 544	70,03	8,99	43,65	122,67	79,02	93,37	293,80	387,17	509,84	466,19	22,14
136	1 291 435	129 144	710 289	96,86	12,43	60,37	169,66	109,29	129,14	324,85	453,99	623,66	563,28	24,48
145	1 266 300	126 630	696 465	94,97	12,19	59,20	166,36	107,16	126,63	346,35	472,98	639,34	580,14	26,10
157	1 525 100	152 510	838 805	114,38	14,68	71,30	200,36	129,06	152,51	375,01	527,52	727,88	656,58	28,26
162	1 475 340	147 534	811 437	110,65	14,20	68,97	193,82	124,85	147,53	386,95	534,49	728,31	659,34	29,16
175	2 038 500	203 850	1 121 175	152,89	19,62	95,30	267,81	172,51	203,85	418,01	621,86	889,66	794,36	31,50
184	1 854 267	185 427	1 019 847	139,07	17,85	86,69	243,60	156,92	185,43	439,50	624,93	868,53	781,85	33,12
194	2 196 600	219 660	1 208 130	164,75	21,14	102,69	288,58	185,89	219,66	463,39	683,05	971,63	868,94	34,92
209	2 305 000	230 500	1 267 750	172,88	22,19	107,76	302,82	195,06	230,50	499,22	729,72	1 032,54	924,78	37,62
219	2 488 061	248 806	1 368 434	186,60	23,95	116,32	326,87	210,55	248,81	523,10	771,91	1 098,78	982,46	39,42
229	2 406 250	240 625	1 323 438	180,47	23,16	112,49	316,12	203,63	240,63	546,99	787,61	1 103,74	991,24	41,22
235	2 668 200	266 820	1 467 510	200,12	25,68	124,74	350,53	225,80	266,82	561,32	828,14	1 178,68	1 053,94	42,30
250	2 402 927	240 293	1 321 610	180,22	23,13	112,34	315,68	203,35	240,29	597,15	837,44	1 153,13	1 040,79	45,00
298	3 333 750	333 375	1 833 563	250,03	32,09	155,85	437,97	282,12	333,38	711,80	1 045,18	1 483,15	1 327,30	53,64
317	1 620 000	162 000	891 000	121,50	15,59	75,74	212,83	137,09	162,00	757,19	919,19	1 132,01	1 056,28	57,06
327	3 604 765	360 476	1 982 620	270,36	34,70	168,52	473,58	305,05	360,48	781,07	1 141,55	1 615,12	1 446,60	58,86
363	3 858 029	385 803	2 121 916	289,35	37,13	180,36	506,85	326,49	385,80	867,06	1 252,86	1 759,71	1 579,35	65,34
380	3 570 733	357 073	1 963 903	267,80	34,37	166,93	469,11	302,17	357,07	907,67	1 264,74	1 733,85	1 566,91	68,40
399	4 002 944	400 294	2 201 619	300,22	38,53	187,14	525,89	338,75	400,29	953,05	1 353,35	1 879,23	1 692,09	71,82
411	4 838 050	483 805	2 660 928	362,85	46,57	226,18	635,60	409,42	483,81	981,71	1 465,52	2 101,12	1 874,94	73,98
448	5 018 600	501 860	2 760 230	376,40	48,30	234,62	659,32	424,70	501,86	1 070,09	1 571,95	2 231,27	1 996,65	80,64

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 60% of kilowatts used
- 11) Litres used per kilowatt hour 0,3 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

4. TWO-WHEEL DRIVE ORCHARD TRACTORS

4.1 Low power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
43	275 200	27 520	151 360	20,64	2,65	12,87	36,15	23,29	27,52	79,89	107,41	143,56	130,69	6,02
48	311 680	31 168	171 424	23,38	3,00	14,57	40,95	26,38	31,17	89,17	120,34	161,29	146,72	6,72
60	279 533	27 953	153 743	20,97	2,69	13,07	36,72	23,66	27,95	111,47	139,42	176,15	163,08	8,40

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 35% of Kilowatts used
- 11) Litres used per kilowatt hour 0,40 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

4.2 Medium power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
43	275 200	27 520	151 360	20,64	2,65	12,87	36,15	23,29	27,52	89,87	117,39	153,55	140,68	6,77
48	311 680	31 168	171 424	23,38	3,00	14,57	40,95	26,38	31,17	100,32	131,49	172,44	157,87	7,56
60	279 533	27 953	153 743	20,97	2,69	13,07	36,72	23,66	27,95	125,40	153,35	190,08	177,01	9,45

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 45% of kilowatts used
- 11) Litres used per kilowatt hour 0,35 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

4.3 High power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
43	275 200	27 520	151 360	20,64	2,65	12,87	36,15	23,29	27,52	102,71	130,23	166,38	153,52	7,74
48	311 680	31 168	171 424	23,38	3,00	14,57	40,95	26,38	31,17	114,65	145,82	186,77	172,20	8,64
60	279 533	27 953	153 743	20,97	2,69	13,07	36,72	23,66	27,95	143,32	171,27	207,99	194,92	10,80

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 60% of kilowatts used
- 11) Litres used per kilowatt hour 0,3 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

5. FOUR-WHEEL DRIVE ORCHARD TRACTORS

5.1 Low power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
43	313 600	31 360	172 480	23,52	3,02	14,66	41,20	26,54	31,36	79,89	111,25	152,44	137,78	6,02
46	310 500	31 050	170 775	23,29	2,99	14,52	40,79	26,28	31,05	85,46	116,51	157,30	142,78	6,44
51	330 240	33 024	181 632	24,77	3,18	15,44	43,39	27,95	33,02	94,75	127,77	171,16	155,72	7,14
51	377 600	37 760	207 680	28,32	3,63	17,65	49,61	31,95	37,76	94,75	132,51	182,12	164,46	7,14
53	348 813	34 881	191 847	26,16	3,36	16,31	45,83	29,52	34,88	98,46	133,34	179,17	162,86	7,42
56	355 000	35 500	195 250	26,63	3,42	16,60	46,64	30,04	35,50	104,04	139,54	186,17	169,58	7,84
57	457 575	45 758	251 666	34,32	4,40	21,39	60,11	38,72	45,76	105,89	151,65	211,77	190,37	7,98
60	381 107	38 111	209 609	28,58	3,67	17,82	50,07	32,25	38,11	111,47	149,58	199,65	181,83	8,40
65	546 250	54 625	300 438	40,97	5,26	25,54	71,76	46,23	54,63	120,76	175,38	247,15	221,61	9,10

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 35% of Kilowatts used
- 11) Litres used per kilowatt hour 0,4 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

5.2 Medium power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
43	313 600	31 360	172 480	23,52	3,02	14,66	41,20	26,54	31,36	89,87	121,23	162,43	147,77	6,77
46	310 500	31 050	170 775	23,29	2,99	14,52	40,79	26,28	31,05	96,14	127,19	167,98	153,47	7,25
51	330 240	33 024	181 632	24,77	3,18	15,44	43,39	27,95	33,02	106,59	139,62	183,00	167,56	8,03
51	377 600	37 760	207 680	28,32	3,63	17,65	49,61	31,95	37,76	106,59	144,35	193,96	176,31	8,03
53	348 813	34 881	191 847	26,16	3,36	16,31	45,83	29,52	34,88	110,77	145,65	191,48	175,17	8,35
56	355 000	35 500	195 250	26,63	3,42	16,60	46,64	30,04	35,50	117,04	152,54	199,18	182,58	8,82
57	457 575	45 758	251 666	34,32	4,40	21,39	60,11	38,72	45,76	119,13	164,89	225,00	203,61	8,98
60	381 107	38 111	209 609	28,58	3,67	17,82	50,07	32,25	38,11	125,40	163,51	213,58	195,76	9,45
65	546 250	54 625	300 438	40,97	5,26	25,54	71,76	46,23	54,63	135,85	190,48	262,24	236,70	10,24

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 45% of kilowatts used
- 11) Litres used per kilowatt hour 0,35 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

5.3 High power demand

Tractor power (kW)	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs – int. (R/hr)	Repairs and maint. (R/hr)	Fuel cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (l/hr)
43	313 600	31 360	172 480	23,52	3,02	14,66	41,20	26,54	31,36	102,71	134,07	175,27	160,61	7,74
46	310 500	31 050	170 775	23,29	2,99	14,52	40,79	26,28	31,05	109,88	140,93	181,72	167,20	8,28
51	330 240	33 024	181 632	24,77	3,18	15,44	43,39	27,95	33,02	121,82	154,84	198,23	182,79	9,18
51	377 600	37 760	207 680	28,32	3,63	17,65	49,61	31,95	37,76	121,82	159,58	209,19	191,53	9,18
53	348 813	34 881	191 847	26,16	3,36	16,31	45,83	29,52	34,88	126,60	161,48	207,30	191,00	9,54
56	355 000	35 500	195 250	26,63	3,42	16,60	46,64	30,04	35,50	133,76	169,26	215,90	199,30	10,08
57	457 575	45 758	251 666	34,32	4,40	21,39	60,11	38,72	45,76	136,15	181,91	242,02	220,63	10,26
60	381 107	38 111	209 609	28,58	3,67	17,82	50,07	32,25	38,11	143,32	181,43	231,49	213,68	10,80
65	546 250	54 625	300 438	40,97	5,26	25,54	71,76	46,23	54,63	155,26	209,88	281,65	256,11	11,70

Notes

- 1) Life period 12 000 hours
- 2) Average annual usage 1 000 hours
- 3) Salvage value 10% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Insurance and licence cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 120% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 60% of kilowatts used
- 11) Litres used per kilowatt hour 0,3 litre/kW hour
- 12) Where two prices are listed for tractors with the same kW rating, the higher price is for a tractor with a cab

6. TILLAGE EQUIPMENT

6.1 Rippers

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
6.1.1 Medium duty															
1 Shank - Straight shank	6 850	3 000	300	685	3 768	2,06	0,19	1,07	3,31	2,24	40,00	0,91	0,91	4,22	3,16
3 Shank - Straight shank	15 350	3 000	300	1 535	8 443	4,61	0,42	2,39	7,42	5,03	40,00	2,05	2,05	9,47	7,07
5 Shank - Straight shank	22 600	3 000	300	2 260	12 430	6,78	0,62	3,52	10,92	7,40	40,00	3,01	3,01	13,94	10,41
7 Shank - Straight shank	29 950	3 000	300	2 995	16 473	8,99	0,82	4,67	14,48	9,81	40,00	3,99	3,99	18,47	13,80
1 Shank - Curved shank	9 100	3 000	300	910	5 005	2,73	0,25	1,42	4,40	2,98	40,00	1,21	1,21	5,61	4,19
3 Shank - Curved shank	18 800	3 000	300	1 880	10 340	5,64	0,52	2,93	9,09	6,16	40,00	2,51	2,51	11,59	8,66
5 Shank - Curved shank	27 200	3 000	300	2 720	14 960	8,16	0,75	4,24	13,15	8,91	40,00	3,63	3,63	16,77	12,53
7 Shank - Curved shank	32 750	3 000	300	3 275	18 013	9,83	0,90	5,10	15,83	10,73	40,00	4,37	4,37	20,20	15,09
6.1.2 Heavy duty															
3 Shank	62 780	3 000	300	6 278	34 529	18,83	1,73	9,78	30,34	20,56	40,00	8,37	8,37	38,71	28,93
5 Shank	60 400	3 000	300	6 040	33 220	18,12	1,66	9,41	29,19	19,78	40,00	8,05	8,05	37,25	27,83
7 Shank	81 850	3 000	300	8 185	45 018	24,56	2,25	12,75	39,56	26,81	40,00	10,91	10,91	50,47	37,72
9 Shank	139 780	3 000	300	13 978	76 879	41,93	3,84	21,78	67,56	45,78	40,00	18,64	18,64	86,20	64,42
11 Shank	129 325	3 000	300	12 933	71 129	38,80	3,56	20,15	62,51	42,35	40,00	17,24	17,24	79,75	59,60

6.2 Mouldboard ploughs with shear-bolt protection

6.2.1 Mounted															
2 furrow	11 550	2 500	250	1 155	6 353	4,16	0,38	2,16	6,70	4,54	110,00	5,08	5,08	11,78	9,62
3 furrow - 14"	16 550	2 500	250	1 655	9 103	5,96	0,55	3,09	9,60	6,50	110,00	7,28	7,28	16,88	13,79
3 furrow - 16"	23 950	2 500	250	2 395	13 173	8,62	0,79	4,48	13,89	9,41	110,00	10,54	10,54	24,43	19,95
6.2.2 Mounted reversible															
2 furrow	56 250	2 500	250	5 625	30 938	20,25	1,86	10,52	32,63	22,11	110,00	24,75	24,75	57,38	46,86
3 furrow	72 300	2 500	250	7 230	39 765	26,03	2,39	13,52	41,93	28,41	110,00	31,81	31,81	73,75	60,23

6.3 Mouldboard ploughs with hydraulic, spring or other plough protection

6.3.1 Mounted, semi-mounted or trailed															
3 furrow	28 298	2 500	250	2 830	15 564	10,19	0,93	5,29	16,41	11,12	110,00	12,45	12,45	28,86	23,57
4 furrow	36 540	2 500	250	3 654	20 097	13,15	1,21	6,83	21,19	14,36	110,00	16,08	16,08	37,27	30,44
5 furrow	45 780	2 500	250	4 578	25 179	16,48	1,51	8,56	26,55	17,99	110,00	20,14	20,14	46,70	38,13
6 furrow	80 378	2 500	250	8 038	44 208	28,94	2,65	15,03	46,62	31,59	110,00	35,37	35,37	81,99	66,95
7 furrow	96 915	2 500	250	9 692	53 303	34,89	3,20	18,12	56,21	38,09	110,00	42,64	42,64	98,85	80,73
8 furrow	106 313	2 500	250	10 631	58 472	38,27	3,51	19,88	61,66	41,78	110,00	46,78	46,78	108,44	88,56

6.4 Disc ploughs

2 furrow	19 688	2 500	250	1 969	10 828	7,09	0,65	3,68	11,42	7,74	110,00	8,66	8,66	20,08	16,40
3 furrow	23 650	2 500	250	2 365	13 008	8,51	0,78	4,42	13,72	9,29	110,00	10,41	10,41	24,12	19,70
4 furrow	29 980	2 500	250	2 998	16 489	10,79	0,99	5,61	17,39	11,78	110,00	13,19	13,19	30,58	24,97
5 furrow	37 550	2 500	250	3 755	20 653	13,52	1,24	7,02	21,78	14,76	110,00	16,52	16,52	38,30	31,28

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

6.5 Spring-tine chisel ploughs

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
5 Shank	84 882	2 500	250	8 488	46 685	30,56	2,80	15,87	49,23	33,36	50,00	16,98	16,98	66,21	50,34
7 Shank	111 069	2 500	250	11 107	61 088	39,98	3,67	20,77	64,42	43,65	50,00	22,21	22,21	86,63	65,86
9 Shank	75 506	2 500	250	7 551	41 528	27,18	2,49	14,12	43,79	29,67	50,00	15,10	15,10	58,89	44,77
11 Shank	87 873	2 500	250	8 787	48 330	31,63	2,90	16,43	50,97	34,53	50,00	17,57	17,57	68,54	52,11
13 Shank	100 354	2 500	250	10 035	55 195	36,13	3,31	18,77	58,21	39,44	50,00	20,07	20,07	78,28	59,51
15 Shank	118 329	2 500	250	11 833	65 081	42,60	3,90	22,13	68,63	46,50	50,00	23,67	23,67	92,30	70,17
17 Shank	177 494	2 500	250	17 749	97 622	63,90	5,86	33,19	102,95	69,76	50,00	35,50	35,50	138,45	105,25

6.6 Disc harrows

<i>6.6.1 Offset disc light</i>																
1,1 m	12 100	2 500	250	1 210	6 655	4,36	0,40	2,26	7,02	4,76	60,00	2,90	2,90	9,92	7,66	
1,35 m	13 950	2 500	250	1 395	7 673	5,02	0,46	2,61	8,09	5,48	60,00	3,35	3,35	11,44	8,83	
1,6 m	16 800	2 500	250	1 680	9 240	6,05	0,55	3,14	9,74	6,60	60,00	4,03	4,03	13,78	10,63	
1,85 m	19 700	2 500	250	1 970	10 835	7,09	0,65	3,68	11,43	7,74	60,00	4,73	4,73	16,15	12,47	
<i>6.6.2 Trailed offset with wheels</i>																
1,8 m width	91 455	2 500	250	9 146	50 300	32,92	3,02	17,10	53,04	35,94	60,00	21,95	21,95	74,99	57,89	
2,3 m width	131 985	2 500	250	13 199	72 592	47,51	4,36	24,68	76,55	51,87	60,00	31,68	31,68	108,23	83,55	
2,75 m width	142 380	2 500	250	14 238	78 309	51,26	4,70	26,63	82,58	55,96	60,00	34,17	34,17	116,75	90,13	
3,05 m width	170 100	2 500	250	17 010	93 555	61,24	5,61	31,81	98,66	66,85	60,00	40,82	40,82	139,48	107,67	
3,67 m width	278 355	2 500	250	27 836	153 095	100,21	9,19	52,05	161,45	109,39	60,00	66,81	66,81	228,25	176,20	
4,27 m width	184 000	2 500	250	18 400	101 200	66,24	6,07	34,41	106,72	72,31	60,00	44,16	44,16	150,88	116,47	
4,88 m width	156 240	2 500	250	15 624	85 932	56,25	5,16	29,22	90,62	61,40	60,00	37,50	37,50	128,12	98,90	
5,49 m width	164 325	2 500	250	16 433	90 379	59,16	5,42	30,73	95,31	64,58	60,00	39,44	39,44	134,75	104,02	
6,08 m width	168 945	2 500	250	16 895	92 920	60,82	5,58	31,59	97,99	66,40	60,00	40,55	40,55	138,53	106,94	
<i>6.6.3 Trailed offset with wheels—oil bath</i>																
2,75 m width	347 130	2 500	250	34 713	190 922	124,97	11,46	64,91	201,34	136,42	60,00	83,31	83,31	284,65	219,73	
3,05 m width	376 110	2 500	250	37 611	206 861	135,40	12,41	70,33	218,14	147,81	60,00	90,27	90,27	308,41	238,08	
3,67 m width	212 600	2 500	250	21 260	116 930	76,54	7,02	39,76	123,31	83,55	60,00	51,02	51,02	174,33	134,58	
4,27 m width	244 800	2 500	250	24 480	134 640	88,13	8,08	45,78	141,98	96,21	60,00	58,75	58,75	200,74	154,96	
4,88 m width	607 530	2 500	250	60 753	334 142	218,71	20,05	113,61	352,37	238,76	60,00	145,81	145,81	498,17	384,57	
5,49 m width	339 427	2 500	250	33 943	186 685	122,19	11,20	63,47	196,87	133,39	60,00	81,46	81,46	278,33	214,86	
6,08 m width	688 485	2 500	250	68 849	378 667	247,85	22,72	128,75	399,32	270,57	60,00	165,24	165,24	564,56	435,81	
<i>6.6.4 Tandem discs</i>																
2,1 m 16 discs	22 995	2 500	250	2 300	12 647	8,28	0,76	4,30	13,34	9,04	60,00	5,52	5,52	18,86	14,56	
2,4 m 20 discs	26 775	2 500	250	2 678	14 726	9,64	0,88	5,01	15,53	10,52	60,00	6,43	6,43	21,96	16,95	
2,7 m 24 discs	29 505	2 500	250	2 951	16 228	10,62	0,97	5,52	17,11	11,60	60,00	7,08	7,08	24,19	18,68	
3,3 m 28 discs	33 128	2 500	250	3 313	18 220	11,93	1,09	6,19	19,21	13,02	60,00	7,95	7,95	27,16	20,97	
<i>6.6.5 Semimounted and traileed one-way</i>																
2,3 m 10 discs	34 860	2 500	250	3 486	19 173	12,55	1,15	6,52	20,22	13,70	60,00	8,37	8,37	28,59	22,07	
2,7 m 12 discs	37 695	2 500	250	3 770	20 732	13,57	1,24	7,05	21,86	14,81	60,00	9,05	9,05	30,91	23,86	
3,2 m 14 discs	39 375	2 500	250	3 938	21 656	14,18	1,30	7,36	22,84	15,47	60,00	9,45	9,45	32,29	24,92	

Notes	
1)	Life period hours—as per table
2)	Average use per annum hours/annum—as per table
3)	Salvage value 10% of purchase price
4)	Average investment = (Purchase price + salvage value)/2
5)	Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
6)	Insurance cost per hour 1,5% of average investment/hours per annum
7)	Interest cost per hour 8,5% of average investment/hours per annum
8)	Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

6.7 Rotary harrows

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
6.7.1 Medium duty															
0,97 m	56 283	2 500	250	5 628	30 956	20,26	1,86	10,52	32,64	22,12	100,00	22,51	22,51	55,16	44,63
1,27 m	59 332	2 500	250	5 933	32 633	21,36	1,96	11,10	34,41	23,32	100,00	23,73	23,73	58,15	47,05
1,52 m	65 812	2 500	250	6 581	36 197	23,69	2,17	12,31	38,17	25,86	100,00	26,32	26,32	64,50	52,19
1,88 m	67 209	2 500	250	6 721	36 965	24,20	2,22	12,57	38,98	26,41	100,00	26,88	26,88	65,87	53,30
6.7.2 Heavy duty															
1,52 m	93 890	2 500	250	9 389	51 639	33,80	3,10	17,56	54,46	36,90	100,00	37,56	37,56	92,01	74,45
1,80 m	109 771	2 500	250	10 977	60 374	39,52	3,62	20,53	63,67	43,14	100,00	43,91	43,91	107,58	87,05
2,05 m	115 616	2 500	250	11 562	63 589	41,62	3,82	21,62	67,06	45,44	100,00	46,25	46,25	113,30	91,68
2,30 m	119 173	2 500	250	11 917	65 545	42,90	3,93	22,29	69,12	46,83	100,00	47,67	47,67	116,79	94,50

6.8 Power harrows

1,2 m	98 337	2 500	250	9 834	54 085	35,40	3,25	18,39	57,04	38,65	40,00	15,73	15,73	72,77	54,38
1,5 m	109 644	2 500	250	10 964	60 304	39,47	3,62	20,50	63,59	43,09	40,00	17,54	17,54	81,14	60,63

6.9 Ridgers

6.9.1 Disc ridgers															
1 row	12 450	2 000	150	1 245	6 848	5,60	0,68	3,88	10,17	6,29	75,00	4,67	4,67	14,84	10,96
2 row	23 750	2 000	150	2 375	13 063	10,69	1,31	7,40	19,40	11,99	75,00	8,91	8,91	28,30	20,90
3 row	32 850	2 000	150	3 285	18 068	14,78	1,81	10,24	26,83	16,59	75,00	12,32	12,32	39,15	28,91
6.9.2 Shear ridgers															
1 row	10 250	2 000	150	1 025	5 638	4,61	0,56	3,19	8,37	5,18	75,00	3,84	3,84	12,21	9,02
2 row	13 600	2 000	150	1 360	7 480	6,12	0,75	4,24	11,11	6,87	75,00	5,10	5,10	16,21	11,97
3 row	15 350	2 000	150	1 535	8 443	6,91	0,84	4,78	12,54	7,75	75,00	5,76	5,76	18,29	13,51

6.10 Rotavators

1,3 m	62 265	2 500	250	6 227	34 246	22,42	2,05	11,64	36,11	24,47	100,00	24,91	24,91	61,02	49,38
1,5 m	64 575	2 500	250	6 458	35 516	23,25	2,13	12,08	37,45	25,38	100,00	25,83	25,83	63,28	51,21
1,8 m	66 885	2 500	250	6 689	36 787	24,08	2,21	12,51	38,79	26,29	100,00	26,75	26,75	65,55	53,04
2,0 m	69 510	2 500	250	6 951	38 231	25,02	2,29	13,00	40,32	27,32	100,00	27,80	27,80	68,12	55,12

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

7. TINE IMPLEMENTS

7.1 Cultivators

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
7.1.1 Row crop															
2 row (0,9 m)	26 507	2 500	250	2 651	14 579	9,54	0,87	4,96	15,37	10,42	100,00	10,60	10,60	25,98	21,02
4 row (0,9 m)	42 100	2 500	250	4 210	23 155	15,16	1,39	7,87	24,42	16,55	100,00	16,84	16,84	41,26	33,39
6 row (0,9 m)	66 413	2 500	250	6 641	36 527	23,91	2,19	12,42	38,52	26,10	100,00	26,57	26,57	65,08	52,67
8 row (0,9 m)	82 525	2 500	250	8 252	45 389	29,71	2,72	15,43	47,86	32,43	100,00	33,01	33,01	80,87	65,44
8 row folding unit	130 388	2 500	250	13 039	71 713	46,94	4,30	24,38	75,63	51,24	100,00	52,16	52,16	127,78	103,40
7.1.2 Field cultivators—shank tillers															
1,7 m–5 tines (C shank)	14 207	2 500	250	1 421	7 814	5,11	0,47	2,66	8,24	5,58	100,00	5,68	5,68	13,92	11,27
2,0 m–7 tines (C shank)	19 478	2 500	250	1 948	10 713	7,01	0,64	3,64	11,30	7,65	100,00	7,79	7,79	19,09	15,45
2,5 m–9 tines (C shank)	22 680	2 500	250	2 268	12 474	8,16	0,75	4,24	13,15	8,91	100,00	9,07	9,07	22,23	17,99
3,0 m–31 tines (C shank)	29 750	2 500	250	2 975	16 363	10,71	0,98	5,56	17,26	11,69	100,00	11,90	11,90	29,16	23,59
3,4 m–34 tines (C shank)	39 260	2 500	250	3 926	21 593	14,13	1,30	7,34	22,77	15,43	100,00	15,70	15,70	38,47	31,13
4,0 m–41 tines (C shank)	35 228	2 500	250	3 523	19 375	12,68	1,16	6,59	20,43	13,84	100,00	14,09	14,09	34,52	27,94
7.1.3 Field cultivators—vibro tillers															
5 tines (double beam)	15 750	2 500	250	1 575	8 663	5,67	0,52	2,95	9,14	6,19	60,00	3,78	3,78	12,92	9,97
2,0 m–7 tines (double beam)	19 058	2 500	250	1 906	10 482	6,86	0,63	3,56	11,05	7,49	60,00	4,57	4,57	15,63	12,06
2,5 m–9 tines (double beam)	29 085	2 500	250	2 909	15 997	10,47	0,96	5,44	16,87	11,43	60,00	6,98	6,98	23,85	18,41
2,5 m–9 tines (triple beam)	30 083	2 500	250	3 008	16 545	10,83	0,99	5,63	17,45	11,82	60,00	7,22	7,22	24,67	19,04
3,5 m–13 tines (triple beam)	42 998	2 500	250	4 300	23 649	15,48	1,42	8,04	24,94	16,90	60,00	10,32	10,32	35,26	27,22
3,5 m–15 tines (triple beam)	46 305	2 500	250	4 631	25 468	16,67	1,53	8,66	26,86	18,20	60,00	11,11	11,11	37,97	29,31
6,0 m–25 tines (triple beam)	127 801	2 500	250	12 780	70 290	46,01	4,22	23,90	74,12	50,23	60,00	30,67	30,67	104,80	80,90

Notes	1) Life period	hours—as per table
	2) Average use per annum	hours/annum—as per table
	3) Salvage value	10% of purchase price
	4) Average investment	= (Purchase price + salvage value)/2
	5) Depreciation cost per hour	= (Purchase price - salvage value)/life period in hours
	6) Insurance cost per hour	1,5% of average investment/hours per annum
	7) Interest cost per hour	8,5% of average investment/hours per annum
	8) Repairs and maintenance cost per hour	% of purchase price/life period in hours—as per table

8. PLANTING EQUIPMENT

8.1 Single-kernel planters

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
<i>8.1.1 Mounted</i>															
2 row (0,9 m) Mech	49 787	1 500	150	4 979	27 383	29,87	2,74	15,52	48,13	32,61	80,00	26,55	26,55	74,68	59,16
2 row (0,75/0,90 m) Mech/hydr	118 083	1 500	150	11 808	64 946	70,85	6,49	36,80	114,15	77,34	80,00	62,98	62,98	177,12	140,32
2 row (0,9 m) Air/mech	100 792	1 500	150	10 079	55 436	60,48	5,54	31,41	97,43	66,02	80,00	53,76	53,76	151,19	119,77
3 row vegetable (0,2 m) Air	121 390	1 500	150	12 139	66 765	72,83	6,68	37,83	117,34	79,51	80,00	64,74	64,74	182,09	144,25
3 row (0,9 m) Mech	80 135	1 500	150	8 014	44 074	48,08	4,41	24,98	77,46	52,49	80,00	42,74	42,74	120,20	95,23
3 row (1,50 m) Mech	50 950	1 500	150	5 095	28 023	30,57	2,80	15,88	49,25	33,37	80,00	27,17	27,17	76,43	60,55
3 row (1,5 m) Air/Hydro	154 600	1 500	150	15 460	85 030	92,76	8,50	48,18	149,45	101,26	80,00	82,45	82,45	231,90	183,72
3 row (2,30 m) Mech/mech	135 000	1 500	150	13 500	74 250	81,00	7,43	42,08	130,50	88,43	80,00	72,00	72,00	202,50	160,43
4 row vegetable (0,2 m) Air	134 860	1 500	150	13 486	74 173	80,92	7,42	42,03	130,36	88,33	80,00	71,93	71,93	202,29	160,26
4 row (0,9 m) Mech	106 442	1 500	150	10 644	58 543	63,87	5,85	33,17	102,89	69,72	80,00	56,77	56,77	159,66	126,49
4 row (0,9 m) Air/Hydro	172 646	1 500	150	17 265	94 955	103,59	9,50	53,81	166,89	113,08	80,00	92,08	92,08	258,97	205,16
4 row (0,9 m) Air/mech	135 146	1 500	150	13 515	74 330	81,09	7,43	42,12	130,64	88,52	80,00	72,08	72,08	202,72	160,60
4 row no-till (0,9 m) Air/hydro	171 813	1 500	150	17 181	94 497	103,09	9,45	53,55	166,09	112,54	80,00	91,63	91,63	257,72	204,17
6 row vegetable (0,2 m) Air	158 515	1 500	150	15 852	87 183	95,11	8,72	49,40	153,23	103,83	80,00	84,54	84,54	237,77	188,37
6 row (0,7 m) Mech	178 238	1 500	150	17 824	98 031	106,94	9,80	55,55	172,30	116,75	80,00	95,06	95,06	267,36	211,81
6 row (0,7 m) Air/mech	223 312	1 500	150	22 331	122 822	133,99	12,28	69,60	215,87	146,27	80,00	119,10	119,10	334,97	265,37
6 row (0,9 m) Air/hydro	226 283	1 500	150	22 628	124 455	135,77	12,45	70,52	218,74	148,22	80,00	120,68	120,68	339,42	268,90
6 row no-till (0,9 m) Air/hydro	224 465	1 500	150	22 447	123 456	134,68	12,35	69,96	216,98	147,02	80,00	119,71	119,71	336,70	266,74
8 row (0,20 m) Air	225 575	1 500	150	22 558	124 066	135,35	12,41	70,30	218,06	147,75	80,00	120,31	120,31	338,36	268,06
8 row (0,9 m) Air/hydro	354 058	1 500	150	35 406	194 732	212,43	19,47	110,35	342,26	231,91	80,00	188,83	188,83	531,09	420,74
8 row no-till (0,9 m)	316 872	1 500	150	31 687	174 280	190,12	17,43	98,76	306,31	207,55	80,00	169,00	169,00	475,31	376,55

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

8.1 Single-kernel planters (cont.)

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
<i>8.1.2 Trailed</i>															
3 row (1,5 m) Mech	182 350	1 500	150	18 235	100 293	109,41	10,03	56,83	176,27	119,44	80,00	97,25	97,25	273,53	216,69
3 row (1,5 m) Mech/hydro	192 516	1 500	150	19 252	105 884	115,51	10,59	60,00	186,10	126,10	80,00	102,68	102,68	288,77	228,77
3 row (1,5 m) Air/Hydro	212 845	1 500	150	21 285	117 065	127,71	11,71	66,34	205,75	139,41	80,00	113,52	113,52	319,27	252,93
3 row no-till (1,5 m) Air/hydro	190 530	1 500	150	19 053	104 792	114,32	10,48	59,38	184,18	124,80	80,00	101,62	101,62	285,80	226,41
3 row (2,3 m) Mech	188 700	1 500	150	18 870	103 785	113,22	10,38	58,81	182,41	123,60	80,00	100,64	100,64	283,05	224,24
3 row (2,3 m) Mech/hydro	238 007	1 500	150	23 801	130 904	142,80	13,09	74,18	230,07	155,89	80,00	126,94	126,94	357,01	282,83
3 row (2,3 m) Air/hydro	279 448	1 500	150	27 945	153 696	167,67	15,37	87,09	270,13	183,04	80,00	149,04	149,04	419,17	332,08
3 row no-till (2,3 m) Air/hydro	190 530	1 500	150	19 053	104 792	114,32	10,48	59,38	184,18	124,80	80,00	101,62	101,62	285,80	226,41
4 row (0,9 m) Mech	225 810	1 500	150	22 581	124 196	135,49	12,42	70,38	218,28	147,91	80,00	120,43	120,43	338,72	268,34
4 row (0,9 m) Mech/hydro	173 197	1 500	150	17 320	95 259	103,92	9,53	53,98	167,42	113,44	80,00	92,37	92,37	259,80	205,82
4 row (0,9 m) Air/hydro	296 737	1 500	150	29 674	163 205	178,04	16,32	92,48	286,85	194,36	80,00	158,26	158,26	445,11	352,62
4 row no-till (0,9 m) Air/hydro	276 763	1 500	150	27 676	152 220	166,06	15,22	86,26	267,54	181,28	80,00	147,61	147,61	415,15	328,89
4 row (tram) Air/hydr	216 895	1 500	150	21 690	119 292	130,14	11,93	67,60	209,67	142,07	80,00	115,68	115,68	325,34	257,74
5 row (1,5 m) Mech/hydro	350 529	1 500	150	35 053	192 791	210,32	19,28	109,25	338,84	229,60	80,00	186,95	186,95	525,79	416,54
5 row (1,5 m) Air/hydro	383 896	1 500	150	38 390	211 143	230,34	21,11	119,65	371,10	251,45	80,00	204,74	204,74	575,84	456,20
5 row no-till (1,5 m) Air/hydro	254 655	1 500	150	25 466	140 060	152,79	14,01	79,37	246,17	166,80	80,00	135,82	135,82	381,98	302,62
5 row (1,50 m) Air/mech	298 579	1 500	150	29 858	164 218	179,15	16,42	93,06	288,63	195,57	80,00	159,24	159,24	447,87	354,81
6 row (0,75 m) Air/hydr	506 778	1 500	150	50 678	278 728	304,07	27,87	157,95	489,89	331,94	80,00	270,28	270,28	760,17	602,22
6 row (0,75 m) Air/mech	292 971	1 500	150	29 297	161 134	175,78	16,11	91,31	283,21	191,90	80,00	156,25	156,25	439,46	348,15
6 row (0,9 m) Mech/hydro	323 286	1 500	150	32 329	177 807	193,97	17,78	100,76	312,51	211,75	80,00	172,42	172,42	484,93	384,17
6 row (0,9 m) Air/hydro	454 359	1 500	150	45 436	249 897	272,62	24,99	141,61	439,21	297,61	80,00	242,32	242,32	681,54	539,93
6 row No-Till (0,9 m) Air/hydro	446 858	1 500	150	44 686	245 772	268,11	24,58	139,27	431,96	292,69	80,00	238,32	238,32	670,29	531,02
6 row (0,90 m) Air/mech	299 100	1 500	150	29 910	164 505	179,46	16,45	93,22	289,13	195,91	80,00	159,52	159,52	448,65	355,43
8 row (0,75 m) Mech/hydro	397 230	1 500	150	39 723	218 477	238,34	21,85	123,80	383,99	260,19	80,00	211,86	211,86	595,85	472,04
8 row (0,75 m) Air/hydro	447 251	1 500	150	44 725	245 988	268,35	24,60	139,39	432,34	292,95	80,00	238,53	238,53	670,88	531,48
8 row (0,75 m) Air/mech	361 382	1 500	150	36 138	198 760	216,83	19,88	112,63	349,34	236,71	80,00	192,74	192,74	542,07	429,44
8 row (0,9 m) Mech/hydro	410 068	1 500	150	41 007	225 537	246,04	22,55	127,80	396,40	268,59	80,00	218,70	218,70	615,10	487,30
8 row (0,9 m) Air/hydro	526 705	1 500	150	52 671	289 688	316,02	28,97	164,16	509,15	344,99	80,00	280,91	280,91	790,06	625,90
8 row no-till (0,9 m) Air/hydro	537 527	1 500	150	53 753	295 640	322,52	29,56	167,53	519,61	352,08	80,00	286,68	286,68	806,29	638,76
12 row (0,75 m) Air/hydro	835 700	1 500	150	83 570	459 635	501,42	45,96	260,46	807,84	547,38	80,00	445,71	445,71	1 253,55	993,09
12 row (0,9 m) Air/hydro	1 212 125	1 500	150	121 213	666 669	727,28	66,67	377,78	1 171,72	793,94	80,00	646,47	646,47	1 818,19	1 440,41

Notes	1) Life period	hours—as per table
	2) Average use per annum	hours/annum—as per table
	3) Salvage value	10% of purchase price
	4) Average investment	= (Purchase price + salvage value)/2
	5) Depreciation cost per hour	= (Purchase price - salvage value)/life period in hours
	6) Insurance cost per hour	1,5% of average investment/hours per annum
	7) Interest cost per hour	8,5% of average investment/hours per annum
	8) Repairs and maintenance cost per hour	% of purchase price/life period in hours—as per table

8.2 Seed drills

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
8.2.1 Mounted															
7 rows x 370 mm	148 400	1 500	150	14 840	81 620	89,04	8,16	46,25	143,45	97,20	80,00	79,15	79,15	222,60	176,35
9 rows x 370 mm	185 000	1 500	150	18 500	101 750	111,00	10,18	57,66	178,83	121,18	80,00	98,67	98,67	277,50	219,84
12 rows x 370 mm	246 550	1 500	150	24 655	135 603	147,93	13,56	76,84	238,33	161,49	80,00	131,49	131,49	369,83	292,98
21 rows x 140 mm	85 603	1 500	150	8 560	47 082	51,36	4,71	26,68	82,75	56,07	80,00	45,65	45,65	128,40	101,72
33 rows x 120 mm	160 000	1 500	150	16 000	88 000	96,00	8,80	49,87	154,67	104,80	80,00	85,33	85,33	240,00	190,13
8.2.2 Trailed—conventional															
4 rows x 900 mm	152 874	1 500	150	15 287	84 081	91,72	8,41	47,65	147,78	100,13	80,00	81,53	81,53	229,31	181,67
6 rows x 900 mm	382 311	1 500	150	38 231	210 271	229,39	21,03	119,15	369,57	250,41	80,00	203,90	203,90	573,47	454,31
8 rows x 450 mm	359 767	1 500	150	35 977	197 872	215,86	19,79	112,13	347,77	235,65	80,00	191,88	191,88	539,65	427,52
9 rows x 450 mm	373 665	1 500	150	37 367	205 516	224,20	20,55	116,46	361,21	244,75	80,00	199,29	199,29	560,50	444,04
12 rows x 450 mm	462 896	1 500	150	46 290	254 593	277,74	25,46	144,27	447,47	303,20	80,00	246,88	246,88	694,34	550,07
13 rows x 170 mm	113 256	1 500	150	11 326	62 291	67,95	6,23	35,30	109,48	74,18	80,00	60,40	60,40	169,88	134,59
14 rows x 300 mm	303 394	1 500	150	30 339	166 867	182,04	16,69	94,56	293,28	198,72	80,00	161,81	161,81	455,09	360,53
17 rows x 170 mm	518 970	1 500	150	51 897	285 434	311,38	28,54	161,75	501,67	339,93	80,00	276,78	276,78	778,46	616,71
19 rows x 170 mm	605 760	1 500	150	60 576	333 168	363,46	33,32	188,80	585,57	396,77	80,00	323,07	323,07	908,64	719,84
21 rows x 200 mm	337 412	1 500	150	33 741	185 577	202,45	18,56	105,16	326,16	221,00	80,00	179,95	179,95	506,12	400,96
22 rows x 180 mm	378 840	1 500	150	37 884	208 362	227,30	20,84	118,07	366,21	248,14	80,00	202,05	202,05	568,26	450,19
23 rows x 170 mm	734 330	1 500	150	73 433	403 882	440,60	40,39	228,87	709,85	480,99	80,00	391,64	391,64	1 101,50	872,63
24 rows x 170 mm	355 430	1 500	150	35 543	195 487	213,26	19,55	110,78	343,58	232,81	80,00	189,56	189,56	533,15	422,37
27 rows x 170 mm	817 540	1 500	150	81 754	449 647	490,52	44,96	254,80	790,29	535,49	80,00	436,02	436,02	1 226,31	971,51
33 rows x 300 mm	1 177 800	1 500	150	117 780	647 790	706,68	64,78	367,08	1 138,54	771,46	80,00	628,16	628,16	1 766,70	1 399,62
37 rows x 300 mm	1 317 800	1 500	150	131 780	724 790	790,68	72,48	410,71	1 273,87	863,16	80,00	702,83	702,83	1 976,70	1 565,99
8.2.3 Trailed—no till															
4 rows x 900 mm	277 998	1 500	150	27 800	152 899	166,80	15,29	86,64	268,73	182,09	80,00	148,27	148,27	417,00	330,35
6 rows x 800 mm	426 176	1 500	150	42 618	234 397	255,71	23,44	132,82	411,97	279,15	80,00	227,29	227,29	639,26	506,44
6 rows x 900 mm	445 124	1 500	150	44 512	244 818	267,07	24,48	138,73	430,29	291,56	80,00	237,40	237,40	667,69	528,96
7 rows x 500 mm	426 786	1 500	150	42 679	234 732	256,07	23,47	133,02	412,56	279,54	80,00	227,62	227,62	640,18	507,16
8 rows x 700 mm	598 013	1 500	150	59 801	328 907	358,81	32,89	186,38	578,08	391,70	80,00	318,94	318,94	897,02	710,64
9 rows x 450 mm	497 602	1 500	150	49 760	273 681	298,56	27,37	155,09	481,02	325,93	80,00	265,39	265,39	746,40	591,32
10 rows x 500 mm	673 743	1 500	150	67 374	370 559	404,25	37,06	209,98	651,28	441,30	80,00	359,33	359,33	1 010,61	800,63
10 rows x 700 mm	607 041	1 500	150	60 704	333 872	364,22	33,39	189,19	586,81	397,61	80,00	323,76	323,76	910,56	721,37
10 rows x [400–900 mm]	612 493	1 500	150	61 249	336 871	367,50	33,69	190,89	592,08	401,18	80,00	326,66	326,66	918,74	727,85
11 rows x 450 mm	584 771	1 500	150	58 477	321 624	350,86	32,16	182,25	565,28	383,03	80,00	311,88	311,88	877,16	694,90
12 rows x 900 mm	888 813	1 500	150	88 881	488 847	533,29	48,88	277,01	859,19	582,17	80,00	474,03	474,03	1 333,22	1 056,21
13 rows x 175 mm	113 256	1 500	150	11 326	62 291	67,95	6,23	35,30	109,48	74,18	80,00	60,40	60,40	169,88	134,59
15 rows x 175 mm	839 312	1 500	150	83 931	461 622	503,59	46,16	261,59	811,33	549,75	80,00	447,63	447,63	1 258,97	997,38
16 rows x 190 mm	376 412	1 500	150	37 641	207 027	225,85	20,70	117,32	363,86	246,55	80,00	200,75	200,75	564,62	447,30
22 rows x 400 mm	1 200 644	1 500	150	120 064	660 354	720,39	66,04	374,20	1 160,62	786,42	80,00	640,34	640,34	1 800,97	1 426,76
24 rows x 190 mm	453 451	1 500	150	45 345	249 398	272,07	24,94	141,33	438,34	297,01	80,00	241,84	241,84	680,18	538,85
26 rows x 400 mm	1 453 499	1 500	150	145 350	799 425	872,10	79,94	453,01	1 405,05	952,04	80,00	775,20	775,20	2 180,25	1 727,24
32 rows x 190 mm	675 571	1 500	150	67 557	371 564	405,34	37,16	210,55	653,05	442,50	80,00	360,30	360,30	1 013,36	802,80

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

8.3 Wheat planters

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
4 row	95 650	1 500	150	9 565	52 608	57,39	5,26	29,81	92,46	62,65	80,00	51,01	51,01	143,48	113,66
7 row	148 400	1 500	150	14 840	81 620	89,04	8,16	46,25	143,45	97,20	80,00	79,15	79,15	222,60	176,35
9 row	185 000	1 500	150	18 500	101 750	111,00	10,18	57,66	178,83	121,18	80,00	98,67	98,67	277,50	219,84
12 row	246 550	1 500	150	24 655	135 603	147,93	13,56	76,84	238,33	161,49	80,00	131,49	131,49	369,83	292,98

8.4 Potato planters

2 row	112 705	1 500	150	11 270	61 988	67,62	6,20	35,13	108,95	73,82	80,00	60,11	60,11	169,06	133,93
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8.5 Vegetable transplanters

2 row	92 750	1 500	150	9 275	51 013	55,65	5,10	28,91	89,66	60,75	80,00	49,47	49,47	139,13	110,22
3 row	118 950	1 500	150	11 895	65 423	71,37	6,54	37,07	114,99	77,91	80,00	63,44	63,44	178,43	141,35
4 row	145 150	1 500	150	14 515	79 833	87,09	7,98	45,24	140,31	95,07	80,00	77,41	77,41	217,73	172,49

8.6 Fine-seed seeders

3 m	108 759	1 500	150	10 876	59 817	65,26	5,98	33,90	105,13	71,24	80,00	58,00	58,00	163,14	129,24
4 m	481 316	1 500	150	48 132	264 724	288,79	26,47	150,01	465,27	315,26	80,00	256,70	256,70	721,97	571,96

8.7 Land rollers

2 m	19 793	1 500	150	1 979	10 886	11,88	1,09	6,17	19,13	12,96	80,00	10,56	10,56	29,69	23,52
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- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

9. PLANT NUTRITION AND PEST CONTROL EQUIPMENT

9.1 Fertiliser spreaders

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
9.1.1 Mounted															
Single disc (250 ℓ)	4 980	1 200	150	498	2 739	3,74	0,27	1,55	5,56	4,01	90,00	3,74	3,74	9,30	7,74
Single disc (300 ℓ)	5 082	1 200	150	508	2 795	3,81	0,28	1,58	5,67	4,09	90,00	3,81	3,81	9,49	7,90
Single disc (350 ℓ)	6 400	1 200	150	640	3 520	4,80	0,35	1,99	7,15	5,15	90,00	4,80	4,80	11,95	9,95
Single disc (400 ℓ)	14 759	1 200	150	1 476	8 117	11,07	0,81	4,60	16,48	11,88	90,00	11,07	11,07	27,55	22,95
Pendulum (400 ℓ)	26 012	1 200	150	2 601	14 307	19,51	1,43	8,11	29,05	20,94	90,00	19,51	19,51	48,56	40,45
Single disc (500 ℓ)	7 004	1 200	150	700	3 852	5,25	0,39	2,18	7,82	5,64	90,00	5,25	5,25	13,07	10,89
Single disc (600 ℓ)	9 429	1 200	150	943	5 186	7,07	0,52	2,94	10,53	7,59	90,00	7,07	7,07	17,60	14,66
Double disc (500 ℓ)	62 500	1 200	150	6 250	34 375	46,88	3,44	19,48	69,79	50,31	90,00	46,88	46,88	116,67	97,19
Pendulum (500 ℓ)	28 391	1 200	150	2 839	15 615	21,29	1,56	8,85	31,70	22,85	90,00	21,29	21,29	53,00	44,15
Double disc (600 ℓ)	40 836	1 200	150	4 084	22 460	30,63	2,25	12,73	45,60	32,87	90,00	30,63	30,63	76,23	63,50
Pendulum (600 ℓ)	29 151	1 200	150	2 915	16 033	21,86	1,60	9,09	32,55	23,47	90,00	21,86	21,86	54,42	45,33
Double disc (700 ℓ)	48 982	1 200	150	4 898	26 940	36,74	2,69	15,27	54,70	39,43	90,00	36,74	36,74	91,43	76,17
Double disc (800 ℓ)	33 298	1 200	150	3 330	18 314	24,97	1,83	10,38	37,18	26,80	90,00	24,97	24,97	62,16	51,78
Pendulum (800 ℓ)	31 841	1 200	150	3 184	17 513	23,88	1,75	9,92	35,56	25,63	90,00	23,88	23,88	59,44	49,51
Double disc (850 ℓ)	65 600	1 200	150	6 560	36 080	49,20	3,61	20,45	73,25	52,81	90,00	49,20	49,20	122,45	102,01
Double disc (900 ℓ)	62 800	1 200	150	6 280	34 540	47,10	3,45	19,57	70,13	50,55	90,00	47,10	47,10	117,23	97,65
Double disc (1 000 ℓ)	46 309	1 200	150	4 631	25 470	34,73	2,55	14,43	51,71	37,28	90,00	34,73	34,73	86,44	72,01
Pendulum (1 000 ℓ)	35 223	1 200	150	3 522	19 373	26,42	1,94	10,98	39,33	28,35	90,00	26,42	26,42	65,75	54,77
Double disc (1 050 ℓ)	49 878	1 200	150	4 988	27 433	37,41	2,74	15,55	55,70	40,15	90,00	37,41	37,41	93,11	77,56
Double disc (1 100 ℓ)	74 100	1 200	150	7 410	40 755	55,58	4,08	23,09	82,75	59,65	90,00	55,58	55,58	138,32	115,23
Double disc (1 200 ℓ)	52 502	1 200	150	5 250	28 876	39,38	2,89	16,36	58,63	42,26	90,00	39,38	39,38	98,00	81,64
Double disc (1 300 ℓ)	65 000	1 200	150	6 500	35 750	48,75	3,58	20,26	72,58	52,33	90,00	48,75	48,75	121,33	101,08
Double disc (1 400 ℓ)	50 025	1 200	150	5 002	27 513	37,52	2,75	15,59	55,86	40,27	90,00	37,52	37,52	93,38	77,79
Double disc (1 500 ℓ)	130 383	1 200	150	13 038	71 711	97,79	7,17	40,64	145,59	104,96	90,00	97,79	97,79	243,38	202,75
Double disc (1 600 ℓ)	55 438	1 200	150	5 544	30 491	41,58	3,05	17,28	61,91	44,63	90,00	41,58	41,58	103,48	86,21
Double disc (1 650 ℓ)	83 994	1 200	150	8 399	46 197	63,00	4,62	26,18	93,79	67,62	90,00	63,00	63,00	156,79	130,61
Double disc (1 700 ℓ)	58 979	1 200	150	5 898	32 438	44,23	3,24	18,38	65,86	47,48	90,00	44,23	44,23	110,09	91,71
Double disc (2 000 ℓ)	79 905	1 200	150	7 991	43 948	59,93	4,39	24,90	89,23	64,32	90,00	59,93	59,93	149,16	124,25
Double disc (2 500 ℓ)	93 686	1 200	150	9 369	51 527	70,26	5,15	29,20	104,62	75,42	90,00	70,26	70,26	174,88	145,68
Double disc (3 000 ℓ)	214 187	1 200	150	21 419	117 803	160,64	11,78	66,75	239,18	172,42	90,00	160,64	160,64	399,82	333,06
Double disc (4 000 ℓ)	411 240	1 200	150	41 124	226 182	308,43	22,62	128,17	459,22	331,05	90,00	308,43	308,43	767,65	639,48
Double disc (5 000 ℓ)	423 000	1 200	150	42 300	232 650	317,25	23,27	131,84	472,35	340,52	90,00	317,25	317,25	789,60	657,77

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

9.1 Fertiliser spreaders (cont.)

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
9.1.2 Trailed															
Double disc (1 600 ℓ)	95 475	1 200	150	9 548	52 511	71,61	5,25	29,76	106,61	76,86	90,00	71,61	71,61	178,22	148,46
Double disc (1 900 ℓ)	154 720	1 200	150	15 472	85 096	116,04	8,51	48,22	172,77	124,55	90,00	116,04	116,04	288,81	240,59
Double disc (2 450 ℓ)	155 000	1 200	150	15 500	85 250	116,25	8,53	48,31	173,08	124,78	90,00	116,25	116,25	289,33	241,03
Double disc (2 900 ℓ)	157 680	1 200	150	15 768	86 724	118,26	8,67	49,14	176,08	126,93	90,00	118,26	118,26	294,34	245,19
Double disc (3 050 ℓ)	180 900	1 200	150	18 090	99 495	135,68	9,95	56,38	202,01	145,62	90,00	135,68	135,68	337,68	281,30
Double disc (4 100 ℓ)	147 302	1 200	150	14 730	81 016	110,48	8,10	45,91	164,49	118,58	90,00	110,48	110,48	274,96	229,05
Double disc (4 500 ℓ)	212 640	1 200	150	21 264	116 952	159,48	11,70	66,27	237,45	171,18	90,00	159,48	159,48	396,93	330,66
Double disc (4 550 ℓ)	206 900	1 200	150	20 690	113 795	155,18	11,38	64,48	231,04	166,55	90,00	155,18	155,18	386,21	321,73
Double disc (5 700 ℓ)	217 100	1 200	150	21 710	119 405	162,83	11,94	67,66	242,43	174,77	90,00	162,83	162,83	405,25	337,59
Double disc (6 400 ℓ)	261 200	1 200	150	26 120	143 660	195,90	14,37	81,41	291,67	210,27	90,00	195,90	195,90	487,57	406,17
Double disc (7 500 ℓ)	173 572	1 200	150	17 357	95 465	130,18	9,55	54,10	193,82	139,73	90,00	130,18	130,18	324,00	269,90
Double disc (8 950 ℓ)	266 700	1 200	150	26 670	146 685	200,03	14,67	83,12	297,82	214,69	90,00	200,03	200,03	497,84	414,72
Double disc (11 550 ℓ)	419 400	1 200	150	41 940	230 670	314,55	23,07	130,71	468,33	337,62	90,00	314,55	314,55	782,88	652,17
Double disc (17 400 ℓ)	545 900	1 200	150	54 590	300 245	409,43	30,02	170,14	609,59	439,45	90,00	409,43	409,43	1 019,01	848,87
Double disc (21 600 ℓ)	564 000	1 200	150	56 400	310 200	423,00	31,02	175,78	629,80	454,02	90,00	423,00	423,00	1 052,80	877,02

9.2 Manure spreaders

3.0 cu.m.	74 235	1 200	150	7 424	40 829	55,68	4,08	23,14	82,90	59,76	30,00	18,56	18,56	101,45	78,32
4.2 cu.m.	90 720	1 200	150	9 072	49 896	68,04	4,99	28,27	101,30	73,03	30,00	22,68	22,68	123,98	95,71

9.3 Lime spreaders

Trailed 2 ton	140 564	1 200	150	14 056	77 310	105,42	7,73	43,81	156,96	113,15	90,00	105,42	105,42	262,39	218,58
Trailed 3 ton	133 564	1 200	150	13 356	73 460	100,17	7,35	41,63	149,15	107,52	90,00	100,17	100,17	249,32	207,69
Trailed 5 ton	135 828	1 200	150	13 583	74 705	101,87	7,47	42,33	151,67	109,34	90,00	101,87	101,87	253,55	211,21

9.4 Mist blowers

9.4.1 Mounted with PTO drive															
300 ℓ General	91 180	1 500	150	9 118	50 149	54,71	5,01	28,42	88,14	59,72	50,00	30,39	30,39	118,53	90,12
400 ℓ General	56 870	1 500	150	5 687	31 278	34,12	3,13	17,72	54,97	37,25	50,00	18,96	18,96	73,93	56,21
600 ℓ General	78 713	1 500	150	7 871	43 292	47,23	4,33	24,53	76,09	51,56	50,00	26,24	26,24	102,33	77,79
800 ℓ	43 284	1 500	150	4 328	23 806	25,97	2,38	13,49	41,84	28,35	50,00	14,43	14,43	56,27	42,78
1 000 ℓ	94 111	1 500	150	9 411	51 761	56,47	5,18	29,33	90,97	61,64	50,00	31,37	31,37	122,34	93,01
1 600 ℓ	102 175	1 500	150	10 218	56 196	61,31	5,62	31,84	98,77	66,92	50,00	34,06	34,06	132,83	100,98
2 000 ℓ	104 760	1 500	150	10 476	57 618	62,86	5,76	32,65	101,27	68,62	50,00	34,92	34,92	136,19	103,54
9.4.2 Trailed with PTO drive															
1 000 ℓ General	116 045	1 500	150	11 605	63 825	69,63	6,38	36,17	112,18	76,01	50,00	38,68	38,68	150,86	114,69
1 500 ℓ General	147 087	1 500	150	14 709	80 898	88,25	8,09	45,84	142,18	96,34	50,00	49,03	49,03	191,21	145,37
2 000 ℓ General	164 575	1 500	150	16 458	90 516	98,75	9,05	51,29	159,09	107,80	50,00	54,86	54,86	213,95	162,65
4 000 ℓ	335 000	1 500	150	33 500	184 250	201,00	18,43	104,41	323,83	219,43	50,00	111,67	111,67	435,50	331,09

- Notes**
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 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

9.5 Boom sprayers

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
9.5.1 Mounted															
9.5.1.1 MAX 400 ℓ TANK CAPACITY															
6 m–10 m boom	27 702	1 500	150	2 770	15 236	16,62	1,52	8,63	26,78	18,14	50,00	9,23	9,23	36,01	27,38
9.5.1.2 MAX 600 ℓ TANK CAPACITY															
8 m–12 m boom	39 107	1 500	150	3 911	21 509	23,46	2,15	12,19	37,80	25,61	50,00	13,04	13,04	50,84	38,65
9.5.1.3 MAX 800 ℓ TANK CAPACITY															
10 m boom	23 515	1 500	150	2 352	12 933	14,11	1,29	7,33	22,73	15,40	50,00	7,84	7,84	30,57	23,24
12 m boom	67 586	1 500	150	6 759	37 172	40,55	3,72	21,06	65,33	44,27	50,00	22,53	22,53	87,86	66,80
9.5.1.4 MAX 1 000 ℓ TANK CAPACITY															
10 m boom	25 675	1 500	150	2 568	14 121	15,41	1,41	8,00	24,82	16,82	50,00	8,56	8,56	33,38	25,38
12 m boom	28 320	1 500	150	2 832	15 576	16,99	1,56	8,83	27,38	18,55	50,00	9,44	9,44	36,82	27,99
15 m boom	168 655	1 500	150	16 866	92 760	101,19	9,28	52,56	163,03	110,47	50,00	56,22	56,22	219,25	166,69
18 m boom	240 000	1 500	150	24 000	132 000	144,00	13,20	74,80	232,00	157,20	50,00	80,00	80,00	312,00	237,20
9.5.2 Trailed															
9.5.2.1 MAX 2 000 ℓ TANK CAPACITY															
12 m boom	45 715	1 500	150	4 572	25 143	27,43	2,51	14,25	44,19	29,94	50,00	15,24	15,24	59,43	45,18
14 m boom	122 607	1 500	150	12 261	67 434	73,56	6,74	38,21	118,52	80,31	50,00	40,87	40,87	159,39	121,18
18 m boom	292 000	1 500	150	29 200	160 600	175,20	16,06	91,01	282,27	191,26	50,00	97,33	97,33	379,60	288,59
9.5.2.2 MAX 2 400 ℓ TANK CAPACITY															
18 m boom	551 123	1 500	150	55 112	303 118	330,67	30,31	171,77	532,75	360,99	50,00	183,71	183,71	716,46	544,69
9.5.2.3 MAX 2 800 ℓ TANK CAPACITY															
24 m boom	321 249	1 500	150	32 125	176 687	192,75	17,67	100,12	310,54	210,42	50,00	107,08	107,08	417,62	317,50
9.5.2.4 MAX 3 000 ℓ TANK CAPACITY															
24 m boom	550 000	1 500	150	55 000	302 500	330,00	30,25	171,42	531,67	360,25	50,00	183,33	183,33	715,00	543,58
9.5.2.5 MAX 3 200 ℓ TANK CAPACITY															
18 m boom	700 695	1 500	150	70 069	385 382	420,42	38,54	218,38	677,34	458,96	50,00	233,56	233,56	910,90	692,52
9.5.2.6 MAX 4 000 ℓ TANK CAPACITY															
18 m boom	754 640	1 500	150	75 464	415 052	452,78	41,51	235,20	729,49	494,29	50,00	251,55	251,55	981,03	745,84
9.5.2.7 MAX 4 400 ℓ TANK CAPACITY															
30 m boom	1 150 850	1 500	150	115 085	632 968	690,51	63,30	358,68	1 112,49	753,81	50,00	383,62	383,62	1 496,11	1 137,42
9.5.2.8 MAX 5 000 ℓ TANK CAPACITY															
36 m boom	1 266 600	1 500	150	126 660	696 630	759,96	69,66	394,76	1 224,38	829,62	50,00	422,20	422,20	1 646,58	1 251,82
38 m boom	1 091 265	1 500	150	109 127	600 196	654,76	60,02	340,11	1 054,89	714,78	50,00	363,76	363,76	1 418,64	1 078,53

- Notes**
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 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

10. HAY AND SILAGE MACHINERY

10.1 Mowers

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
10.1.1 Cutterbar															
1,75 m	31 960	2 000	150	3 196	17 578	14,38	1,76	9,96	26,10	16,14	120,00	19,18	19,18	45,28	35,32
10.1.2 Disc and drum															
10.1.2.1 MOUNTED															
1,5 m drum	49 000	2 000	150	4 900	26 950	22,05	2,70	15,27	40,02	24,75	80,00	19,60	19,60	59,62	44,35
1,6 m disc	73 523	2 000	150	7 352	40 438	33,09	4,04	22,91	60,04	37,13	80,00	29,41	29,41	89,45	66,54
1,85 m drum	54 349	2 000	150	5 435	29 892	24,46	2,99	16,94	44,39	27,45	80,00	21,74	21,74	66,12	49,19
2,0 m disc	80 392	2 000	150	8 039	44 215	36,18	4,42	25,06	65,65	40,60	80,00	32,16	32,16	97,81	72,75
2,05 m disc	64 000	2 000	150	6 400	35 200	28,80	3,52	19,95	52,27	32,32	80,00	25,60	25,60	77,87	57,92
2,10 m disc	88 500	2 000	150	8 850	48 675	39,83	4,87	27,58	72,28	44,69	80,00	35,40	35,40	107,68	80,09
2,15 m disc	58 400	2 000	150	5 840	32 120	26,28	3,21	18,20	47,69	29,49	80,00	23,36	23,36	71,05	52,85
2,2 m drum	66 000	2 000	150	6 600	36 300	29,70	3,63	20,57	53,90	33,33	80,00	26,40	26,40	80,30	59,73
2,4 m disc	84 745	2 000	150	8 475	46 610	38,14	4,66	26,41	69,21	42,80	80,00	33,90	33,90	103,11	76,69
2,6 m disc	113 000	2 000	150	11 300	62 150	50,85	6,22	35,22	92,28	57,07	80,00	45,20	45,20	137,48	102,27
2,65 m drum	87 053	2 000	150	8 705	47 879	39,17	4,79	27,13	71,09	43,96	80,00	34,82	34,82	105,91	78,78
2,8 m disc	113 972	2 000	150	11 397	62 685	51,29	6,27	35,52	93,08	57,56	80,00	45,59	45,59	138,67	103,14
3,0 m drum	110 000	2 000	150	11 000	60 500	49,50	6,05	34,28	89,83	55,55	80,00	44,00	44,00	133,83	99,55
3,0 m disc	129 960	2 000	150	12 996	71 478	58,48	7,15	40,50	106,13	65,63	80,00	51,98	51,98	158,12	117,61
3,1 m disc	225 665	2 000	150	22 567	124 116	101,55	12,41	70,33	184,29	113,96	80,00	90,27	90,27	274,56	204,23
3,2 m disc	146 935	2 000	150	14 693	80 814	66,12	8,08	45,79	120,00	74,20	80,00	58,77	58,77	178,77	132,98
3,4 m disc	175 788	2 000	150	17 579	96 683	79,10	9,67	54,79	143,56	88,77	80,00	70,32	70,32	213,87	159,09
3,5 m disc	249 330	2 000	150	24 933	137 132	112,20	13,71	77,71	203,62	125,91	80,00	99,73	99,73	303,35	225,64
3,8 m disc	212 409	2 000	150	21 241	116 825	95,58	11,68	66,20	173,47	107,27	80,00	84,96	84,96	258,43	192,23
4,0 m disc	247 632	2 000	150	24 763	136 198	111,43	13,62	77,18	202,23	125,05	80,00	99,05	99,05	301,29	224,11
8,1 m disc	333 000	2 000	150	33 300	183 150	149,85	18,32	103,79	271,95	168,17	80,00	133,20	133,20	405,15	301,37
8,9 m disc	472 645	2 000	150	47 265	259 955	212,69	26,00	147,31	385,99	238,69	80,00	189,06	189,06	575,05	427,74
10.1.2.2 TRAILED															
2,4 m disc/roll	244 485	2 000	150	24 449	134 467	110,02	13,45	76,20	199,66	123,46	80,00	97,79	97,79	297,46	221,26
2,5 m disc/roll	354 970	2 000	150	35 497	195 234	159,74	19,52	110,63	289,89	179,26	80,00	141,99	141,99	431,88	321,25
2,8 m disc/roll	294 000	2 000	150	29 400	161 700	132,30	16,17	91,63	240,10	148,47	80,00	117,60	117,60	357,70	266,07
3,0 m disc/roll	384 095	2 000	150	38 410	211 252	172,84	21,13	119,71	313,68	193,97	80,00	153,64	153,64	467,32	347,61
3,2 m disc/roll	324 450	2 000	150	32 445	178 448	146,00	17,84	101,12	264,97	163,85	80,00	129,78	129,78	394,75	293,63
3,5 m disc/roll	474 955	2 000	150	47 496	261 225	213,73	26,12	148,03	387,88	239,85	80,00	189,98	189,98	577,86	429,83
3,6 m disc/roll	296 615	2 000	150	29 662	163 138	133,48	16,31	92,45	242,24	149,79	80,00	118,65	118,65	360,88	268,44
3,8 m disc/roll	457 565	2 000	150	45 757	251 661	205,90	25,17	142,61	373,68	231,07	80,00	183,03	183,03	556,70	414,10
4,0 m disc/roll	461 893	2 000	150	46 189	254 041	207,85	25,40	143,96	377,21	233,26	80,00	184,76	184,76	561,97	418,01
4,5 m disc/roll	502 083	2 000	150	50 208	276 146	225,94	27,61	156,48	410,03	253,55	80,00	200,83	200,83	610,87	454,39
4,8 m disc/roll	498 725	2 000	150	49 873	274 299	224,43	27,43	155,44	407,29	251,86	80,00	199,49	199,49	606,78	451,35
8,1 m disc/roll	599 266	2 000	150	59 927	329 596	269,67	32,96	186,77	489,40	302,63	80,00	239,71	239,71	729,11	542,34
8,9 m disc/roll	634 400	2 000	150	63 440	348 920	285,48	34,89	197,72	518,09	320,37	80,00	253,76	253,76	771,85	574,13

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 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

10.2 Mower conditioners

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
10.2.1 Mounted															
2,0–2,4 m	242 810	2 000	200	24 281	133 546	109,26	10,02	56,76	176,04	119,28	60,00	72,84	72,84	248,88	192,12
2,6–2,8 m	215 430	2 000	200	21 543	118 487	96,94	8,89	50,36	156,19	105,83	60,00	64,63	64,63	220,82	170,46
10.2.2 Trailed															
3,0 m	370 690	2 000	200	37 069	203 880	166,81	15,29	86,65	268,75	182,10	60,00	111,21	111,21	379,96	293,31
3,2 m	392 330	2 000	200	39 233	215 782	176,55	16,18	91,71	284,44	192,73	60,00	117,70	117,70	402,14	310,43
3,5 m	557 580	2 000	200	55 758	306 669	250,91	23,00	130,33	404,25	273,91	60,00	167,27	167,27	571,52	441,19
4,0 m	492 560	2 000	200	49 256	270 908	221,65	20,32	115,14	357,11	241,97	60,00	147,77	147,77	504,87	389,74
4,5 m	524 637	2 000	200	52 464	288 550	236,09	21,64	122,63	380,36	257,73	60,00	157,39	157,39	537,75	415,12
8,0 m	610 242	2 000	200	61 024	335 633	274,61	25,17	142,64	442,43	299,78	60,00	183,07	183,07	625,50	482,85

10.3 Slashers

10.3.1 Heavy duty															
1,2 m 4 blades	25 935	2 000	150	2 594	14 264	11,67	1,43	8,08	21,18	13,10	80,00	10,37	10,37	31,55	23,47
1,5 m 2 blades	29 190	2 000	150	2 919	16 055	13,14	1,61	9,10	23,84	14,74	80,00	11,68	11,68	35,51	26,42
1,5 m 4 blades	22 320	2 000	150	2 232	12 276	10,04	1,23	6,96	18,23	11,27	80,00	8,93	8,93	27,16	20,20
1,8 m 2 blades	31 710	2 000	150	3 171	17 441	14,27	1,74	9,88	25,90	16,01	80,00	12,68	12,68	38,58	28,70
1,8 m 4 blades	29 100	2 000	150	2 910	16 005	13,10	1,60	9,07	23,77	14,70	80,00	11,64	11,64	35,41	26,34
10.3.2 Extra heavy duty															
1,5 m 2 blades	35 280	2 000	150	3 528	19 404	15,88	1,94	11,00	28,81	17,82	80,00	14,11	14,11	42,92	31,93
1,5 m 4 blades	36 855	2 000	150	3 686	20 270	16,58	2,03	11,49	30,10	18,61	80,00	14,74	14,74	44,84	33,35
1,8 m 2 blades	36 225	2 000	150	3 623	19 924	16,30	1,99	11,29	29,58	18,29	80,00	14,49	14,49	44,07	32,78
1,8 m 4 blades	37 695	2 000	150	3 770	20 732	16,96	2,07	11,75	30,78	19,04	80,00	15,08	15,08	45,86	34,11
2,0 m 2 blades	38 115	2 000	150	3 812	20 963	17,15	2,10	11,88	31,13	19,25	80,00	15,25	15,25	46,37	34,49
2,0 m 4 blades	39 585	2 000	150	3 959	21 772	17,81	2,18	12,34	32,33	19,99	80,00	15,83	15,83	48,16	35,82

10.4 Haymakers

1,2 m 4 blades 345 kg	22 680	2 000	150	2 268	12 474	10,21	1,25	7,07	18,52	11,45	80,00	9,07	9,07	27,59	20,53
1,5 m 2 blades 513 kg	36 750	2 000	150	3 675	20 213	16,54	2,02	11,45	30,01	18,56	80,00	14,70	14,70	44,71	33,26
1,5 m 2 blades 557 kg	37 380	2 000	150	3 738	20 559	16,82	2,06	11,65	30,53	18,88	80,00	14,95	14,95	45,48	33,83
1,8 m 2 blades 553 kg	38 220	2 000	150	3 822	21 021	17,20	2,10	11,91	31,21	19,30	80,00	15,29	15,29	46,50	34,59
1,8 m 2 blades 610 kg	39 375	2 000	150	3 938	21 656	17,72	2,17	12,27	32,16	19,88	80,00	15,75	15,75	47,91	35,63
2,0 m 2 blades 656 kg	40 320	2 000	150	4 032	22 176	18,14	2,22	12,57	32,93	20,36	80,00	16,13	16,13	49,06	36,49
3,5 m 4 blades 1 298 kg	122 640	2 000	150	12 264	67 452	55,19	6,75	38,22	100,16	61,93	80,00	49,06	49,06	149,21	110,99

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 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

10.5 Hay rakes and tedders

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
10.5.1 Finger wheel rakes															
4 wheel - 2,3 m	9 236	2 000	200	924	5 080	4,16	0,38	2,16	6,70	4,54	120,00	5,54	5,54	12,24	10,08
4 wheel - 2,6 m	10 388	2 000	200	1 039	5 713	4,67	0,43	2,43	7,53	5,10	120,00	6,23	6,23	13,76	11,34
5 wheel - 2,8 m	12 463	2 000	200	1 246	6 855	5,61	0,51	2,91	9,04	6,12	120,00	7,48	7,48	16,51	13,60
5 wheel - 3,5 m	12 000	2 000	200	1 200	6 600	5,40	0,50	2,81	8,70	5,90	120,00	7,20	7,20	15,90	13,10
6 wheel - 3,5 m	15 346	2 000	200	1 535	8 440	6,91	0,63	3,59	11,13	7,54	120,00	9,21	9,21	20,33	16,75
8 wheel - 5,4 m	34 808	2 000	200	3 481	19 145	15,66	1,44	8,14	25,24	17,10	120,00	20,89	20,89	46,12	37,98
9 wheel - 5,4 m	33 140	2 000	200	3 314	18 227	14,91	1,37	7,75	24,03	16,28	120,00	19,88	19,88	43,91	36,16
9 wheel - 5,5 m	61 250	2 000	200	6 125	33 688	27,56	2,53	14,32	44,41	30,09	120,00	36,75	36,75	81,16	66,84
10 wheel - 5,4 m	40 600	2 000	200	4 060	22 330	18,27	1,67	9,49	29,44	19,94	120,00	24,36	24,36	53,80	44,30
10 wheel - 6,5 m	63 670	2 000	200	6 367	35 018	28,65	2,63	14,88	46,16	31,28	120,00	38,20	38,20	84,36	69,48
10 wheel - 8,3 m	32 435	2 000	200	3 243	17 839	14,60	1,34	7,58	23,52	15,93	120,00	19,46	19,46	42,98	35,39
11 wheel - 8,3 m	35 406	2 000	200	3 541	19 473	15,93	1,46	8,28	25,67	17,39	120,00	21,24	21,24	46,91	38,64
12 wheel - 7,6 m	53 679	2 000	200	5 368	29 523	24,16	2,21	12,55	38,92	26,37	120,00	32,21	32,21	71,12	58,58
12 wheel - 7,8 m	72 450	2 000	200	7 245	39 848	32,60	2,99	16,94	52,53	35,59	120,00	43,47	43,47	96,00	79,06
10.5.2 PTO-powered rakes															
10.5.2.1 RAKE TYPE															
4 wheel - 2,3 m	47 756	2 000	200	4 776	26 266	21,49	1,97	11,16	34,62	23,46	120,00	28,65	28,65	63,28	52,11
4 wheel - 2,6 m	92 128	2 000	200	9 213	50 670	41,46	3,80	21,53	66,79	45,26	120,00	55,28	55,28	122,07	100,53
5 wheel - 2,8 m	87 405	2 000	200	8 740	48 072	39,33	3,61	20,43	63,37	42,94	120,00	52,44	52,44	115,81	95,38
5 wheel - 3,5 m	75 000	2 000	200	7 500	41 250	33,75	3,09	17,53	54,38	36,84	120,00	45,00	45,00	99,38	81,84
6 wheel - 3,5 m	129 196	2 000	200	12 920	71 058	58,14	5,33	30,20	93,67	63,47	120,00	77,52	77,52	171,18	140,99
8 wheel - 5,4 m	125 045	2 000	200	12 504	68 774	56,27	5,16	29,23	90,66	61,43	120,00	75,03	75,03	165,68	136,45
9 wheel - 5,4 m	83 601	2 000	200	8 360	45 981	37,62	3,45	19,54	60,61	41,07	120,00	50,16	50,16	110,77	91,23
9 wheel - 5,5 m	269 140	2 000	200	26 914	148 027	121,11	11,10	62,91	195,13	132,22	120,00	161,48	161,48	356,61	293,70
10 wheel - 5,4 m	317 441	2 000	200	31 744	174 592	142,85	13,09	74,20	230,14	155,94	120,00	190,46	190,46	420,61	346,41
10 wheel - 6,5 m	383 277	2 000	200	38 328	210 803	172,47	15,81	89,59	277,88	188,28	120,00	229,97	229,97	507,84	418,25
10 wheel - 8,3 m	407 940	2 000	200	40 794	224 367	183,57	16,83	95,36	295,76	200,40	120,00	244,76	244,76	540,52	445,16
11 wheel - 8,3 m	351 025	2 000	200	35 102	193 063	157,96	14,48	82,05	254,49	172,44	120,00	210,61	210,61	465,11	383,06
12 wheel - 7,6 m	703 979	2 000	200	70 398	387 188	316,79	29,04	164,56	510,38	345,83	120,00	422,39	422,39	932,77	768,22
12 wheel - 7,8 m	1 068 737	2 000	200	106 874	587 805	480,93	44,09	249,82	774,83	525,02	120,00	641,24	641,24	1 416,08	1 166,26
10.5.2.2 UNIVERSAL TYPE															
3,0 m	46 062	2 000	200	4 606	25 334	20,73	1,90	10,77	33,39	22,63	120,00	27,64	27,64	61,03	50,27
3,2 m	62 810	2 000	200	6 281	34 546	28,26	2,59	14,68	45,54	30,86	120,00	37,69	37,69	83,22	68,54
4,1 m	103 610	2 000	200	10 361	56 986	46,62	4,27	24,22	75,12	50,90	120,00	62,17	62,17	137,28	113,06
4,2 m	89 000	2 000	200	8 900	48 950	40,05	3,67	20,80	64,53	43,72	120,00	53,40	53,40	117,93	97,12
4,5 m	79 000	2 000	200	7 900	43 450	35,55	3,26	18,47	57,28	38,81	120,00	47,40	47,40	104,68	86,21
4,8 m	118 000	2 000	200	11 800	64 900	53,10	4,87	27,58	85,55	57,97	120,00	70,80	70,80	156,35	128,77
5,2 m	93 000	2 000	200	9 300	51 150	41,85	3,84	21,74	67,43	45,69	120,00	55,80	55,80	123,23	101,49
5,8 m	130 331	2 000	200	13 033	71 682	58,65	5,38	30,46	94,49	64,03	120,00	78,20	78,20	172,69	142,22
6,4 m	135 895	2 000	200	13 590	74 742	61,15	5,61	31,77	98,52	66,76	120,00	81,54	81,54	180,06	148,30
6,7 m	142 891	2 000	200	14 289	78 590	64,30	5,89	33,40	103,60	70,20	120,00	85,73	85,73	189,33	155,93
7,1 m	193 525	2 000	200	19 353	106 439	87,09	7,98	45,24	140,31	95,07	120,00	116,12	116,12	256,42	211,18
7,5 m	124 181	2 000	200	12 418	68 300	55,88	5,12	29,03	90,03	61,00	120,00	74,51	74,51	164,54	135,51
7,6 m	329 816	2 000	200	32 982	181 399	148,42	13,60	77,09	239,12	162,02	120,00	197,89	197,89	437,01	359,91
7,7 m	172 652	2 000	200	17 265	94 958	77,69	7,12	40,36	125,17	84,82	120,00	103,59	103,59	228,76	188,41
8,7 m	230 046	2 000	200	23 005	126 525	103,52	9,49	53,77	166,78	113,01	120,00	138,03	138,03	304,81	251,04
10,0 m	264 311	2 000	200	26 431	145 371	118,94	10,90	61,78	191,63	129,84	120,00	158,59	158,59	350,21	288,43
13,0 m	371 402	2 000	200	37 140	204 271	167,13	15,32	86,82	269,27	182,45	120,00	222,84	222,84	492,11	405,29

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

10.6 Hay balers

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
10.6.1 Square balers															
10.6.1.1 SMALL SQUARE BALERS															
Class 3 (360 x460 cm)	219 225	2 000	200	21 923	120 574	98,65	9,04	51,24	158,94	107,69	60,00	65,77	65,77	224,71	173,46
Class 3 (360 x480 cm)	255 000	2 000	200	25 500	140 250	114,75	10,52	59,61	184,88	125,27	60,00	76,50	76,50	261,38	201,77
Class 4 (360 x460 cm)	228 066	2 000	200	22 807	125 437	102,63	9,41	53,31	165,35	112,04	120,00	136,84	136,84	302,19	248,88
Class 4 (360 x490 cm)	279 000	2 000	200	27 900	153 450	125,55	11,51	65,22	202,28	137,06	120,00	167,40	167,40	369,68	304,46
10.6.1.2 BIG SQUARE BALERS															
1 200 x 700 cm	1 568 403	2 000	200	156 840	862 622	705,78	64,70	366,61	1 137,09	770,48	120,00	941,04	941,04	2 078,13	1 711,52
1 200 x 900 cm	2 042 513	2 000	200	204 251	1 123 382	919,13	84,25	477,44	1 480,82	1 003,38	120,00	1 225,51	1 225,51	2 706,33	2 228,89
1 200 x 1 000 cm	2 270 499	2 000	200	227 050	1 248 774	1 021,72	93,66	530,73	1 646,11	1 115,38	120,00	1 362,30	1 362,30	3 008,41	2 477,68
10.6.2 Round balers															
Compact (0,7 m)	91 600	2 000	200	9 160	50 380	41,22	3,78	21,41	66,41	45,00	60,00	27,48	27,48	93,89	72,48
Small (1,2 m)	402 362	2 000	200	40 236	221 299	181,06	16,60	94,05	291,71	197,66	60,00	120,71	120,71	412,42	318,37
Small (wide intake)	367 654	2 000	200	36 765	202 210	165,44	15,17	85,94	266,55	180,61	60,00	110,30	110,30	376,85	290,91
Medium (1,5 m)	425 804	2 000	200	42 580	234 192	191,61	17,56	99,53	308,71	209,18	60,00	127,74	127,74	436,45	336,92
Medium (wide intake)	339 536	2 000	200	33 954	186 745	152,79	14,01	79,37	246,16	166,80	60,00	101,86	101,86	348,02	268,66
Medium (1,6 m)	385 000	2 000	200	38 500	211 750	173,25	15,88	89,99	279,13	189,13	60,00	115,50	115,50	394,63	304,63

10.7 Bale handling equipment

10.7.1 Round balers															
Bale Fork Loader 2,2 m lift - 500 kg	4 725	2 500	250	473	2 599	1,70	0,16	0,88	2,74	1,86	40,00	0,76	0,76	3,50	2,61
Bale Fork Loader 2,7 m lift - 500 kg	10 920	2 500	250	1 092	6 006	3,93	0,36	2,04	6,33	4,29	40,00	1,75	1,75	8,08	6,04
Uniloader with spike - 750 kg	34 650	2 500	250	3 465	19 058	12,47	1,14	6,48	20,10	13,62	40,00	5,54	5,54	25,64	19,16
Uniloader with spike - 1 000 kg	50 610	2 500	250	5 061	27 836	18,22	1,67	9,46	29,35	19,89	40,00	8,10	8,10	37,45	27,99
Uniloader spike, swivel hook, cruciform -1 000 kg	46 410	2 500	250	4 641	25 526	16,71	1,53	8,68	26,92	18,24	40,00	7,43	7,43	34,34	25,66
10.7.2 Bale wrappers															
Trailed round bale wrapper	174 189	2 500	250	17 419	95 804	62,71	5,75	32,57	101,03	68,46	40,00	27,87	27,87	128,90	96,33
10.7.3 Bale shredders															
Round bales	36 209	2 500	250	3 621	19 915	13,04	1,19	6,77	21,00	14,23	40,00	5,79	5,79	26,79	20,02

- Notes**
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 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

11. HARVESTING EQUIPMENT

11.1 Trailed combines

Implement	Purchase price	Life period	Average use per annum	Salvage value	Average investment	Depreciation	Insurance	Interest	Total fixed costs	Total fixed costs excl. interest	Repairs and maint. as a % of new price	Repairs and maint.	Total var. costs	Total costs	Total costs excl. interest
	(R)	(hr)	(hr)	(R)	(R)	(R/hr)	(R/hr)	(R/hr)	(R/hr)	(R/hr)	(R/hr)	(R/hr)	(R/hr)	(R/hr)	(R/hr)
One-row auger	178 782	3 000	300	17 878	98 330	53,63	4,92	27,86	86,41	58,55	45,00	26,82	26,82	113,23	85,37
Two-row auger type (0,9 m)	335 196	3 000	300	33 520	184 358	100,56	9,22	52,23	162,01	109,78	45,00	50,28	50,28	212,29	160,06
Two-row auger type (1,5 m)	454 550	3 000	300	45 455	250 003	136,37	12,50	70,83	219,70	148,87	45,00	68,18	68,18	287,88	217,05
Two-row auger type (2,3 m)	458 100	3 000	300	45 810	251 955	137,43	12,60	71,39	221,42	150,03	45,00	68,72	68,72	290,13	218,74
Three-row auger type (0,9 m)	475 800	3 000	300	47 580	261 690	142,74	13,08	74,15	229,97	155,82	45,00	71,37	71,37	301,34	227,19
Three-row auger type (1,5 m)	491 950	3 000	300	49 195	270 573	147,59	13,53	76,66	237,78	161,11	45,00	73,79	73,79	311,57	234,91
Four-row auger type (0,9 m)	503 400	3 000	300	50 340	276 870	151,02	13,84	78,45	243,31	164,86	45,00	75,51	75,51	318,82	240,37

11.2 Forage harvesters

11.2.1 Precision chop															
11.2.1.1 MOUNTED															
1 row	102 017	2 000	200	10 202	56 109	45,91	4,21	23,85	73,96	50,12	80,00	40,81	40,81	114,77	90,92
2 row	201 200	2 000	200	20 120	110 660	90,54	8,30	47,03	145,87	98,84	80,00	80,48	80,48	226,35	179,32
4 row	461 100	2 000	200	46 110	253 605	207,50	19,02	107,78	334,30	226,52	80,00	184,44	184,44	518,74	410,96
1,1 m	129 029	2 000	200	12 903	70 966	58,06	5,32	30,16	93,55	63,39	80,00	51,61	51,61	145,16	115,00
1,6 m	165 729	2 000	200	16 573	91 151	74,58	6,84	38,74	120,15	81,41	80,00	66,29	66,29	186,45	147,71
11.2.1.2 TRAILED															
2 row	420 737	2 000	200	42 074	231 405	189,33	17,36	98,35	305,03	206,69	80,00	168,29	168,29	473,33	374,98
3 row	588 341	2 000	200	58 834	323 588	264,75	24,27	137,52	426,55	289,02	80,00	235,34	235,34	661,88	524,36
1,7 m	468 873	2 000	200	46 887	257 880	210,99	19,34	109,60	339,93	230,33	80,00	187,55	187,55	527,48	417,88
1,8 m	342 120	2 000	200	34 212	188 166	153,95	14,11	79,97	248,04	168,07	80,00	136,85	136,85	384,89	304,91
2,1 m	450 000	2 000	200	45 000	247 500	202,50	18,56	105,19	326,25	221,06	80,00	180,00	180,00	506,25	401,06
2,2 m	492 756	2 000	200	49 276	271 016	221,74	20,33	115,18	357,25	242,07	80,00	197,10	197,10	554,35	439,17
2,7 m	541 250	2 000	200	54 125	297 688	243,56	22,33	126,52	392,41	265,89	80,00	216,50	216,50	608,91	482,39
2 row	420 737	2 000	200	42 074	231 405	189,33	17,36	98,35	305,03	206,69	80,00	168,29	168,29	473,33	374,98
3 row	588 341	2 000	200	58 834	323 588	264,75	24,27	137,52	426,55	289,02	80,00	235,34	235,34	661,88	524,36
1,7 m	468 873	2 000	200	46 887	257 880	210,99	19,34	109,60	339,93	230,33	80,00	187,55	187,55	527,48	417,88
1,8 m	342 120	2 000	200	34 212	188 166	153,95	14,11	79,97	248,04	168,07	80,00	136,85	136,85	384,89	304,91
2,1 m	450 000	2 000	200	45 000	247 500	202,50	18,56	105,19	326,25	221,06	80,00	180,00	180,00	506,25	401,06
2,2 m	492 756	2 000	200	49 276	271 016	221,74	20,33	115,18	357,25	242,07	80,00	197,10	197,10	554,35	439,17
2,7 m	541 250	2 000	200	54 125	297 688	243,56	22,33	126,52	392,41	265,89	80,00	216,50	216,50	608,91	482,39
11.2.2 Flail type															
Single chop (1,3 m)	65 402	2 000	200	6 540	35 971	29,43	2,70	15,29	47,42	32,13	80,00	26,16	26,16	73,58	58,29
Double chop (1,6 m)	116 680	2 000	200	11 668	64 174	52,51	4,81	27,27	84,59	57,32	80,00	46,67	46,67	131,27	103,99
Double chop (1,8 m)	172 391	2 000	200	17 239	94 815	77,58	7,11	40,30	124,98	84,69	80,00	68,96	68,96	193,94	153,64

11.3 Threshers

Thresher	48 914	2 000	200	4 891	26 903	22,01	2,02	11,43	35,46	24,03	50,00	12,23	12,23	47,69	36,26
With petrol motor	73 562	2 000	200	7 356	40 459	33,10	3,03	17,20	53,33	36,14	50,00	18,39	18,39	71,72	54,53

11.4 Potato lifters

1,5 m	107 277	2 000	200	10 728	59 003	48,28	4,43	25,08	77,78	52,70	60,00	32,18	32,18	109,96	84,88
1,8 m	112 477	2 000	200	11 248	61 862	50,61	4,64	26,29	81,55	55,25	60,00	33,74	33,74	115,29	89,00

- Notes
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/life period in hours
 - 7) Interest cost per hour 8,5% of average investment/life period in hours
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

12. FEED-PROCESSING EQUIPMENT

12.1 Hammermills

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
<i>12.1.1 Electric and PTO driven—electric motor excluded</i>															
Small (PTO)	34 419	3 000	300	3 442	18 930	10,33	0,95	5,36	16,64	11,27	50,00	5,74	5,74	22,37	17,01
Medium (PTO)	42 158	3 000	300	4 216	23 187	12,65	1,16	6,57	20,38	13,81	50,00	7,03	7,03	27,40	20,83
Large (PTO)	56 133	3 000	300	5 613	30 873	16,84	1,54	8,75	27,13	18,38	50,00	9,36	9,36	36,49	27,74
<i>12.1.2 Trailed with intake mechanisms</i>															
Trailed	48 825	3 000	300	4 883	26 854	14,65	1,34	7,61	23,60	15,99	50,00	8,14	8,14	31,74	24,13
Trailed with intake mechanisms	124 829	3 000	300	12 483	68 656	37,45	3,43	19,45	60,33	40,88	50,00	20,80	20,80	81,14	61,69

12.2 Feed mixers

<i>12.2.1 Wagon mixers</i>															
7 cubic m (incl. scale)	394 097	6 000	600	39 410	216 753	59,11	5,42	30,71	95,24	64,53	60,00	39,41	39,41	134,65	103,94
13 cubic m (incl. scale)	593 361	6 000	600	59 336	326 349	89,00	8,16	46,23	143,40	97,16	60,00	59,34	59,34	202,73	156,50
15 cubic m (incl. scale)	649 492	6 000	600	64 949	357 221	97,42	8,93	50,61	156,96	106,35	60,00	64,95	64,95	221,91	171,30
17 cubic m (incl. scale)	743 128	6 000	600	74 313	408 720	111,47	10,22	57,90	179,59	121,69	60,00	74,31	74,31	253,90	196,00
20 cubic m (incl. scale)	934 427	6 000	600	93 443	513 935	140,16	12,85	72,81	225,82	153,01	60,00	93,44	93,44	319,26	246,45
<i>12.2.2 Vertical mixers</i>															
8 cubic m	440 736	6 000	600	44 074	242 405	66,11	6,06	34,34	106,51	72,17	60,00	44,07	44,07	150,58	116,24
10 cubic m	468 230	6 000	600	46 823	257 526	70,23	6,44	36,48	113,16	76,67	60,00	46,82	46,82	159,98	123,50
12 cubic m	493 487	6 000	600	49 349	271 418	74,02	6,79	38,45	119,26	80,81	60,00	49,35	49,35	168,61	130,16

12.3 Rollermillers—motor included

Single set of rollers (3 000 kg maize meal/hour)	138 993	8 000	800	13 899	76 446	15,64	1,43	8,12	25,19	17,07	50,00	8,69	8,69	33,88	25,76
Double set of rollers (500 kg maize meal/hour)	205 059	8 000	800	20 506	112 782	23,07	2,11	11,98	37,17	25,18	50,00	12,82	12,82	49,98	38,00
Double set of rollers (wheat and maize mill) (400 kg maize meal/hour, 3 machines)	942 870	8 000	800	94 287	518 578	106,07	9,72	55,10	170,90	115,80	50,00	58,93	58,93	229,82	174,73

Notes	1) Life period	hours—as per table
	2) Average use per annum	hours/annum—as per table
	3) Salvage value	10% of purchase price
	4) Average investment	= (Purchase price + salvage value)/2
	5) Depreciation cost per hour	= (Purchase price - salvage value)/life period in hours
	6) Insurance cost per hour	1,5% of average investment/hours per annum
	7) Interest cost per hour	8,5% of average investment/hours per annum
	8) Repairs and maintenance cost per hour	% of purchase price/life period in hours—as per table

13. EARTH-MOVING EQUIPMENT

13.1 Front-end loaders

Implement	Purchase price (R)	Life period (hr)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. as a % of new price	Repairs and maint. (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
Front end loader	67 522	2 500	250	6 752	37 137	24,31	2,23	12,63	39,16	26,54	30,00	8,10	8,10	47,27	34,64
Extra heavy duty	82 841	2 500	250	8 284	45 562	29,82	2,73	15,49	48,05	32,56	30,00	9,94	9,94	57,99	42,50

13.2 Rear-mounted graders

2,0 m	29 850	2 500	250	2 985	16 418	10,75	0,99	5,58	17,31	11,73	30,00	3,58	3,58	20,90	15,31
2,5 m	33 706	2 500	250	3 371	18 538	12,13	1,11	6,30	19,55	13,25	30,00	4,04	4,04	23,59	17,29

13.3 Dam scoops

0,75 cubic meters	19 250	2 500	250	1 925	10 588	6,93	0,64	3,60	11,17	7,57	30,00	2,31	2,31	13,48	9,88
1,5 cubic metres	26 150	2 500	250	2 615	14 383	9,41	0,86	4,89	15,17	10,28	30,00	3,14	3,14	18,31	13,41
1,8 cubic metres	78 073	2 500	250	7 807	42 940	28,11	2,58	14,60	45,28	30,68	30,00	9,37	9,37	54,65	40,05
2,5 cubic metres	86 813	2 500	250	8 681	47 747	31,25	2,86	16,23	50,35	34,12	30,00	10,42	10,42	60,77	44,54
3,0 cubic metres	75 075	2 500	250	7 508	41 291	27,03	2,48	14,04	43,54	29,50	30,00	9,01	9,01	52,55	38,51
4,0 cubic metres	111 773	2 500	250	11 177	61 475	40,24	3,69	20,90	64,83	43,93	30,00	13,41	13,41	78,24	57,34
6,0 cubic metres	156 272	2 500	250	15 627	85 949	56,26	5,16	29,22	90,64	61,41	30,00	18,75	18,75	109,39	80,17
9,0 cubic metres	287 133	2 500	250	28 713	157 923	103,37	9,48	53,69	166,54	112,84	30,00	34,46	34,46	200,99	147,30
12,0 cubic metres	402 494	2 500	250	40 249	221 372	144,90	13,28	75,27	233,45	158,18	30,00	48,30	48,30	281,75	206,48

13.4 Rear-mounted post diggers

Unit with 230 mm auger	17 247	2 500	250	1 725	9 486	6,21	0,57	3,23	10,00	6,78	30,00	2,07	2,07	12,07	8,85
Unit with 300 mm auger	18 186	2 500	250	1 819	10 002	6,55	0,60	3,40	10,55	7,15	30,00	2,18	2,18	12,73	9,33
Unit with 450 mm auger	18 502	2 500	250	1 850	10 176	6,66	0,61	3,46	10,73	7,27	30,00	2,22	2,22	12,95	9,49

- Notes**
- 1) Life period hours—as per table
 - 2) Average use per annum hours/annum—as per table
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour % of purchase price/life period in hours—as per table

14. SELF-PROPELLED COMBINE HARVESTERS

14.1a Maize combine harvesters—engines

Engine size (kW)	Average purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance and licence (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repair and maintain. (R/Hr)	Fuel cost (R/hr)	Total variable costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (l/hr)
92	1 412 000	141 200	776 600	317,70	45,30	220,04	583,04	363,00	141,20	219,75	360,95	943,99	723,95	16,56
124	1 293 662	129 366	711 514	291,07	41,50	201,60	534,17	332,58	129,37	296,19	425,55	959,73	758,13	22,32
146	1 200 000	120 000	660 000	270,00	38,50	187,00	495,50	308,50	120,00	348,74	468,74	964,24	777,24	26,28
175	1 350 000	135 000	742 500	303,75	43,31	210,38	557,44	347,06	135,00	418,01	553,01	1 110,44	900,07	31,50
177	2 024 000	202 400	1 113 200	455,40	64,94	315,41	835,74	520,34	202,40	422,78	625,18	1 460,93	1 145,52	31,86
191	2 160 139	216 014	1 188 076	486,03	69,30	336,62	891,96	555,34	216,01	456,22	672,24	1 564,19	1 227,57	34,38
201	1 500 000	150 000	825 000	337,50	48,13	233,75	619,38	385,63	150,00	480,11	630,11	1 249,48	1 015,73	36,18
207	1 721 250	172 125	946 688	387,28	55,22	268,23	710,73	442,50	172,13	494,44	666,57	1 377,30	1 109,07	37,26
212	2 064 852	206 485	1 135 669	464,59	66,25	321,77	852,61	530,84	206,49	506,38	712,87	1 565,48	1 243,71	38,16
216	1 843 600	184 360	1 013 980	414,81	59,15	287,29	761,25	473,96	184,36	515,94	700,30	1 461,55	1 174,26	38,88
227	2 183 500	218 350	1 200 925	491,29	70,05	340,26	901,60	561,34	218,35	542,21	760,56	1 662,17	1 321,90	40,86
268	3 115 800	311 580	1 713 690	701,06	99,97	485,55	1 286,57	801,02	311,58	640,14	951,72	2 238,29	1 752,75	48,24
278	2 856 089	285 609	1 570 849	642,62	91,63	445,07	1 179,33	734,25	285,61	664,03	949,64	2 128,97	1 683,89	50,04
313	3 287 200	328 720	1 807 960	739,62	105,46	512,26	1 357,34	845,08	328,72	747,63	1 076,35	2 433,69	1 921,44	56,34
317	3 113 188	311 319	1 712 253	700,47	99,88	485,14	1 285,49	800,35	311,32	757,19	1 068,50	2 353,99	1 868,85	57,06
350	3 276 003	327 600	1 801 801	737,10	105,11	510,51	1 352,72	842,21	327,60	836,01	1 163,61	2 516,33	2 005,82	63,00
353	3 815 437	381 544	2 098 490	858,47	122,41	594,57	1 575,46	980,89	381,54	843,18	1 224,72	2 800,18	2 205,60	63,54
360	3 780 417	378 042	2 079 229	850,59	121,29	589,11	1 561,00	971,88	378,04	859,90	1 237,94	2 798,93	2 209,82	64,80
390	3 689 906	368 991	2 029 448	830,23	118,38	575,01	1 523,62	948,61	368,99	931,55	1 300,54	2 824,17	2 249,16	70,20
405	3 991 210	399 121	2 195 166	898,02	128,05	621,96	1 648,04	1 026,07	399,12	967,38	1 366,50	3 014,54	2 392,58	72,90

Notes	1) Life	4 000	hours
	2) Average use per annum	300	hours/annum
	3) Salvage value	10,00%	of purchase price
	4) Average investment	= (Purchase price + salvage value)/2	
	5) Depreciation cost per hour	= (Purchase price - salvage value)/life period in hours	
	6) Licence and insurance cost per hour	1,75%	of average investment/hours per annum
	7) Interest cost per hour	8,5%	of average investment/hours per annum
	8) Repairs and maintenance cost per hour	40,00%	of purchase price/life period in hours
	9) Fuel price	13,27	per litre (as at 15/08/2013)
	10) Fuel consumption	60,00%	of kilowatts used
	11) Litres used per kilowatt hour	0,3	litre/kW hour

14.1b Maize combine harvesters—heads

Head size and row size	Average purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance and licence (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repair and maintain. (R/hr)	Total variable costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
3 row 1,5 m snapper	267 650	26 765	147 208	60,22	8,59	41,71	110,52	68,81	26,77	26,77	137,28	95,57
4 row 0,9 m snapper	298 251	29 825	164 038	67,11	9,57	46,48	123,15	76,68	29,83	29,83	152,98	106,50
4 row 0,9 m auger	503 400	50 340	276 870	113,27	16,15	78,45	207,86	129,42	50,34	50,34	258,20	179,76
6 row 0,75 m snapper	435 914	43 591	239 753	98,08	13,99	67,93	180,00	112,07	43,59	43,59	223,59	155,66
6 row 0,9 m snapper	386 516	38 652	212 584	86,97	12,40	60,23	159,60	99,37	38,65	38,65	198,25	138,02
8 row 0,75 m snapper	573 244	57 324	315 284	128,98	18,39	89,33	236,70	147,37	57,32	57,32	294,03	204,70
8 row 0,9 m snapper	515 306	51 531	283 418	115,94	16,53	80,30	212,78	132,48	51,53	51,53	264,31	184,01
12 row 0,9 m snapper	931 850	93 185	512 518	209,67	29,90	145,21	384,78	239,56	93,19	93,19	477,96	332,75

- Notes**
- 1) Life 4 000 hours
 - 2) Average use per annum 300 hours/annum
 - 3) Salvage value 10,00% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Licence and insurance cost per hour 1,75% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour 40,00% of purchase price/life period in hours

The cost of an engine and a suitable head are calculated by selecting the relevant engine costs (14.1a) and adding the relevant head costs (14.1b). There are other examples in the introduction (Table 2).

14.1c Maize combine harvesters—engines and heads

Engine size (kW)	Head size and row	Average purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repair and maintain. (R/hr)	Fuel cost (R/hr)	Total variable costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
92 +		1 412 000	141 200	776 600	317,70	45,30	220,04	583,04	363,00	141,20	219,75	360,95	943,99	723,95	16,56
	3 row 1,5 m snapper	267 650	26 765	147 208	60,22	8,59	41,71	110,52	68,81	26,77		26,77	137,28	95,57	
	Total	1 679 650	167 965	923 808	377,92	53,89	261,75	693,56	431,81	167,97	219,75	387,72	1 081,27	819,53	
175 +		1 350 000	135 000	742 500	303,75	43,31	210,38	557,44	347,06	135,00	418,01	553,01	1 110,44	900,07	31,50
	6 row 0,9 m snapper	386 516	38 652	212 584	86,97	12,40	60,23	159,60	99,37	38,65		38,65	198,25	138,02	
	Total	1 736 516	173 652	955 084	390,72	55,71	270,61	717,04	446,43	173,65	418,01	591,66	1 308,69	1 038,09	
405 +		3 991 210	399 121	2 195 166	898,02	128,05	621,96	1 648,04	1 026,07	399,12	967,38	1 366,50	3 014,54	2 392,58	72,90
	12 row 0,9 m snapper	931 850	93 185	512 518	209,67	29,90	145,21	384,78	239,56	93,19		93,19	477,96	332,75	
	Total	4 923 060	492 306	2 707 683	1 107,69	157,95	767,18	2 032,81	1 265,64	492,31	967,38	1 459,69	3 492,50	2 725,33	

14.2a Wheat combine harvesters—engines

Engine size (kW)	Average purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance and licence (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repair and maintain. (R/hr)	Fuel cost (R/hr)	Total variable costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
124	1 293 662	129 366	711 514	291,07	41,50	201,60	534,17	332,58	129,37	296,19	425,55	959,73	758,13	22,32
146	1 200 000	120 000	660 000	270,00	38,50	187,00	495,50	308,50	120,00	348,74	468,74	964,24	777,24	26,28
175	1 350 000	135 000	742 500	303,75	43,31	210,38	557,44	347,06	135,00	418,01	553,01	1 110,44	900,07	31,50
177	2 024 000	202 400	1 113 200	455,40	64,94	315,41	835,74	520,34	202,40	422,78	625,18	1 460,93	1 145,52	31,86
191	2 160 139	216 014	1 188 076	486,03	69,30	336,62	891,96	555,34	216,01	456,22	672,24	1 564,19	1 227,57	34,38
207	1 721 250	172 125	946 688	387,28	55,22	268,23	710,73	442,50	172,13	494,44	666,57	1 377,30	1 109,07	37,26
212	2 064 852	206 485	1 135 669	464,59	66,25	321,77	852,61	530,84	206,49	506,38	712,87	1 565,48	1 243,71	38,16
216	2 540 455	254 046	1 397 250	571,60	81,51	395,89	1 049,00	653,11	254,05	515,94	769,98	1 818,98	1 423,09	38,88
227	2 779 418	277 942	1 528 680	625,37	89,17	433,13	1 147,67	714,54	277,94	542,21	820,15	1 967,82	1 534,70	40,86
268	2 725 167	272 517	1 498 842	613,16	87,43	424,67	1 125,27	700,59	272,52	640,14	912,66	2 037,93	1 613,26	48,24
278	2 856 089	285 609	1 570 849	642,62	91,63	445,07	1 179,33	734,25	285,61	664,03	949,64	2 128,97	1 683,89	50,04
313	3 287 200	328 720	1 807 960	739,62	105,46	512,26	1 357,34	845,08	328,72	747,63	1 076,35	2 433,69	1 921,44	56,34
317	3 113 188	311 319	1 712 253	700,47	99,88	485,14	1 285,49	800,35	311,32	757,19	1 068,50	2 353,99	1 868,85	57,06
350	3 276 003	327 600	1 801 801	737,10	105,11	510,51	1 352,72	842,21	327,60	836,01	1 163,61	2 516,33	2 005,82	63,00
353	3 815 437	381 544	2 098 490	858,47	122,41	594,57	1 575,46	980,89	381,54	843,18	1 224,72	2 800,18	2 205,60	63,54
360	3 780 417	378 042	2 079 229	850,59	121,29	589,11	1 561,00	971,88	378,04	859,90	1 237,94	2 798,93	2 209,82	64,80
390	3 689 906	368 991	2 029 448	830,23	118,38	575,01	1 523,62	948,61	368,99	931,55	1 300,54	2 824,17	2 249,16	70,20
405	3 991 210	399 121	2 195 166	898,02	128,05	621,96	1 648,04	1 026,07	399,12	967,38	1 366,50	3 014,54	2 392,58	72,90

Notes

- 1) Life 4 000 hours
- 2) Average use per annum 300 hours/annum
- 3) Salvage value 10,00% of purchase price
- 4) Average investment = (Purchase price + salvage value)/2
- 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
- 6) Licence and insurance cost per hour 1,75% of average investment/hours per annum
- 7) Interest cost per hour 8,5% of average investment/hours per annum
- 8) Repairs and maintenance cost per hour 40,00% of purchase price/life period in hours
- 9) Fuel price 13,27 per litre (as at 15/08/2013)
- 10) Fuel consumption 60,00% of kilowatts used
- 11) Litres used per kilowatt hour 0,3 litre/kW hour

14.2b Wheat combine harvesters—heads

Head size	Average purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance and licence (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repair and maintain. (R/hr)	Total variable costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
4,2 m	369 813	36 981	203 397	83,21	11,86	57,63	152,70	95,07	36,98	36,98	189,68	132,05
4,9 m	402 500	40 250	221 375	90,56	12,91	62,72	166,20	103,48	40,25	40,25	206,45	143,73
5,8 m	158 600	15 860	87 230	35,69	5,09	24,72	65,49	40,77	15,86	15,86	81,35	56,63
6,0 m	360 350	36 035	198 193	81,08	11,56	56,15	148,79	92,64	36,04	36,04	184,83	128,67
6,1 m	320 100	32 010	176 055	72,02	10,27	49,88	132,17	82,29	32,01	32,01	164,18	114,30
6,6 m	310 000	31 000	170 500	69,75	9,95	48,31	128,00	79,70	31,00	31,00	159,00	110,70
6,7 m	311 756	31 176	171 466	70,14	10,00	48,58	128,73	80,15	31,18	31,18	159,90	111,32
7,5 m	485 538	48 554	267 046	109,25	15,58	75,66	200,49	124,82	48,55	48,55	249,04	173,38
7,6 m	409 878	40 988	225 433	92,22	13,15	63,87	169,25	105,37	40,99	40,99	210,23	146,36
9,0 m	600 387	60 039	330 213	135,09	19,26	93,56	247,91	154,35	60,04	60,04	307,95	214,39
9,1 m	455 710	45 571	250 640	102,53	14,62	71,01	188,17	117,16	45,57	45,57	233,74	162,73

- Notes**
- 1) Life 4 000 hours
 - 2) Average use per annum 300 hours/annum
 - 3) Salvage value 10,00% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Licence and insurance cost per hour 1,75% of average investment/hours per annum
 - 7) Interest cost per hour 8,5% of average investment/hours per annum
 - 8) Repairs and maintenance cost per hour 40,00% of purchase price/life period in hours

The cost of an engine and a suitable head are calculated by selecting the relevant engine costs (14.2a) and adding the relevant head costs (14.2b). There are other examples in the introduction (Table 3).

14.2c Wheat combine harvesters—engines and heads

Engine size (kW)	Head size	Average purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Licence and insurance (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repair and maintain. (R/hr)	Fuel cost (R/hr)	Total variable costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)	Fuel usage (ℓ/hr)
124 +	4,2 m	1 293 662	129 366	711 514	291,07	41,50	201,60	534,17	332,58	129,37	296,19	425,55	959,73	758,13	22,32
		369 813	36 981	203 397	83,21	11,86	57,63	152,70	95,07	36,98	0,00	36,98	189,68	132,05	
		Total	1 663 475	166 348	914 911	374,28	53,37	259,22	686,88	427,65	166,35	296,19	462,53	1 149,41	
216 +	7,6 m	2 540 455	254 046	1 397 250	571,60	81,51	395,89	1 049,00	653,11	254,05	515,94	769,98	1 818,98	1 423,09	38,88
		409 878	40 988	225 433	92,22	13,15	63,87	169,25	105,37	40,99	0,00	40,99	210,23	146,36	
		Total	2 950 333	295 033	1 622 683	663,82	94,66	459,76	1 218,24	758,48	295,03	515,94	810,97	2 029,21	
278 +	9,1 m	2 856 089	285 609	1 570 849	642,62	91,63	445,07	1 179,33	734,25	285,61	664,03	949,64	2 128,97	1 683,89	50,04
		455 710	45 571	250 640	102,53	14,62	71,01	188,17	117,16	45,57	0,00	45,57	233,74	162,73	
		Total	3 311 799	331 180	1 821 489	745,15	106,25	516,09	1 367,50	851,41	331,18	664,03	995,21	2 362,71	

15. CANE AND TIMBER EQUIPMENT

15.1 Truck trailers (Costs in cents per km)

Description	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (c/km)	Insurance (c/km)	Licence (c/km)	Interest (c/km)	Total fixed costs (c/km)	Total fixed costs excl. interest (c/km)	Repairs and maint. (c/km)	Tyre cost (c/km)	Total variable costs (c/km)	Total costs (c/km)	Total costs excl. interest (c/km)
<i>15.1.1 Cane trailers</i>														
18 ton tandem axle	300 893	75 223	188 058	40,30	4,03	0,41	22,84	67,58	44,74	16,12	86,00	102,12	169,70	146,86
24 ton tri-axle	360 000	90 000	225 000	48,21	4,82	0,41	27,32	80,77	53,45	19,29	124,22	143,51	224,28	196,96
38 ton interlink	559 600	139 900	349 750	74,95	7,49	0,41	42,47	125,33	82,86	29,98	172,00	201,98	327,30	284,83
40 ton rigid four-axle	520 913	130 228	325 571	69,77	6,98	0,41	39,53	116,69	77,16	27,91	162,44	190,35	307,04	267,51
<i>15.1.2 Timber trailers</i>														
18 ton tandem axle	550 000	137 500	343 750	73,66	7,37	0,41	41,74	123,18	81,44	29,46	86,00	115,46	238,65	196,91
24 ton tri-axle	360 000	90 000	225 000	48,21	4,82	0,41	27,32	80,77	53,45	19,29	124,22	143,51	224,28	196,96
38 ton interlink	491 000	122 750	306 875	65,76	6,58	0,41	37,26	110,01	72,75	26,30	172,00	198,30	308,32	271,05
40 ton rigid four-axle	501 250	125 313	313 281	67,13	6,71	0,41	38,04	112,30	74,26	26,85	162,44	189,30	301,60	263,56

- Notes**
- 1) Life: Truck trailers 560 000 kilometres
 - 2) Average use per annum: Truck trailers 70 000 kilometres per annum
 - 3) Salvage value 25,0% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per kilometre = (Purchase price - salvage value)/life period in kilometres
 - 6) Insurance cost per kilometre 1,5% of average investment/kilometres per annum
 - 7) Actual licence cost per kilometre R 290 /kilometres per annum
 - 8) Interest cost per kilometre 8,5% of average investment/kilometres per annum
 - 9) Repairs and maintenance cost per kilometre 30,0% of purchase price/life period in kilometers
 - 10) Tyre cost per kilometre = (Purchase price of new tyre * no. tyres)/tyre life in kilometres [No. tyres = No. wheels]
 - 11) Tyre life: Assumed that a set of tyres lasts 45 000 kilometres
 - 12) It is assumed that 4 sets of tyres are needed

15.2 Tractor trailers with brakes

Description	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (c/km)	Insurance (c/km)	Licence (c/km)	Interest (c/km)	Total fixed costs (c/km)	Total fixed costs excl. interest (c/km)	Repairs and maint. (c/km)	Tyre cost (c/km)	Total variable costs (c/km)	Total costs (c/km)	Total costs excl. interest (c/km)
<i>15.2.1 Cane trailers</i>														
6 ton single box	103 084	25 771	64 428	6,44	0,97	0,29	5,48	13,18	7,70	2,58	0,19	2,77	15,94	10,47
10 ton double box	218 109	54 527	136 318	13,63	2,04	0,29	11,59	27,55	15,97	5,45	0,38	5,83	33,38	21,80
15 ton spiller bar	327 938	81 985	204 961	20,50	3,07	0,29	17,42	41,28	23,86	8,20	0,75	8,95	50,23	32,81
Single stack side loading	90 461	22 615	56 538	5,65	0,85	0,29	4,81	11,60	6,79	2,26	0,19	2,45	14,05	9,24
Single stack rear loading	94 545	23 636	59 091	5,91	0,89	0,29	5,02	12,11	7,09	2,36	0,19	2,55	14,66	9,64
Double stack rear loading	185 625	46 406	116 016	11,60	1,74	0,29	9,86	23,49	13,63	4,64	0,38	5,02	28,51	18,65
<i>15.2.2 Timber trailers</i>														
15.2.2.1 TIP DECK														
15 ton flat deck	334 125	83 531	208 828	20,88	3,13	0,29	17,75	42,06	24,31	8,35	0,40	8,75	50,81	33,06
15 ton pulpwood	321 750	80 438	201 094	20,11	3,02	0,29	17,09	40,51	23,42	8,04	0,40	8,44	48,95	31,86
15.2.2.2 NON-TIP														
15 ton flat deck	420 750	105 188	262 969	26,30	3,94	0,29	22,35	52,88	30,53	10,52	0,90	11,42	64,30	41,95
15 ton sawlog bank type	433 125	108 281	270 703	27,07	4,06	0,29	23,01	54,43	31,42	10,83	0,90	11,73	66,16	43,15

- Notes**
- 1) Life: tractor trailers 12 000 kilometres
 - 2) Average use per annum: Tractor trailers 1 000 kilometres per annum
 - 3) Salvage value 25,0% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per kilometre = (Purchase price - salvage value)/life period in kilometres
 - 6) Insurance cost per kilometre 1,5% of average investment/kilometres per annum
 - 7) Actual licence cost per kilometre R 290 /kilometres per annum
 - 8) Interest cost per kilometre 8,5% of average investment/kilometres per annum
 - 9) Repairs and maintenance cost per kilometre 30,0% of purchase price/life period in kilometres
 - 10) Tyre cost per kilometre = (Purchase price of new tyre * no. tyres)/tyre life in kilometres [no. tyres = no. wheels]
 - 11) Tyre life: Assumed that a set of tyres lasts 45 000 kilometres
 - 12) It is assumed that 4 sets of tyres are needed

15.3 Cane and timber loaders

Description	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (c/km)	Insurance (c/km)	Licence (c/km)	Interest (c/km)	Total fixed costs (c/km)	Total fixed costs excl. interest (c/km)	Repairs and maint. (c/km)	Tyre cost (c/km)	Total variable costs (c/km)	Total costs (c/km)	Total costs excl. interest (c/km)
<i>15.3.1 Cane loaders</i>														
46 kW	645 425	161 356	403 391	40,34	3,03	17,14	60,51	43,36	32,27	92,89	2,08	127,24	187,75	170,61
<i>15.3.2 Timber loaders</i>														
46 kW	658 878	164 720	411 799	41,18	3,09	17,50	61,77	44,27	32,94	92,89	2,08	127,92	189,69	172,19

- Notes**
- 1) Life: Cane loaders 12 000 kilometres
Life: Timber loaders 12 000 kilometres
 - 2) Average use per annum: Cane loaders 2 000 kilometres per annum
Average use per annum: Timber loaders 2 000 kilometres per annum
 - 3) Salvage value 25,0% of purchase price
 - 2) Average investment = (Purchase price + salvage value)/2
 - 3) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 4) Insurance and licence cost per hour 1,5% of average investment/hours per annum
 - 5) Interest cost per hour 8,5% of average investment/hours per annum
 - 6) Repairs and maintenance cost per hour 60,0% of purchase price/life period in hours
 - 7) Fuel price = 13,27 per litre
 - 8) Fuel consumption: 46 kW 7,00 Litres/kilowatt hour
 - 9) Oil price = 29,76 per litre
 - 10) Oil consumption = 1,0% of fuel consumption
 - 11) Tyre cost per hour = (Purchase price of new tyre set * no. tyre sets)/hours per annum
 - 12) It is assumed that 6 sets of tyres are needed

16. TRAILERS

16.1 Two-wheeled trailers

Description	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Licence (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. (R/hr)	Tyre Cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
<i>16.1.1 Flatbed</i>														
3 ton	48 250	2 413	25 331	4,58	0,76	0,40	4,31	10,05	5,74	1,93	0,95	2,88	12,93	8,62
5 ton	52 500	2 625	27 563	4,99	0,83	0,40	4,69	10,90	6,21	2,10	1,74	3,84	14,74	10,05
6 ton	89 550	4 478	47 014	8,51	1,41	0,40	7,99	18,31	10,32	3,58	3,47	7,06	25,37	17,37
8 ton	96 350	4 818	50 584	9,15	1,52	0,40	8,60	19,67	11,07	3,85	3,47	7,33	27,00	18,40
<i>16.1.2 Dropsides</i>														
3 ton	55 400	2 770	29 085	5,26	0,87	0,40	4,94	11,48	6,54	2,22	0,95	3,16	14,64	9,70
5 ton	58 900	2 945	30 923	5,60	0,93	0,40	5,26	12,18	6,92	2,36	1,74	4,09	16,27	11,02
6 ton	99 500	4 975	52 238	9,45	1,57	0,40	8,88	20,30	11,42	3,98	3,47	7,45	27,75	18,87
8 ton	101 700	5 085	53 393	9,66	1,60	0,40	9,08	20,74	11,66	4,07	3,47	7,54	28,28	19,21

16.2 Tip trailers low speed

3 ton—two-wheel	71 450	3 573	37 511	6,79	1,13	0,40	6,38	14,69	8,31	2,86	0,95	3,80	18,49	12,12
5 ton—two-wheel	80 500	4 025	42 263	7,65	1,27	0,40	7,18	16,50	9,32	3,22	1,74	4,96	21,46	14,27
8 ton—four-wheel	132 200	6 610	69 405	12,56	2,08	0,40	11,80	26,84	15,04	5,29	3,47	8,76	35,60	23,80

- Notes**
- 1) Life period 10 000 hours
 - 2) Average use per annum 500 hours
 - 3) Salvage value 5% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Actual licence cost per hour = Actual cost/hours per annum
R 200,00 /hours per annum
 - 8) Interest cost per hour 8,5% of average investment/hours per annum
 - 9) Repairs and maintenance cost per hour 40% of purchase price/life period in hours
 - 10) Tyre cost per hour = (Purchase price of new tyre set * no. tyre sets)/life period in hours
 - 11) It is assumed that 3 sets of tyres are needed

16.3 Four-wheeled trailers

Description	Purchase price (R)	Salvage value (R)	Average investment (R)	Depreciation (R/hr)	Insurance (R/hr)	Licence (R/hr)	Interest (R/hr)	Total fixed costs (R/hr)	Total fixed costs excl. interest (R/hr)	Repairs and maint. (R/hr)	Tyre Cost (R/hr)	Total var. costs (R/hr)	Total costs (R/hr)	Total costs excl. interest (R/hr)
2 ton	38 500	1 925	20 213	3,66	0,61	0,40	3,44	8,10	4,66	1,54	1,98	3,52	11,62	8,18
3 ton	50 600	2 530	26 565	4,81	0,80	0,40	4,52	10,52	6,00	2,02	1,98	4,00	14,52	10,01
6 ton—flatbed	89 550	4 478	47 014	8,51	1,41	0,40	7,99	18,31	10,32	3,58	1,89	5,48	23,79	15,79
6 ton—dropsides	99 500	4 975	52 238	9,45	1,57	0,40	8,88	20,30	11,42	3,98	1,89	5,87	26,17	17,29
8 ton—flatbed	96 350	4 818	50 584	9,15	1,52	0,40	8,60	19,67	11,07	3,85	3,47	7,33	27,00	18,40
8 ton—dropsides	101 700	5 085	53 393	9,66	1,60	0,40	9,08	20,74	11,66	4,07	6,95	11,02	31,76	22,68
10 ton—flatbed	104 150	5 208	54 679	9,89	1,64	0,40	9,30	21,23	11,93	4,17	8,63	12,80	34,03	24,73
10 ton—dropsides	121 000	6 050	63 525	11,50	1,91	0,40	10,80	24,60	13,80	4,84	8,63	13,47	38,07	27,27
15 ton—dropsides	177 400	8 870	93 135	16,85	2,79	0,40	15,83	35,88	20,05	7,10	8,63	15,73	51,61	35,77
Silage feedout wagon—18 cu.m.	249 480	12 474	130 977	23,70	3,93	0,40	22,27	50,30	28,03	9,98	8,63	18,61	68,91	46,64
Silage feedout wagon—30 cu.m.	279 180	13 959	146 570	26,52	4,40	0,40	24,92	56,24	31,32	11,17	8,63	19,80	76,03	51,12

16.4 Drawn fire-fighting water carts without pumps and plumbing

1 000 ℓ	58235	2 912	30 573	5,53	0,92	0,40	5,20	12,05	6,85	2,33	0,91	3,24	15,28	10,08
2 000 ℓ	85322	4 266	44 794	8,11	1,34	0,40	7,61	17,46	9,85	3,41	0,99	4,40	21,87	14,25
3 000 ℓ	115117	5 756	60 436	10,94	1,81	0,40	10,27	23,42	13,15	4,60	3,10	7,71	31,13	20,86
5 000 ℓ	155746	7 787	81 767	14,80	2,45	0,40	13,90	31,55	17,65	6,23	4,32	10,55	42,09	28,19

- Notes**
- 1) Life period 10 000 hours
 - 2) Average use per annum 500 hours
 - 3) Salvage value 5% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours
 - 6) Insurance cost per hour 1,5% of average investment/hours per annum
 - 7) Actual Licence cost per hour = Actual cost/hours per annum
R 200,00 /hours per annum
 - 8) Interest cost per hour 8,5% of average investment/hours per annum
 - 9) Repairs and maintenance cost per hour 40% of purchase price/life period in hours
 - 10) Tyre cost per hour = (Purchase price of new tyre set * no. tyre sets)/life period in hours
 - 11) It is assumed that 3 sets of tyres are needed

17. LDVS

17.1 Two-wheel drive

LDV size (t)	Engine capacity (cc)	Purchase price (R)	Fuel usage (l per 100 km)	Aver investment (R)	Depre-ciation (c/km)	Insurance (c/km)	Licence (c/km)	Interest (c/km)	Total fixed costs (R/km)	Total fixed cost excl. interest (R/km)	Repairs and maint. (c/km)	Fuel (c/km)	Oil (c/km)	Tyres (c/km)	Contin-gency factor (c/km)	Total var. costs (R/km)	Total costs (R/km)	Total costs excl. interest (R/km)	
17.1.1 Petrol—single cab																			
0,5 t	<1 400	121 456	7,90	66 801	68,32	23,05	1,35	28,39	1,21	0,93	37,96	107,05	2,35	6,58	15,39	1,69	2,90	2,62	
0,5 t	<=1 800	113 070	7,90	62 189	63,60	21,46	1,35	26,43	1,13	0,86	35,33	107,05	2,35	6,58	15,13	1,66	2,79	2,53	
1 t	2 000 swb	132 105	10,00	72 658	74,31	25,07	2,38	30,88	1,33	1,02	41,28	135,50	2,98	7,45	18,72	2,06	3,39	3,08	
1 t	2 000 lwb	176 012	10,60	96 806	99,01	33,40	2,38	41,14	1,76	1,35	55,00	143,63	3,15	7,45	20,92	2,30	4,06	3,65	
1 t	<= 2 500 lwb	180 949	11,00	99 522	101,78	34,34	2,38	42,30	1,81	1,38	56,55	149,05	3,27	7,45	21,63	2,38	4,19	3,76	
1 t	<= 3 000 lwb	233 509	14,00	128 430	131,35	44,31	2,38	54,58	2,33	1,78	72,97	189,70	4,17	7,45	27,43	3,02	5,34	4,80	
17.1.2 Diesel—single cab																			
1 t	<= 2 500 swb	212 140	8,00	116 677	119,33	40,25	2,35	49,59	2,12	1,62	66,29	106,16	2,38	7,45	18,23	2,01	4,12	3,62	
1 t	<= 2 500 lwb	205 990	8,00	113 295	115,87	39,09	2,35	48,15	2,05	1,57	64,37	106,16	2,38	7,45	18,04	1,98	4,04	3,56	
1 t	<= 3 000 lwb	271 971	8,00	149 584	152,98	51,61	2,35	63,57	2,71	2,07	84,99	106,16	2,38	7,45	20,10	2,21	4,92	4,28	
17.1.3 Club cab																			
P; 1 t	<= 2500	240 822	14,00	132 452	135,46	45,70	2,35	56,29	2,40	1,84	75,26	189,70	4,17	10,96	28,01	3,08	5,48	4,92	
D; 1 t	<= 2500	255 147	8,00	140 331	143,52	48,41	2,35	59,64	2,54	1,94	79,73	106,16	2,38	10,96	19,92	2,19	4,73	4,13	
D; 1 t	<= 3000	295 951	9,50	162 773	166,47	56,16	2,35	69,18	2,94	2,25	92,48	126,07	2,83	10,96	23,23	2,56	5,50	4,81	
17.1.4 Double cab																			
P; 1 t	<= 2 500	281 596	14,00	154 878	158,40	53,43	2,85	65,82	2,81	2,15	88,00	189,70	4,17	10,96	29,28	3,22	6,03	5,37	
P; 1 t	<= 3 000	293 596	14,00	161 478	165,15	55,71	2,85	68,63	2,92	2,24	91,75	189,70	4,17	10,96	29,66	3,26	6,19	5,50	
P; 1 t	<= 4 000	351 667	14,50	193 417	197,81	66,73	2,85	82,20	3,50	2,67	109,90	196,48	4,32	10,96	32,16	3,54	7,03	6,21	
D; 1 t	<= 2 400	311 637	14,00	171 401	175,30	59,13	2,85	72,85	3,10	2,37	97,39	185,78	4,17	10,96	29,83	3,28	6,38	5,65	
D; 1 t	<= 3 000	338 754	14,00	186 315	190,55	64,28	2,85	79,18	3,37	2,58	105,86	185,78	4,17	10,96	30,68	3,37	6,74	5,95	
D; 1 t	>= 3 000	402 281	14,00	221 255	226,28	76,33	2,85	94,03	3,99	3,05	125,71	185,78	4,17	10,96	32,66	3,59	7,59	6,65	

P = Petrol; D = Diesel; swb = short wheel base; lwb = long wheel base

- Notes:**
- Life period 160 000 kilometres
 - Annual use per annum 20 000 kilometres
 - Salvage value 10% of purchase price
 - Average investment = (Purchase price + salvage value)/2
 - Depreciation cost per kilometre = (Purchase price - salvage value)/life period in C41s
 - Insurance cost per kilometre 6,9% of average investment/kilometres per annum
 - Actual licence cost per kilometre = Actual cost per annum/kilometres per annum
R 270,00 for 0,5 t
R 475,00 for 1 t petrol
R 470,00 for diesel single cab and club cab
R 570,00 for rest of LDVs
 - Interest cost per kilometre 8,5% of average investment/kilometres per annum
 - Repairs and maintenance cost per kilometre 50% of purchase price/life period in kilometres.
 - The price of petrol (95 octane) 1 355 cents/litre
 - The price of diesel 1 327 cents/litre
 - Price of oil 2 976 cents/210 litres 6 249,6 Rand/210 litres
 - Oil consumption 1% of fuel consumption
 - Tyre cost per kilometre = (Purchase price of new tyre * no. tyres)/tyre life in kilometres [no. tyres = no. wheels]
= (Total price of new tyres)/tyre life in kilometres
 - | | | |
|------------------|-------------------|--|
| <u>Tyre size</u> | <u>Tyre price</u> | |
| 165 R 13 | 658,00 | 0,5 t models |
| 195 R 14 | 745,00 | 1,0 t 2-Wheel-drive single-cab models |
| 215 R 15 | 1096,00 | 1,0 t 2-Wheel-drive club-cab and double cab models |
 - Assumption: A set of tyres lasts 50 000 kilometres
 - Contingency factor 10% of the variable costs, i.e. repairs + fuel + oil + tyres

17.2 Four-wheel drive

LDV size (t)	Engine capacity (cc)	Purchase price (R)	Fuel usage (l per 100 km)	Aver investment (R)	Depreciation (c/km)	Insurance (c/km)	Licence (c/Km)	Interest (c/km)	Total fixed costs (R/km)	Total fixed cost excl. interest (R/km)	Repairs and maint. (c/km)	Fuel (c/km)	Oil (c/km)	Tyres (c/km)	Contingency factor (c/km)	Total var. costs (R/km)	Total costs (R/km)	Total costs excl. interest (R/km)
17.2.1 Single cab																		
P; 1 t	<= 2 500	222 784	10,20	122 531	125,32	42,27	2,85	52,08	2,23	1,70	69,62	138,21	3,04	10,96	22,18	2,44	4,67	4,14
D; 1 t	<= 2 500	273 610	8,00	150 485	153,91	51,92	2,85	63,96	2,73	2,09	85,50	106,16	2,38	10,96	20,50	2,26	4,98	4,34
D; 1 t	<= 3 000	314 211	10,20	172 816	176,74	59,62	2,85	73,45	3,13	2,39	98,19	135,35	3,04	10,96	24,75	2,72	5,85	5,12
17.2.2 Club cab																		
D; 1 t	<= 2 500	315 907	8,00	173 749	177,70	59,94	2,85	73,84	3,14	2,40	98,72	106,16	2,38	10,96	21,82	2,40	5,54	4,81
D; 1 t	<= 3 000	343 904	9,50	189 147	193,45	65,26	2,85	80,39	3,42	2,62	107,47	126,07	2,83	13,59	25,00	2,75	6,17	5,36
D; 1 t	>= 3 000	351 880	11,00	193 534	197,93	66,77	2,85	82,25	3,50	2,68	109,96	145,97	3,27	13,59	27,28	3,00	6,50	5,68
17.2.3 Double cab																		
P; 1 t	<= 2 500	343 470	14,00	188 909	193,20	65,17	2,85	80,29	3,42	2,61	107,33	189,70	4,17	13,59	31,48	3,46	6,88	6,07
P; 1 t	<= 3 000	280 409	14,00	154 225	157,73	53,21	2,85	65,55	2,79	2,14	87,63	189,70	4,17	13,59	29,51	3,25	6,04	5,38
P; 1 t	<= 4 000	417 456	14,50	229 601	234,82	79,21	2,85	97,58	4,14	3,17	130,46	196,48	4,32	13,59	34,48	3,79	7,94	6,96
D; 1 t	<= 2 500	306 663	8,00	168 665	172,50	58,19	2,85	71,68	3,05	2,34	95,83	106,16	2,38	13,59	21,80	2,40	5,45	4,73
D; 1 t	>= 3 000	390 842	9,50	214 963	219,85	74,16	2,85	91,36	3,88	2,97	122,14	126,07	2,83	13,59	26,46	2,91	6,79	5,88

P = Petrol; D = Diesel

- Notes:**
- 1) Life period 160 000 kilometres
 - 2) Annual use per annum 20 000 kilometres
 - 3) Salvage value 10% of purchase price
 - 4) Average investment = (Purchase price + salvage value)/2
 - 5) Depreciation cost per kilometre = (Purchase price - salvage value)/life period in kilometres
 - 6) Insurance cost per kilometre 6,9% of average investment/kilometres per annum
 - 7) Actual licence cost per kilometre = Actual cost/kilometres per annum
R 570,00 /kilometres per annum
 - 8) Interest cost per kilometre 8,5% of average investment/kilometres per annum
 - 9) Repairs and maintenance cost per kilometre 50% of purchase price/life period in kilometres
 - 10) The price of petrol (95 octane) 1 355 cents/litre
The price of diesel 1 327 cents/litre
 - 11) Price of oil 2 976 cents/litre 6 249,6 Rand/210 litres
Oil consumption 1% of fuel consumption

18. TRUCKS AND TRUCKS WITH TRAILORS

18.1 Single differential with dropsides

Truck size (ton)	Purchase price (R)	Fuel usage (ℓ per 100 km)	Average investment (R)	Depreciation (c/km)	Insurance (c/km)	Licence (c/km)	Interest (c/km)	Total fixed costs (R/km)	Total fixed cost excl. interest (R/km)	Repairs and maint. (c/km)	Fuel (c/km)	Oil (c/km)	Tyres (c/km)	Contingency factor (c/km)	Total var. costs (R/km)	Total costs (R/km)	Total costs excl. interest (R/km)
3,0 ton	279 140	15,00	153 527	93,05	17,55	4,00	37,29	1,52	1,15	46,52	199,05	6,70	51,66	30,39	3,34	4,86	4,49
4,0 ton	306 120	15,00	168 366	102,04	16,84	5,54	40,89	1,65	1,24	51,02	199,05	6,70	51,66	30,84	3,39	5,05	4,64
6,0 ton (atego)	441 000	25,00	242 550	147,00	16,17	6,21	51,54	2,21	1,69	88,20	331,75	14,88	51,66	48,65	5,35	7,56	7,05
7,0 ton	484 000	28,00	266 200	145,20	15,21	4,83	37,71	2,03	1,65	96,80	371,56	16,67	73,58	55,86	6,14	8,17	7,80
8,0 ton	544 000	30,00	299 200	163,20	19,95	5,52	42,39	2,31	1,89	108,80	398,10	17,86	83,67	60,84	6,69	9,00	8,58

18.2 Double differential with dropsides

14,0 ton (axor)	89 900	40,00	49 445	26,97	2,83	6,63	6,00	0,42	0,36	17,98	530,80	23,81	123,73	69,63	7,66	8,08	8,02
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18.3 Dual axle—horse only

22,0 ton (axor)	1 039 000	46,00	571 450	133,59	32,65	6,43	69,39	2,42	1,73	71,25	610,42	27,38	90,00	79,90	8,79	11,21	10,52
25,0 ton (axor)	1 039 000	48,00	571 450	133,59	32,65	6,43	69,39	2,42	1,73	71,25	636,96	28,57	130,00	86,68	9,53	11,96	11,26
29,0 ton (axor)	1 118 000	50,00	614 900	143,74	35,14	6,43	74,67	2,60	1,85	76,66	663,50	29,76	180,00	94,99	10,45	13,05	12,30

18.4 Single differential with semi-trailer

18,0 ton (axor)	1 215 000	45,00	668 250	156,21	38,19	6,63	81,14	2,82	2,01	83,31	597,15	26,78	123,73	83,10	9,14	11,96	11,15
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18.5 6 x 4 truck tractor with timber trailer

18 ton semi-trailer	1 708 000	45,00	939 400	219,60	53,68	6,43	114,07	3,94	2,80	117,12	597,15	26,78	90,00	83,11	9,14	13,08	11,94
24 ton semi-trailer	1 708 000	47,00	939 400	219,60	53,68	6,43	114,07	3,94	2,80	117,12	623,69	27,97	130,00	89,88	9,89	13,82	12,68
38 ton interlink (actos)	1 937 000	52,00	1 065 350	249,04	60,88	6,43	129,36	4,46	3,16	132,82	690,04	30,95	180,00	103,38	11,37	15,83	14,54

18.6 6 x 4 truck tractor with sugar cane single-spiller trailer

18 ton semi-trailer	1 708 000	47,00	939 400	219,60	53,68	6,43	114,07	3,94	2,80	117,12	623,69	27,97	90,00	85,88	9,45	13,38	12,24
24 ton semi-trailer	1 708 000	47,00	939 400	219,60	53,68	6,43	114,07	3,94	2,80	117,12	623,69	27,97	90,00	85,88	9,45	13,38	12,24
38 ton interlink	1 937 000	52,00	1 065 350	249,04	60,88	6,43	129,36	4,46	3,16	132,82	690,04	30,95	90,00	94,38	10,38	14,84	13,55

Notes

- 1) Life period (kilometres) Groups 18,1 and 18,2 300 000 Groups 18,3 to 18,6 700 000
- 2) Annual use per annum (kilometres) Group 18,1 3,0 and 4,0 t 35 000 Group 18,1 6,0 t 40 000 Group 18,1 7,0 and 8,0 t 60 000 Groups 18,2 to 18,6 70 000
- 3) Salvage value 10,0% of purchase price
- 4) Average investment = (purchase price + salvage value)/S592
- 5) Depreciation cost per kilometre = (purchase price - salvage value)/life period in kilometres
- 6) Insurance cost per kilometre 4,00% of average investment/kilometres per annum
- 7) Actual licence cost per kilometre = Actual cost/kilometres per annum
 Group 18,1 3,0 t 1 400 Group 18,1 7,0 t 2 898 Groups 18,1 and 18,4 4 640
 Group 18,1 4,0 t 1 940 Group 18,1 8,0 t 3 312 Groups 18,3, 18,5 and 18,6 4 500
 Group 18,1 6,0 t 2 482
- 8) Interest cost per hour 8,5% of average investment/kilometres per annum.
- 9) Repairs and maintenance cost per hour 50,0% of purchase price/life period in kilometres for 3 to 5 ton trucks 60,0% of purchase price/life period in kilometres for 6 to 12,5 ton trucks
 48,0% of purchase price/life period in kilometres for all other trucks
- 10) The price of diesel = 1 327 cents/litre
- 11) Fuel cost/km = Fuel consumption * fuel price
- 12) Price of oil = 2 976 cents/litres 6 249,6 Rand/210 litres
- 13) Oil consumption = 1,5% of fuel consumption for the 3-5 ton trucks 2,0% of fuel consumption for all the other trucks
- 14) Tyre cost per kilometre = (purchase price of new tyre * no. tyres)/tyre life in kilometres [No. tyres = no. wheels]
 = (Total price of new tyres)/tyre life in kilometres
- 15) Assumption: A set of tyres lasts 45 000 kilometres
- 16) A contingency factor of 10,0% of the variable costs, i.e. repairs + fuel + oil + tyres

19. ELECTRIC MOTORS

19.1 Electric motors—1,1kW to 4,0 kW—1 000 rpm 6-pole high efficiency

Size (kW)	KVA required	Purchase price (R)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depre- ciation (c/hr)	Interest (c/hr)	Total fixed costs (c/hr)	Tot. fixed costs excl. interest (c/hr)	Repairs and maintain (c/hr)	WTD average electricity cost (c/hr)	WTD total variable costs (c/hr)	WTD AVG total cost (R/hr)	WTD AVG total cost excl. interest (R/hr)
1,10	1,29	3 602	250	360	1 981	16,21	67,36	83,57	16,21	1,80	74,80	76,60	1,60	0,93
1,10	1,29	3 602	500	360	1 981	16,21	33,68	49,89	16,21	1,80	74,80	76,60	1,26	0,93
1,10	1,29	3 602	1 500	360	1 981	16,21	11,23	27,44	16,21	1,80	74,80	76,60	1,04	0,93
1,10	1,29	3 602	2 500	360	1 981	16,21	6,74	22,94	16,21	1,80	74,80	76,60	1,00	0,93
1,50	1,76	4 267	250	427	2 347	19,20	79,79	98,99	19,20	2,13	102,00	104,13	2,03	1,23
1,50	1,76	4 267	500	427	2 347	19,20	39,90	59,10	19,20	2,13	102,00	104,13	1,63	1,23
1,50	1,76	4 267	1 500	427	2 347	19,20	13,30	32,50	19,20	2,13	102,00	104,13	1,37	1,23
1,50	1,76	4 267	2 500	427	2 347	19,20	7,98	27,18	19,20	2,13	102,00	104,13	1,31	1,23
2,20	2,59	5 262	250	526	2 894	23,68	98,40	122,08	23,68	2,63	149,60	152,23	2,74	1,76
2,20	2,59	5 262	500	526	2 894	23,68	49,20	72,88	23,68	2,63	149,60	152,23	2,25	1,76
2,20	2,59	5 262	1 500	526	2 894	23,68	16,40	40,08	23,68	2,63	149,60	152,23	1,92	1,76
2,20	2,59	5 262	2 500	526	2 894	23,68	9,84	33,52	23,68	2,63	149,60	152,23	1,86	1,76
3,00	3,53	6 088	250	609	3 348	27,40	113,85	141,24	27,40	3,04	204,00	207,04	3,48	2,34
3,00	3,53	6 088	500	609	3 348	27,40	56,92	84,32	27,40	3,04	204,00	207,04	2,91	2,34
3,00	3,53	6 088	1 500	609	3 348	27,40	18,97	46,37	27,40	3,04	204,00	207,04	2,53	2,34
3,00	3,53	6 088	2 500	609	3 348	27,40	11,38	38,78	27,40	3,04	204,00	207,04	2,46	2,34
4,00	4,71	7 202	250	720	3 961	32,41	134,68	167,09	32,41	3,60	272,00	275,60	4,43	3,08
4,00	4,71	7 202	500	720	3 961	32,41	67,34	99,75	32,41	3,60	272,00	275,60	3,75	3,08
4,00	4,71	7 202	1 500	720	3 961	32,41	22,45	54,86	32,41	3,60	272,00	275,60	3,30	3,08
4,00	4,71	7 202	2 500	720	3 961	32,41	13,47	45,88	32,41	3,60	272,00	275,60	3,21	3,08

Notes

- 1) Average life 20 000 hours
- 2) Salvage value 10,00% of purchase price
- 3) Average investment = (Purchase price + salvage value)/2
- 4) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours (in cents/hour)
- 5) Interest cost per hour 8,5% of average investment/hours per annum (in cents/hour)
- 6) Repairs and maintenance cost per hour 10,00% of purchase price/life period in hours (in cents/hour)
- 7) KVA needed (power factor) 85,00% of kW size
- 8) Weighted average for land rates 0,8 R/kW hr
- 9) Cost = Size (kW) x KVA needed x weighted average (in Rand/hour)
- 10) Transformer size for land rate 1 25 KVA
Transformer size for land rate 2 50 KVA
Transformer size for land rate 3 100 KVA
- 11) As the required KVA approaches the allotted land rate transformer size, the user is compelled to use a higher capacity transformer.
- 12) Note these costs are only guidelines and each new electrical installation will need its own evaluation.
- 13) Each new connection must be evaluated against the current use of the transformer to be used.

19.2 Electric motors—5,5kW to 18,5 kW—1 000 rpm 6-pole high efficiency

Size (kW)	KVA required	Purchase price (R)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depre- ciation (c/hr)	Interest (c/hr)	Total fixed costs (c/hr)	Tot. fixed costs excl. interest (c/hr)	Repairs and maintain (c/hr)	WTD average electricity cost (c/hr)	WTD total variable costs (c/hr)	WTD AVG total cost (R/hr)	WTD AVG total cost excl. interest (R/hr)
5,5	6,47	9 430	250	943	5 187	42,44	176,34	218,78	42,44	4,72	3,74	3,79	5,97	4,21
5,5	6,47	9 430	500	943	5 187	42,44	88,17	130,61	42,44	4,72	3,74	3,79	5,09	4,21
5,5	6,47	9 430	1 500	943	5 187	42,44	29,39	71,83	42,44	4,72	3,74	3,79	4,51	4,21
5,5	6,47	9 430	2 500	943	5 187	42,44	17,63	60,07	42,44	4,72	3,74	3,79	4,39	4,21
7,5	8,82	11 128	250	1 113	6 120	50,08	208,09	258,17	50,08	5,56	5,10	5,16	7,74	5,66
7,5	8,82	11 128	500	1 113	6 120	50,08	104,05	154,12	50,08	5,56	5,10	5,16	6,70	5,66
7,5	8,82	11 128	1 500	1 113	6 120	50,08	34,68	84,76	50,08	5,56	5,10	5,16	6,00	5,66
7,5	8,82	11 128	2 500	1 113	6 120	50,08	20,81	70,89	50,08	5,56	5,10	5,16	5,86	5,66
11,0	12,94	17 553	250	1 755	9 654	78,99	328,24	407,23	78,99	8,78	7,48	7,57	11,64	8,36
11,0	12,94	17 553	500	1 755	9 654	78,99	164,12	243,11	78,99	8,78	7,48	7,57	10,00	8,36
11,0	12,94	17 553	1 500	1 755	9 654	78,99	54,71	133,70	78,99	8,78	7,48	7,57	8,90	8,36
11,0	12,94	17 553	2 500	1 755	9 654	78,99	32,82	111,81	78,99	8,78	7,48	7,57	8,69	8,36
15,0	17,65	21 056	250	2 106	11 581	94,75	393,75	488,50	94,75	10,53	10,20	10,31	15,19	11,25
15,0	17,65	21 056	500	2 106	11 581	94,75	196,87	291,63	94,75	10,53	10,20	10,31	13,22	11,25
15,0	17,65	21 056	1 500	2 106	11 581	94,75	65,62	160,38	94,75	10,53	10,20	10,31	11,91	11,25
15,0	17,65	21 056	2 500	2 106	11 581	94,75	39,37	134,13	94,75	10,53	10,20	10,31	11,65	11,25
18,5	21,76	26 092	250	2 609	14 351	117,41	487,92	605,33	117,41	13,05	12,58	12,71	18,76	13,88
18,5	21,76	26 092	500	2 609	14 351	117,41	243,96	361,37	117,41	13,05	12,58	12,71	16,32	13,88
18,5	21,76	26 092	1 500	2 609	14 351	117,41	81,32	198,73	117,41	13,05	12,58	12,71	14,70	13,88
18,5	21,76	26 092	2 500	2 609	14 351	117,41	48,79	166,21	117,41	13,05	12,58	12,71	14,37	13,88

Notes

- 1) Average life 20 000 hours
- 2) Salvage value 10,00% of purchase price
- 3) Average investment = (Purchase price + salvage value)/2
- 4) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours (in cents/hour)
- 5) Interest cost per hour 8,5% of average investment/hours per annum (in cents/hour)
- 6) Repairs and maintenance cost per hour 10,00% of purchase price/life period in hours (in cents/hour)
- 7) KVA needed (power factor) 85,00% of kW size
- 8) Weighted average for land rates 0,8 R/kW hr
- 9) Cost = Size (kW) x KVA needed x weighted average (in Rand/hour)
- 10) Transformer size for land rate 1 25 KVA
Transformer size for land rate 2 50 KVA
Transformer size for land rate 3 100 KVA
- 11) As the required KVA approaches the allotted land rate transformer size, the user is compelled to use a higher capacity transformer.
- 12) Note these costs are only guidelines and each new electrical installation will need its own evaluation.
- 13) Each new connection must be evaluated against the current use of the transformer to be used.

19.3 Electric motors—22,0kW to 75,0 kW—1 000 rpm 6-pole high efficiency

Size (kW)	KVA required	Purchase price (R)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depre- ciation (c/hr)	Interest (c/hr)	Total fixed costs (c/hr)	Tot. fixed costs excl. interest (c/hr)	Repairs and maintain (c/hr)	WTD average electricity cost (c/hr)	WTD total variable costs (c/hr)	WTD AVG total cost (R/hr)	WTD AVG total cost excl. interest (R/hr)
22,0	25,88	29 064	250	2 906	15 985	1,31	5,43	6,74	1,31	14,53	14,96	15,11	21,85	16,41
22,0	25,88	29 064	500	2 906	15 985	1,31	2,72	4,03	1,31	14,53	14,96	15,11	19,13	16,41
22,0	25,88	29 064	1 500	2 906	15 985	1,31	0,91	2,21	1,31	14,53	14,96	15,11	17,32	16,41
22,0	25,88	29 064	2 500	2 906	15 985	1,31	0,54	1,85	1,31	14,53	14,96	15,11	16,96	16,41
30,0	35,29	37 703	250	3 770	20 737	1,70	7,05	8,75	1,70	18,85	20,40	20,59	29,34	22,29
30,0	35,29	37 703	500	3 770	20 737	1,70	3,53	5,22	1,70	18,85	20,40	20,59	25,81	22,29
30,0	35,29	37 703	1 500	3 770	20 737	1,70	1,18	2,87	1,70	18,85	20,40	20,59	23,46	22,29
30,0	35,29	37 703	2 500	3 770	20 737	1,70	0,71	2,40	1,70	18,85	20,40	20,59	22,99	22,29
37,0	43,53	48 552	250	4 855	26 704	2,18	9,08	11,26	2,18	24,28	25,16	25,40	36,67	27,59
37,0	43,53	48 552	500	4 855	26 704	2,18	4,54	6,72	2,18	24,28	25,16	25,40	32,13	27,59
37,0	43,53	48 552	1 500	4 855	26 704	2,18	1,51	3,70	2,18	24,28	25,16	25,40	29,10	27,59
37,0	43,53	48 552	2 500	4 855	26 704	2,18	0,91	3,09	2,18	24,28	25,16	25,40	28,50	27,59
45,0	52,94	54 981	250	5 498	30 240	2,47	10,28	12,76	2,47	27,49	30,60	30,87	43,63	33,35
45,0	52,94	54 981	500	5 498	30 240	2,47	5,14	7,61	2,47	27,49	30,60	30,87	38,49	33,35
45,0	52,94	54 981	1 500	5 498	30 240	2,47	1,71	4,19	2,47	27,49	30,60	30,87	35,06	33,35
45,0	52,94	54 981	2 500	5 498	30 240	2,47	1,03	3,50	2,47	27,49	30,60	30,87	34,38	33,35
55,0	64,71	70 762	250	7 076	38 919	3,18	13,23	16,42	3,18	35,38	37,40	37,75	54,17	40,94
55,0	64,71	70 762	500	7 076	38 919	3,18	6,62	9,80	3,18	35,38	37,40	37,75	47,55	40,94
55,0	64,71	70 762	1 500	7 076	38 919	3,18	2,21	5,39	3,18	35,38	37,40	37,75	43,14	40,94
55,0	64,71	70 762	2 500	7 076	38 919	3,18	1,32	4,51	3,18	35,38	37,40	37,75	42,26	40,94
75,0	88,24	84 526	250	8 453	46 489	3,80	15,81	19,61	3,80	42,26	51,00	51,42	71,03	55,23
75,0	88,24	84 526	500	8 453	46 489	3,80	7,90	11,71	3,80	42,26	51,00	51,42	63,13	55,23
75,0	88,24	84 526	1 500	8 453	46 489	3,80	2,63	6,44	3,80	42,26	51,00	51,42	57,86	55,23
75,0	88,24	84 526	2 500	8 453	46 489	3,80	1,58	5,38	3,80	42,26	51,00	51,42	56,81	55,23

Notes

- 1) Average life 20 000 hours
- 2) Salvage value 10,00% of purchase price
- 3) Average investment = (Purchase price + salvage value)/2
- 4) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours (in cents/hour)
- 5) Interest cost per hour 8,5% of average investment/hours per annum (in cents/hour)
- 6) Repairs and maintenance cost per hour 10,00% of purchase price/life period in hours (in cents/hour)
- 7) KVA needed (power factor) 85,00% of kW size
- 8) Weighted average for land rates 0,8 R/kW hr
- 9) Cost = Size (kW) x KVA needed x weighted average (in Rand/hour)
- 10) Transformer size for land rate 1 25 KVA
Transformer size for land rate 2 50 KVA
Transformer size for land rate 3 100 KVA
- 11) As the required KVA approaches the allotted land rate transformer size, the user is compelled to use a higher capacity transformer.
- 12) Note these costs are only guidelines and each new electrical installation will need its own evaluation.
- 13) Each new connection must be evaluated against the current use of the transformer to be used.

19.4 Electric motors—90,0 to 185,0 kW—1 000 rpm 6-pole high efficiency

Size (kW)	KVA required	Purchase price (R)	Average use per annum (hr)	Salvage value (R)	Average investment (R)	Depre- ciation (c/hr)	Interest (c/hr)	Total fixed costs (c/hr)	Tot. fixed costs excl. interest (c/hr)	Repairs and maintain (c/hr)	WTD average electricity cost (c/hr)	WTD total variable costs (c/hr)	WTD AVG total cost (R/hr)	WTD AVG total cost excl. interest (R/hr)
90,0	105,88	97 339	250	9 734	53 536	4,38	18,20	22,58	4,38	48,67	61,20	61,69	84,27	66,07
90,0	105,88	97 339	500	9 734	53 536	4,38	9,10	13,48	4,38	48,67	61,20	61,69	75,17	66,07
90,0	105,88	97 339	1 500	9 734	53 536	4,38	3,03	7,41	4,38	48,67	61,20	61,69	69,10	66,07
90,0	105,88	97 339	2 500	9 734	53 536	4,38	1,82	6,20	4,38	48,67	61,20	61,69	67,89	66,07
110,0	129,41	120 019	250	12 002	66 010	5,40	22,44	27,84	5,40	60,01	74,80	75,40	103,24	80,80
110,0	129,41	120 019	500	12 002	66 010	5,40	11,22	16,62	5,40	60,01	74,80	75,40	92,02	80,80
110,0	129,41	120 019	1 500	12 002	66 010	5,40	3,74	9,14	5,40	60,01	74,80	75,40	84,54	80,80
110,0	129,41	120 019	2 500	12 002	66 010	5,40	2,24	7,65	5,40	60,01	74,80	75,40	83,05	80,80
132,0	155,29	151 021	250	15 102	83 062	6,80	28,24	35,04	6,80	75,51	89,76	90,52	125,55	97,31
132,0	155,29	151 021	500	15 102	83 062	6,80	14,12	20,92	6,80	75,51	89,76	90,52	111,43	97,31
132,0	155,29	151 021	1 500	15 102	83 062	6,80	4,71	11,50	6,80	75,51	89,76	90,52	102,02	97,31
132,0	155,29	151 021	2 500	15 102	83 062	6,80	2,82	9,62	6,80	75,51	89,76	90,52	100,14	97,31
160,0	188,24	169 400	250	16 940	93 170	7,62	31,68	39,30	7,62	84,70	108,80	109,65	148,95	117,27
160,0	188,24	169 400	500	16 940	93 170	7,62	15,84	23,46	7,62	84,70	108,80	109,65	133,11	117,27
160,0	188,24	169 400	1 500	16 940	93 170	7,62	5,28	12,90	7,62	84,70	108,80	109,65	122,55	117,27
160,0	188,24	169 400	2 500	16 940	93 170	7,62	3,17	10,79	7,62	84,70	108,80	109,65	120,44	117,27
185,0	217,65	194 206	250	19 421	106 813	8,74	36,32	45,06	8,74	97,10	125,80	126,77	171,83	135,51
185,0	217,65	194 206	500	19 421	106 813	8,74	18,16	26,90	8,74	97,10	125,80	126,77	153,67	135,51
185,0	217,65	194 206	1 500	19 421	106 813	8,74	6,05	14,79	8,74	97,10	125,80	126,77	141,56	135,51
185,0	217,65	194 206	2 500	19 421	106 813	8,74	3,63	12,37	8,74	97,10	125,80	126,77	139,14	135,51
200,0	235,29	198 019	250	19 802	108 910	8,91	37,03	45,94	8,91	99,01	136,00	136,99	182,93	145,90
200,0	235,29	198 019	500	19 802	108 910	8,91	18,51	27,43	8,91	99,01	136,00	136,99	164,42	145,90
200,0	235,29	198 019	1 500	19 802	108 910	8,91	6,17	15,08	8,91	99,01	136,00	136,99	152,07	145,90
200,0	235,29	198 019	2 500	19 802	108 910	8,91	3,70	12,61	8,91	99,01	136,00	136,99	149,60	145,90

Notes

- 1) Average life 20 000 hours
- 2) Salvage value 10,00% of purchase price
- 3) Average investment = (Purchase price + salvage value)/2
- 4) Depreciation cost per hour = (Purchase price - salvage value)/life period in hours (in cents/hour)
- 5) Interest cost per hour 8,5% of average investment/hours per annum (in cents/hour)
- 6) Repairs and maintenance cost per hour 10,00% of purchase price/life period in hours (in cents/hour)
- 7) KVA needed (power factor) 85,00% of kW size
- 8) Weighted average for land rates 0,8 R/kW hr
- 9) Cost = Size (kW) x KVA needed x weighted average (in Rand/hour)
- 10) Transformer size for land rate 1 25 KVA
Transformer size for land rate 2 50 KVA
Transformer size for land rate 3 100 KVA
- 11) As the required KVA approaches the allotted land rate transformer size, the user is compelled to use a higher capacity transformer.
- 12) Note these costs are only guidelines and each new electrical installation will need its own evaluation.
- 13) Each new connection must be evaluated against the current use of the transformer to be used.

20. FIELD CAPACITIES OF AGRICULTURAL MACHINERY

20.1 Introduction

The field capacity in ha/10-hour day = Speed in km/h x working width in m x N .

Where N = Field Efficiency, which is measured as a decimal. The field efficiency factor allows for time spent on turning on the headlands, refuelling the tractor, filling seed and fertiliser bins on a planter, etc. In the table of field capacities in the next section, average field efficiencies for the different operations are given. In practice, this figure might differ from the actual values, depending on how efficiently the operations are carried out.

Example 1

A single-tine subsoiler is used at a speed of 5 km/hr and at a spacing of 2 m. From field observations it is determined that 17% of the time is spent on turning at the headlands and refuelling the tractor. Determine the field capacity.

$$\begin{aligned}\text{Working speed} &= 5 \text{ km/hr} \\ \text{Working width} &= 2 \text{ m} \\ \text{Field efficiency} &= 100 - 17 = 83\%, \text{ i.e. } 0,83 \text{ as a decimal} \\ \text{Field capacity} &= 5 \times 2 \times 0,83 \\ &= 8,3 \text{ ha/10-hour day}\end{aligned}$$

In the table of field capacities, the column “kW REQUIRED”, gives an indication of the actual power required to carry out the operation at specified field capacity. It should be kept in mind that a naturally aspirated engine working under Highveld conditions can only deliver approximately 80% of its rated power as measured at sea level. A turbo charged engine is assumed not to lose any power with an increase in altitude. Therefore, if the table indicates that 40 kW is required, a tractor with an advertised rated power of $40/0,8 = 50$ kW has to be used. If the tractor is fitted with a turbo charger, a 40 kW turbo-charged tractor would suffice.

At some places in the table of field capacities a recommended tractor size is specified. This is for certain operations where the physical size of the tractor, and not the power of the tractor determines the field capacity for the operation. An example of such an operation is the use of a high speed planter where a smaller tractor is unstable at high speeds although sufficient power is available. The lifting capacity of a three-point hitch may also be a limiting factor in certain operations.

The data in the table of field capacities can be adjusted to suit the specific requirements by interpolation between the work rates for the machines. If for instance, a 55 kW tractor is available and the work rate for ploughing in a sandy soil has to be determined, it can be done as follows:

Available kW at Highveld altitude

$$\begin{aligned}&= 0,8 \times 55 \\ &= 44 \text{ kW}\end{aligned}$$

From the field capacities listed for a mouldboard plough it can be seen that 48 kW is required to plough 10 ha per day.

The field capacity of a 44 kW tractor will be:

$$\begin{aligned}\text{Field capacity (ha/10-hour day)} &= (10 \text{ ha/day} \times 44 \text{ kW}) \div 48 \text{ kW} \\ &= 9,2 \text{ ha/day}\end{aligned}$$

In the table of field capacities, provision has been made for three soil types, namely sandy, sandy-loam and clay-loam. This classification is very broad and the work rates have to be modified for ploughing in the specific soil and comparing these with the listed field capacities. The tabulated figures can then be adjusted for the specific soil type.

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20.2 Table of field capacities

Implement		kW required			Tractor size	Speed (km/hr)	ha/day
1)	FIELD CULTIVATOR 75 mm depth and $N = 83\%$	Sand	Firm soil	Loose soil			
	Width 1,6 m		24	28	30–35	8,0	10,0
	3,0 m		36	43	45–54	8,0	20,0
	3,0 m		45	54	56–68	9,2	23,0
	3,7 m		48	57	60–71	9,0	28,0
	4,5 m		55	64	68–80	10,0	38,0
	6,0 m		70	80	88–100	10,0	50,0
	7,5 m		90	100	113–125	10,0	62,0
	9,0 m		117	120	146–150	10,0	75,0
2)	LIGHT DISC HARROW 65 mm depth and $N = 83\%$	Sand	Firm soil	Loose soil	Tractor size	Speed (km/hr)	ha/day
	Width 1,6 m		24	28	30–35	8,0	10,0
	3,0 m		36	43	45–54	8,0	20,0
	3,0 m		45	54	56–68	9,2	23,0
	3,7 m		48	57	60–71	9,0	28,0
	4,5 m		55	64	68–80	10,0	38,0
	6,0 m		70	80	88–100	10,0	50,0
	7,5 m		90	100	113–125	10,0	62,0
	9,0 m		117	120	146–150	10,0	75,0
3)	HEAVY DISC (OFFSET OR ONE-WAY) 150 mm depth and $N = 83\%$	Sand	Firm soil	Loose soil	Tractor size	Speed (km/hr)	ha/day
	Width 3,0 m		70	85	88–106	8,0	20,0
	3,8 m		85	110	106–138	8,0	25,0
	4,6 m		105	130	131–163	8,0	31,0
	5,5 m		120	160	150–200	9,3	36,0
	6,5 m		150	–	188–250	11,3	43,0
4)	CHISEL PLOUGH 200 mm depth, 300 mm spacing and $N = 83\%$	Sand	Firm soil	Loose soil	Tractor size	Speed (km/hr)	ha/day
	Width 2,2 m	38	48	60	48–75	5,5	10,0
	3,0 m	47	60	74	59–92	5,5	14,0
	3,4 m	60	71	108	75–135	7,0	20,0
	4,0 m	70	82	125	88–156	7,0	23,0
	4,5 m	86	105	150	108–188	7,6	29,0
	4,9 m	93	120	170	116–212	7,6	31,0
	5,4 m	108	140	198	135–248	8,0	36,0
	6,1 m	150	194	274	188–343	9,8	50,0

20.2 Table of field capacities (cont.)

Implement		kW required			Tractor size	Speed (km/hr)	ha/day
5)	RIPPER PLOUGH	Sand	Firm soil	Loose soil			
	380 mm depth, 500 mm spacing and $N = 83\%$						
	2 - t = 1,0 m	40	45	60	50–75	6,5	5,5
	3 - t = 1,5 m	48	60	78	60–98	7,0	9,0
	5 - t = 2,5 m	60	75	100	75–125	6,8	14,0
	7 - t = 3,5 m	70	100	120	88–150	6,8	20,0
	9 - t = 4,5 m	100	130	170	125–212	7,2	28,0
11 - t = 5,5 m	120	150	195	150–244	4,0	33,0	
6)	MOULDBOARD PLOUGH	Sand	Firm soil	Loose soil	Tractor size	Speed (km/hr)	ha/day
	250 mm depth and $N = 83\%$						
	2 x 508 mm = 1,02 m	24	–	–	30	5,0	4,5
	3 x 508 mm = 1,52 m	40	–	–	50	5,8	7,5
	4 x 508 mm = 2,03 m	48	–	–	60	5,9	10,0
	5 x 508 mm = 2,54 m	60	–	–	75	6,1	13,0
	5 x 508 mm = 2,54 m	72	–	–	90	7,3	15,5
	6 x 508 mm = 3,05 m	100	–	–	125	8,1	21,0
	8 x 406 mm = 3,25 m	113	–	–	141	8,2	22,5
	8 x 457 mm = 3,66 m	138	–	–	173	8,8	27,0
	3 x 406 mm = 1,22 m	–	40	–	50	5,0	5,0
	4 x 406 mm = 1,63 m	–	48	–	60	5,0	7,0
	5 x 406 mm = 2,03 m	–	60	–	90	5,5	9,0
	5 x 406 mm = 2,03 m	–	72	–	125	7,0	12,0
	6 x 406 mm = 2,44 m	–	100	–	150	7,9	16,0
	7 x 406 mm = 2,85 m	–	120	–	175	8,0	19,0
	8 x 406 mm = 3,25 m	–	140	–	200	8,2	22,0
	8 x 457 mm = 3,66 m	–	160	–	50	8,2	25,0
	3 x 406 mm = 1,22 m	–	–	40	60	3,3	3,5
	4 x 406 mm = 1,63 m	–	–	48	90	3,6	5,0
	5 x 406 mm = 2,03 m	–	–	63	79	4,2	7,0
	5 x 406 mm = 2,03 m	–	–	73	91	5,6	9,5
	6 x 406 mm = 2,44 m	–	–	100	125	6,6	13,5
	7 x 406 mm = 2,85 m	–	–	143	179	7,8	18,5
	8 x 406 mm = 3,25 m	–	–	163	204	7,9	21,0
	8 x 457 mm = 3,66 m	–	–	200	250	6,6	26,0

20.2 Table of field capacities (cont.)

Implement		kW required	Tractor size	Speed (km/hr)	ha/day
7)	HEAVY SPIKE-TOOTH HARROW	Sandy loam			
	150 mm depth and <i>N</i> = 83%				
	5-section = 5,5 m	30	38	8,7	40,0
	8-section = 7,3 m	45	56	9,0	55,0
	12-section = 11,0 m	65	81	9,3	85,0
	16-section = 14,6 m	95	120	9,9	120,0
8)	CULTIVATOR	Firm soil			
	<i>N</i> = 83%		Tractor size	Speed (km/hr)	ha/day
	4 x 0,91 m = 3,64 m	17	25	4,0	12,0
	4 x 0,91 m = 3,64 m	26	35	6,0	18,0
	4 x 0,91 m = 3,64 m	34	50	8,0	24,0
	4 x 0,91 m = 3,64 m	43	55	10,0	30,0
	6 x 0,91 m = 5,45 m	26	40	4,0	18,0
	6 x 0,91 m = 5,45 m	39	50	6,0	27,0
	6 x 0,91 m = 5,45 m	52	65	8,0	36,0
	6 x 0,91 m = 5,45 m	65	80	10,0	45,0
	8 x 0,91 m = 7,28 m	34	60	4,0	24,0
	8 x 0,91 m = 7,28 m	52	70	6,0	36,0
	8 x 0,91 m = 7,28 m	69	85	8,0	48,0
	8 x 0,91 m = 7,28 m	86	100	10,0	60,0
	2 x 2,29 m = 4,58 m	22	35	4,0	15,0
	2 x 2,29 m = 4,58 m	33	50	6,0	23,0
	2 x 2,29 m = 4,58 m	43	60	8,0	30,0
	2 x 2,29 m = 4,58 m	54	70	10,0	38,0
	3 x 2,29 m = 6,87 m	33	50	4,0	23,0
	3 x 2,29 m = 6,87 m	49	60	6,0	34,0
	3 x 2,29 m = 6,87 m	65	80	8,0	45,0
	3 x 2,29 m = 6,87 m	82	100	10,0	57,0
	4 x 2,29 m = 9,16 m	43	80	4,0	30,0
4 x 2,29 m = 9,16 m	65	100	6,0	45,0	
4 x 2,29 m = 9,16 m	88	110	8,0	61,0	
4 x 2,29 m = 9,16 m	109	120	10,0	76,0	

20.2 Table of field capacities (cont.)

Implement		kW required	Tractor size	Speed (km/hr)	ha/day
9)	SPREADER (LIME OR FERTILISER)				
	<i>N = 60%</i>				
	Width 3 m	15	30	8,0	14,0
	4 m	18	30	8,0	19,0
	6 m	24	40	8,0	29,0
	8 m	27	50	8,0	38,0
	10 m	34	75	8,0	48,0
	12 m	42	75	8,0	58,0
	14 m	47	90	8,0	67,0
	16 m	54	110	8,0	77,0
	18 m	60	130	8,0	86,0
10)	BOOM SPRAYER				
	<i>N = 60%</i>				
		Sandy loam	Tractor size	Speed (km/hr)	ha/day
	Band 4 x 0,91 m	15	30	6,0	13,0
	6 x 0,91 m	15	30	6,0	30,0
	8 x 0,91 m	15	30	6,0	26,0
	2 x 2,29 m	15	30	6,0	16,5
	3 x 2,29 m	15	30	6,0	25,0
	4 x 2,29 m	20	40	6,0	33,0
	6 m boom	20	40	6,0	22,0
8 m boom	25	50	6,0	29,0	
12 m boom	25	50	6,0	43,0	

20.2 Table of field capacities (cont.)

Implement	kW required			Tractor size	Speed (km/hr)	ha/day
	Sand	Firm soil	Loose soil			
11) MAIZE PLANTER						
Starter fertiliser and N = 70%						
2 x 0,91 m = 1,82 m (*M)	21	20	19	35	8,0	9,0
2 x 0,91 m = 1,82 m (*M)	25	23	22	35	12,0	13,0
4 x 0,91 m = 3,64 m (*M)	25	23	22	40	6,0	13,0
4 x 0,91 m = 3,64 m (*M)	33	40	29	40	8,0	18,0
4 x 0,91 m = 3,64 m (*M)	43	39	37	50	10,0	22,0
4 x 0,91 m = 3,64 m (**T)	50	46	44	55	12,0	26,0
6 x 0,91 m = 5,46 m (*M)	38	34	33	50	6,0	20,0
6 x 0,91 m = 5,46 m (**T)	50	46	44	60	8,0	26,0
6 x 0,91 m = 5,46 m (**T)	60	56	54	70	10,0	33,0
6 x 0,91 m = 5,46 m (**T)	74	68	65	75	12,0	39,0
8 x 0,91 m = 7,28 m (**T)	49	45	43	70	6,0	26,0
8 x 0,91 m = 7,28 m (**T)	66	60	58	80	8,0	35,0
8 x 0,91 m = 7,28 m (**T)	83	76	73	90	10,0	44,0
8 x 0,91 m = 7,28 m (**T)	98	90	86	100	12,0	52,0
12 x 0,91 m = 10,92 m (**T)	75	68	65	90	6,0	39,0
12 x 0,91 m = 10,92 m (**T)	98	90	86	100	8,0	52,0
12 x 0,91 m = 10,92 m (**T)	120	110	105	120	10,0	65,0
12 x 0,91 m = 10,92 m (**T)	142	130	125	150	12,0	78,0
2 x 2,29 m = 4,58 m (*M)	15	15	14	35	6,0	19,0
2 x 2,29 m = 4,58 m (*M)	21	20	19	45	8,0	25,0
2 x 2,29 m = 4,58 m (*M)	25	24	23	55	10,0	32,0
2 x 2,29 m = 4,58 m (*M)	30	28	27	55	12,0	38,0
3 x 2,29 m = 5,87 m (*M)	24	23	22	50	6,0	29,0
3 x 2,29 m = 5,87 m (**T)	30	28	27	55	8,0	38,0
3 x 2,29 m = 5,87 m (**T)	37	36	34	60	10,0	48,0
3 x 2,29 m = 5,87 m (**T)	44	42	40	70	12,0	58,0
4 x 2,29 m = 9,16 m (**T)	30	28	27	80	6,0	38,0
4 x 2,29 m = 9,16 m (**T)	40	38	36	80	8,0	51,0
4 x 2,29 m = 9,16 m (**T)	50	48	45	90	10,0	64,0
4 x 2,29 m = 9,16 m (**T)	59	58	54	100	12,0	77,0

Note: *M = Mounted

**T = Trailed

20.2 Table of field capacities (cont.)

Implement		kW required			Tractor size	Speed (km/hr)	ha/day
11)	MAIZE PLANTER (cont) Full fertiliser and N = 60%	Sand	Firm soil	Loose soil			
		2 x 0,91 m = 1,82 m (*M)	21	20			
2 x 0,91 m = 1,82 m (*M)	25	23	22	35	12,0	15,0	
4 x 0,91 m = 3,64 m (*M)	22	21	20	35	6,0	15,0	
4 x 0,91 m = 3,64 m (*M)	25	24	23	35	8,0	20,0	
4 x 0,91 m = 3,64 m (*M)	27	26	25	45	10,0	25,0	
4 x 0,91 m = 3,64 m (**T)	33	31	30	50	12,0	30,0	
6 x 0,91 m = 5,46 m (*M)	26	25	24	45	6,0	23,0	
6 x 0,91 m = 5,46 m (**T)	33	31	30	55	8,0	30,0	
6 x 0,91 m = 5,46 m (**T)	42	40	38	60	10,0	38,0	
6 x 0,91 m = 5,46 m (**T)	50	48	46	70	12,0	46,0	
8 x 0,91 m = 7,28 m (**T)	35	34	32	65	6,0	31,0	
8 x 0,91 m = 7,28 m (**T)	44	42	40	70	8,0	41,0	
8 x 0,91 m = 7,28 m (**T)	55	53	50	80	10,0	51,0	
8 x 0,91 m = 7,28 m (**T)	66	64	60	90	12,0	61,0	
12 x 0,91 m = 10,92 m (**T)	51	48	46	80	6,0	46,0	
12 x 0,91 m = 10,92 m (**T)	68	65	62	90	8,0	61,0	
12 x 0,91 m = 10,92 m (**T)	83	80	76	100	10,0	76,0	
12 x 0,91 m = 10,92 m (**T)	100	98	92	110	12,0	92,0	
2 x 2,29 m = 4,58 m (*M)	18	17	16	40	6,0	16,5	
2 x 2,29 m = 4,58 m (*M)	24	22	21	50	8,0	22,0	
2 x 2,29 m = 4,58 m (*M)	29	27	26	55	10,0	27,0	
2 x 2,29 m = 4,58 m (*M)	36	33	32	55	12,0	33,0	
3 x 2,29 m = 5,87 m (*M)	27	25	24	55	6,0	25,0	
3 x 2,29 m = 5,87 m (**T)	36	33	32	60	8,0	33,0	
3 x 2,29 m = 5,87 m (**T)	46	42	40	70	10,0	41,0	
3 x 2,29 m = 5,87 m (**T)	55	50	48	75	12,0	49,0	
4 x 2,29 m = 9,16 m (**T)	36	33	32	90	6,0	33,0	
4 x 2,29 m = 9,16 m (**T)	49	45	43	90	8,0	44,0	
4 x 2,29 m = 9,16 m (**T)	60	55	53	100	10,0	55,0	
4 x 2,29 m = 9,16 m (**T)	74	68	65	110	12,0	66,0	

Note: *M = Mounted

**T = Trailed

20.2 Table of field capacities (cont.)

Implement		kW required		Tractor size	Speed (km/hr)	ha/day			
12) WHEAT DRILL 350 mm rows and <i>N</i> = 60%	Firm soil								
	7-row = 2,45 m	15	40	7,0	10,0				
	9-row = 3,15 m	20	45	7,0	13,0				
	14-row = 4,90 m	39	70	9,0	26,0				
	18-row = 6,30 m	51	80	9,0	34,0				
	21-row = 7,35 m	60	90	9,0	40,0				
	27-row = 9,45 m	76	100	9,0	51,0				
Implement		kW required	Tractor size	ha/day at a yield of					
				2 t/ha	3 t/ha	4 t/ha	5 t/ha	6 t/ha	
13) TRAILED COMBINE FOR MAIZE with unloading wagon and <i>N</i> = 80%				12	8	6	5	4	
	1-row	38	48	14	10	7	6	5	
	2 x 0,91 m	42	53						
	without unloading wagon and <i>N</i> = 65%								
	1-row	38	48	10	7	5	4	3	
	2 x 0,91 m	42	53	12	8	6	5	4	
14) SELF-PROPELLED COMBINE FOR MAIZE with unloading wagon and <i>N</i> = 80%			kW required	ha/day at a yield of					
				2 t/ha	3 t/ha	4 t/ha	5 t/ha	6 t/ha	
	4 x 0,91 m = 3,64 m	38	24	16	12	10	8		
	4 x 0,91 m = 3,64 m	48	38	26	19	15	13		
	6 x 0,91 m = 5,46 m	68	58	38	29	23	19		
	6 x 0,91 m = 5,46 m	95	80	54	40	32	26		
	2 x 2,29 m = 4,58 m	38	24	16	12	-	-		
	2 x 2,29 m = 4,58 m	48	38	26	19	-	-		
	3 x 2,29 m = 6,87 m	68	58	38	29	-	-		
	3 x 2,29 m = 6,87 m	95	80	54	40	-	-		

20.2 Table of field capacities (cont.)

Implement	kW required	ha/day at a yield of				
		2 t/ha	3 t/ha	4 t/ha	5 t/ha	6 t/ha
14) SELF-PROPELLED COMBINE FOR MAIZE						
without unloading wagon and <i>N</i> = 65%						
4 x 0,91 m = 3,64 m	38	20	13	10	8	7
4 x 0,91 m = 3,64 m	48	31	21	16	12	10
6 x 0,91 m = 5,46 m	68	47	31	23	19	16
6 x 0,91 m = 5,46 m	95	65	44	33	26	21
2 x 2,29 m = 4,58 m	38	20	13	10	-	-
2 x 2,29 m = 4,58 m	48	31	21	16	-	-
3 x 2,29 m = 6,87 m	68	47	31	23	-	-
3 x 2,29 m = 6,87 m	95	65	44	33	-	-
15) SELF-PROPELLED COMBINE FOR WHEAT						
with unloading wagon and <i>N</i> = 80%						
2,70 m	38		34	17	11	9
3,66 m	48		48	24	16	12
4,57 m	68		77	38	26	19
6,71 m	95		115	58	38	29
without unloading wagon and <i>N</i> = 65%						
2,70 m	38		27	14	9	7
3,66 m	48		39	20	13	10
4,57 m	68		62	31	21	16
6,71 m	95		94	47	31	25

20.2 Table of field capacities (cont.)

Implement		kW Required	Tractor size	Speed (km/hr)	ha/day				
16)	CUTTER-BAR MOWER <i>N</i> = 80% 1,8 m knife	10	35		9,0				
17)	DISC MOWER <i>N</i> = 80%								
	1,6 m	30	38		10,0				
	1,8 m	30	38		12,0				
	2,0 m	35	44		13,0				
	2,4 m	46	58		15,0				
	2,8 m	46	58		18,0				
Implement		kW required	Tractor size	ha/day at a yield of					
				1 t/ha	1,5 t/ha	2 t/ha	2,5 t/ha	3 t/ha	3,5 t/ha
18)	PICK-UP BALER Hay and <i>N</i> = 50%	35	44	25	17	13	10	8	7
19)	ROUND BALER Hay and <i>N</i> = 50%								
	Small	45	56	30	20	15	12	10	8
	Medium	48	6	40	27	20	16	13	11
	Large	52	65	45	30	23	18	15	13
20)	HAY RAKE <i>N</i> = 80%	kW required	Tractor size	Brittle crops (ha/day)		Other crops (ha/day)			
	2,0 m	16	35	11		15			
	2,4 m	18	35	13		18			
	3,0 m	20	35	17		23			
	6,0 m	26	35	33		46			

21) TRANSPORT

No measurements have been made of the required power.

For a tractor and trailer the following can be used to calculate approximate fuel consumption:

Terrain	Fuel consumption/litre per ton-km
Flat	0,05
Undulating	0,10
Hilly	0,15

