



SOUTH AFRICAN SUGARCANE
RESEARCH INSTITUTE

MECHANISATION REPORT No. 2 2018



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South African Sugarcane Research Institute is a division of the South African Sugar Association



MECHANISATION REPORT NO. 2

SYSTEMS AND COSTS OF LAND PREPARATION, PLANTING AND RATOON MANAGEMENT

The costs given in the following tables are based on replanting 20 hectares per year and using new equipment with 60 kW 2WD tractor costs based on an annual usage of 1000 hours. Expensive implements are under-utilised and this results in high implement costs. The larger the area to replant, the greater the utilisation of the implement and hence its cost per unit of area will be reduced. The examples merely serve as a guide and growers should carefully compare the operations included and adjust these to suit their systems, if necessary. Growers are referred to the table on the last page for costs of individual operations.

LAND PREPARATION

Operations involving land smoothing, drainage and conservation structures are considered to be part of soil and water conservation and will therefore not be considered in this exercise on land preparation.

The main objectives in land preparation are assumed to be:

- to effectively destroy the old crop
- to prepare a seedbed for planting.

The two categories of soil to be considered in this exercise are:

- i) heavier soils (loams and clays)
- ii) lighter soils (loamy sands and sands).

The operations listed in the tables that follow may be considered to be the basic minimum, the number of harrowings for example being dependent on factors such as the presence or absence of grass weeds, soil moisture content, season of operation and volunteers.

1. Traditional system:

TRADITIONAL SYSTEM:	FUEL:	COST:
Operations:	(l/ha)	(R/ha)
Deep plough (2f rev disc)	30	985
Disc Harrow	16	554
Plough (2f rev disc)	30	985
Disc Harrow	16	554
Disc Harrow	16	554
Ridger only	10	583
TOTAL:	118	4215

2. Conventional tillage system (heavier soils):

<u>CONVENTIONAL SYSTEM: (HEAVY SOILS)</u>	FUEL:	COST:
Operations:	(l/ha)	(R/ha)
Shallow (100mm) 2f m/b 1way (May)	20	851
Disc harrow (June)	16	554
Plough (200-250mm) 2f m/b 1way (Aug)	25	952
Disc harrow (150mm) (Aug)	16	554
Ridger only	10	583
TOTAL:	87	3494

3. Conventional tillage system (sandy soils):

<u>CONVENTIONAL SYSTEM: (LIGHT SOILS)</u>	FUEL:	COST:
Operations:	(l/ha)	(R/ha)
Shallow (100mm) rotary hoe (May)	25	1153
Disc harrow (100mm) (June)	8	378
Disc harrow (100mm) (Aug)	8	378
Ridger only	10	583
TOTAL:	51	2492

4. Minimum tillage system, chemical (heavier soils) - Option 1:

<u>MINIMUM TILLAGE SYSTEM (SANDY SOILS)</u>	FUEL:	COST:
Operations:	(l/ha)	(R/ha)
Full cover spray Glyphosate 360gm/l @ 8l/ha (1 labour-day)	0	146
from Oct to Mar onwards (8l/ha)	0	477
Min tiller (2r rotary hoe+ridgers+fert appl in interrow (Oct-Mar)	15	1213
TOTAL:	15	1836
Add stool plough- improved efficacy	12	502

Note: The efficacy of chemical stool eradication in heavier soils is improved if the stools are undercut (± 100 mm) by using a stool plough one week after spraying. This will increase the costs as indicated in the table above.

5. **No-tillage system, chemical (sandy soils):**

<u>NO TILLAGE SYSTEM (SANDY SOILS)</u>	FUEL:	COST:
Operations:	(l/ha)	(R/ha)
Full cover spray Glyphosate (1 labour-day)	0	146
from Oct to Mar onwards @ 8l/ha	0	477
Ridger only	10	583
TOTAL:	10	1206

6. **Reduced tillage system, manual (sandy soils) – Option 2:**

<u>REDUCED TILLAGE SYSTEM - MANUAL (SANDY SOILS)</u>	FUEL:	Mech Cost:	Labour-days	Labour	Operation
Operations:	(l/ha)	(R/ha)	per ha	cost (R/ha)	cost (R/ha)
Chipping (May) @ 40 labour days/ha	0	0	40	5850	5850
Ridger only	10	583	0	0	583
TOTAL:	10	583	40	5850	6433

Note: Irrespective of the system of crop eradication used, the cost of hand labour for roging must be added to the above costs.

PLANTING

In comparing the various planting methods, the following assumptions are made:

flat culture is desirable;

some fertiliser is required in the planting furrow;

plant cane warrants one pre- and one post-emergent application of herbicide for weed control;

the cost of materials is the same for all systems and is excluded from these comparisons;

one labourer costs **R146.25 per day** (9 hours);

Glyphosate (360 g/l) costs **R59.60 per litre** (assumed retail price)

1. Machine planting

<u>MACHINE PLANTING</u>	Fuel (l/ha)	Mech Cost: (R/ha)	Labour-days per ha	Labour cost (R/ha)	Operation cost (R/ha)
Machine planting (at 1ha/day)	22	2210	10	1463	3673
Pre-emergent herbicide	3	140	1	146	286
Top dress fertilizer	3	167	1	146	313
Post-emergent herbicide	3	140	1	146	286
Hand-hoeing grasses	0	0	10	1463	1463
Spot spray	0	0	1	146	146
TOTAL:	31	2657	24	3510	6167

* This value can range typically from 6 to 10 labour days per hectare depending on labour productivity.

2. Semi-mechanical planting

<u>SEMI MECHANICAL PLANTING</u>	Fuel (l/ha)	Mech Cost: (R/ha)	Labour-days per ha	Labour cost (R/ha)	Operation cost (R/ha)
Ridging and Fert applic (2 row)	12	406	1	146	552
Planting	0	0	20	2925	2925
Covering	12	650	0	0	650
Pre-emergent herbicide	3	140	1	146	286
Top dress fertiliser	3	167	1	146	313
Post-emergent herbicide	3	140	1	146	286
Hand-hoe	0	0	10	1463	1463
Spot spray	0	0	1	146	146
TOTAL:	33	1503	35	5119	6622

3. Manual planting

<u>MANUAL PLANTING</u>	Fuel (l/ha)	Mech Cost: (R/ha)	Labour-days per ha	Labour cost (R/ha)	Operation cost (R/ha)
Ridging only	10	583	0	0	583
Fertiliser application	0	0	1	146	146
Planting	0	0	20	2925	2925
Covering	0	0	5	731	731
Pre-emergent herbicide	0	0	1	146	146
Top dress fertiliser	0	0	1	146	146
Post-emergent herbicide	0	0	1	146	146
Hand-hoe	0	0	10	1463	1463
Spot spray	0	0	1	146	146
TOTAL:	10	583	40	5850	6433

Operations such as the application of nematicides and filtercake and seed-dipping, are excluded as they are specific to soil types and season. Costs of materials were excluded in the planting costs.

RATOON MANAGEMENT

Within the industry there are three common situations which require different management.

Relatively few operations are required in the management of ratoon crops but weed control is the most difficult to cost as there is no best procedure. The type and number of operations depends on factors such as time of harvest, soil type and the spectrum and density of weeds that occur.

Operations such as subsoiling, stool pruning, furrow-forming and nematicide application are not included as they are not generally necessary.

1. Cane burnt and tops windrowed

<u>CANE BURNT & TOPS WINDROWED</u>	Fuel (l/ha)	Mech Cost: (R/ha)	Labour-days per ha	Labour cost (R/ha)	Operation cost (R/ha)
Raking tops	4	181	0	0	181
Topdress fertiliser	3	167	1	146	313
Post-emergent herbicide (long term)	3	140	1	146	286
Hand weed	0	0	10	1463	1463
TOTAL:	10	488	12	1755	2243

2. Cane burnt and tops left scattered

<u>CANE BURNT & TOPS LEFT SCATTERED</u>	Fuel (l/ha)	Mech Cost: (R/ha)	Labour-days per ha	Labour cost (R/ha)	Operation cost (R/ha)
Spread tops and clean up	0	0	3	439	439
Topdress fertiliser	3	167	1	146	313
Post-emergent herbicide (long term)	3	140	1	146	286
Hand weed	0	0	8	1170	1170
TOTAL:	6	307	13	1901	2208

3. Trash blanket

<u>TRASH BLANKET</u>	Fuel (l/ha)	Mech Cost: (R/ha)	Labour-days per ha	Labour cost (R/ha)	Operation cost (R/ha)
Spread trash & tidy field	0	0	3	439	439
Topdress fertiliser	0	0	1	146	146
Spot spray, twice	0	0	2	293	293
Hand weed	0	0	4	585	585
TOTAL:	0	0	10	1463	1463

For all systems:

- material costs are excluded
- add verge control:

Assume 10% of total area will be slashed 4 times annually i.e) 10% of 200 ha = 20 ha

Cost per slashing = R461 per ha x 20 ha = R 9217

Cost for slashing = R 9217 x 4 = R 36866

Cost per hectare under cane = R 36866 ÷ 200 ha = R 184.33 /ha

PERFORMANCE STANDARDS AND COSTS FOR MECHANICAL SUGARCANE PRODUCTION SYSTEMS:200HA CANE FARM REPLANTING 20HA/YR

Costs are based on a 60 kW tractor: **R 228.03**/hour + implement cost NB: The operational costs per hectare shown below are for 1 pass only; For steep or poorly laid out fields these figures below must be inflated

Machinery and equipment	Cost price (Rand)	Working width (m)	Efficiency (%)	No. of passes (no.)	Lighter soils						Heavier soils					
					Speed (km/h)	Work-rate (h/ha)	Annual utilisation (hours)	Implement cost (R/h)	Operation cost (R/ha)	Fuel (l/ha)	Speed (km/h)	Work-rate (h/ha)	Annual utilisation (hours)	Implement cost (R/h)	Operation cost (R/ha)	Fuel (l/ha)
Subsoil: single tine	22000	1.2	90	1	4.0	2.31	46	60.67	668	15	3.0	3.09	62	46.44	847	20
Ripper : 3 tine	45000	1.5	90	1	4.0	1.85	37	151.57	703	20	3.0	2.47	49	117.21	852	25
Plough : 2f rev mb-shallow	85000	0.8	85	2*	4.5	3.27	131	95.26	1057	16	4.5	3.27	131	95.26	1057	20
2f rev mb	85000	0.8	85	2	4.5	3.27	131	95.26	1057	20	4.0	3.68	147	87.11	1159	25
2f mb-shallow	16000	0.8	80	2*	4.5	3.47	139	17.12	851	16	4.5	3.47	139	17.12	851	20
2f mb	16000	0.8	80	2	4.5	3.47	139	17.12	851	20	4.0	3.91	156	15.67	952	25
2f disc plough ***	39000	0.8	85	2	4.5	3.27	131	43.71	888	25	4.0	3.68	147	39.97	985	30
3f rev mb	105000	1.2	85	2	4.5	2.18	87	164.44	855	28	4.0	2.45	98	148.81	924	32
chisel plow	115000	2.0	90	4**	5.0	1.11	89	183.58	457	15	4.5	1.23	99	168.52	490	18
Disc harrow: light, <150mm	50000	1.8	80	3	6.0	1.16	69	98.61	378	8	5.0	1.39	83	84.51	434	10
heavy, >150mm	105000	2.0	80	3	5.0	1.25	75	186.72	518	12	4.5	1.39	83	171.15	554	16
Stool plough:	19000	1.2	90	1	-	-	-	-	-	-	5.5	1.68	34	70.17	502	12
Weeding: 2 row cultivator	23000	2.4	85	2	6.0	0.82	33	87.32	258	4						
Rotary hoe: very fine tilth	95000	2.0	85	1	2.6	2.26	45	281.58	1153	25						
normal tilth	95000	2.0	85	1	3.5	1.68	34	360.38	989	18						
Min. tiller: rotary + ridge	115000	2.4	80	1	2.6	2.00	40	377.70	1213	15						
Lime box: 3m wide	45000	3.0	50	1	6.0	1.11	22	249.50	531	4						
Fert. spreader: (1D broadcast) 500L	12500	6.0	50	1	5.0	0.67	120	15.77	163	3						
Fert. spreader: (broadcast)	63000	6.0	65	1	5.0	0.51	92	97.91	167	3						
Herbicide applicator: (boom)	37000	6.0	70	2	4.5	0.53	212	37.10	140	3						
Mist blower (300-500L mounted)	80000	18.0	70	1	3.5	0.23	41	249.12	108	2						
2 furrow ridger + 2 fert applicators	29000	2.4	90	1	4.5	1.03	21	166.58	406	12						
Ridger: (1 furrow per pass)	18000	1.2	90	1	4.5	2.06	41	55.16	583	10						
Coverer: (one row per pass)	24000	1.2	85	1	4.5	2.18	44	70.13	650	12						
Planter: cane (1 row) ***	105000	1.2	45	1	3.0	6.17	123	129.99	2210	22						
Planter: Cane (2 row) - min till	180000	1.8	60	1	2.5	3.70	74	334.65	2084	22						
Planter: Seed drill/planter	110000	1.8	60	1	4.0	2.31	46	308.89	1243	14						
Rake or windrow tops:	13500	2.5	90	1	6.0	0.74	133	15.76	181	4						
Grader-land plane:	27000	2.0	80	3	4.5	1.39	83	45.63	380	15						
Verge control: (slash 10% total area)	28000	1.5	80	4	4.0	2.08	165	33.20	544	11						
Verge control: (slash 10% total area)	50000	2.0	80	4	4.0	1.56	123	66.90	461	12						

* Same plough used for shallow ploughing and conventional ploughing

*** Estimated value

** Used for stool eradication (2 passes) + two passes for seedbed preparation

Local Products & Suppliers

AGRICULTURAL AND HAULAGE TRACTORS:				TRACTORS AND HAULAGE TRACTORS:								
Company/Distributor:	Company contact:	Product Name & Type	SA agents information:	POWER CATEGORIES: (2wd + 4wd)					EXTRAS:			
				35-50kW	50-60kW	+75kW	+90kW	+125kW	150kW +	Track option	Precision Ag Systems (GPS)	
Agco	www.agcorp.com	Challenger tractors and equipment	www.challenger-ag.co.za							x	x	x
Agco	www.agcorp.com	Massey Ferguson Tractors and equipment	www.masseyferguson.com	x	x	x	x	x	x	x	x	x
Agco	www.agcorp.com	Valtra tractors and equipment	www.valtrac.co.za		x	x	x	x	x	x	x	x
Argo Industrial	www.argosa.co.za	Landini tractors	www.landini.co.za	x	x	x	x	x	x	x	x	x
Argo Industrial	www.argosa.co.za	McCormick tractors	www.mccormick-intl.com	x	x	x	x	x	x	x	x	x
Barloworld Agriculture	www.barloworldagriculture.co.za	Claas SA tractors, cane harvesters	www.claas.co.za	x	x	x	x	x	x	x	x	x
Bell Equipment Co	www.bellequipment.com	Bell tractors, trailers, loaders, cranes and equipment	www.bellequipment.com									
Deere & Co.	www.johndeere.com	John Deere tractors, cane loaders, cane harvesters, implements	www.mascor.co.za	x	x	x	x	x	x	x	x	x
Desmond Equipment S.A.	www.dezzi.co.za	Dezzi tractors, trailers and equipment	www.dezzi.co.za		x	x	x	x	x	x		
Eotra	www.eiegroup.co.za	Deutz-Fahr and SAME tractors and implements	www.eiegroup.co.za	x	x	x	x	x	x	x	x	x
Farmtrac	www.farmtracsa.co.za	Farmtrac tractors	www.farmtracsa.co.za	x	x	x						
Greenfields	www.greenagri.co.za	JCB, Foton, TYM tractors and equipment	www.greenagri.co.za	x	x	x	x	x				
Jinma	www.jinma-tractor.com	Jinma Tractors	www.jinma-tractor.com	x	x							
New Holland S.A.	www.nhsa.co.za	New Holland tractors, implements and equipment	www.nhsa.co.za	x	x	x	x	x	x	x	x	x
Northmec CNH	www.cnh.com	CASE IH cane harvesters, tractors, implements and equipment	www.northmec.co.za	x	x	x	x	x	x	x	x	x
Smith Power Equipment	www.smithpower.co.za	Kubota tractors	www.kubotatractor.co.za	x	x	x	x					
Sonalika Tractors	www.sonalika.com	Sonalika tractors	www.sonalika.com	x	x							

CANE HARVESTERS, LOADERS, CRANES AND CANE TRAILERS:				HARVESTERS:			CANE HANDLING EQUIPMENT:		
Company/Distributor:	Company contact:	Product Name & Type	SA agents information:	Mechanical Cutter:	Tractor Mounted:	Chopper Harvester:	Cane Trailers:	Cane Loaders:	Cane Cranes:
				Barloworld Agriculture	www.barloworldagriculture.co.za	Claas SA cane harvesters, tractors, trailers	www.claas.co.za		
Bell Equipment Co	www.bellequipment.com	Bell tractors, trailers, loaders, cranes and equipment	www.bellequipment.com				x	x	x
Deere & Co.	www.johndeere.com	John Deere cane harvesters, cane loaders, trailers	www.mascor.co.za			x	x	x	
Desmond Equipment S.A.	www.dezzi.co.za	Dezzi tractors, trailers and equipment	www.dezzi.co.za				x	x	x
ESM	www.esm-tdp.de	Cane Thumper (see also Barloworld Agriculture and Northmec)	www.caneharvester.co.za	x					
GC Tillage	www.gctillage.com	C/C Tillage: Civevama ag implements, cane planters, loaders	www.gctillage.com				x	x	
Hin-Tech manufacturing	www.urus-hinteregger.com	Hin-Tech loaders and equipment	www.urus-hinteregger.com					x	
Italia Engineering	italeng@mweb.co.za	Italia Engineering trailers and equipment	italeng@mweb.co.za				x		
Kinsey Engineering	www.kinseyengineering.m.yellowpages.co.za	Kinsey Engineering trailers and equipment	www.kinseyengineering.m.yellowpages.co.za				x		
Landmech	www.landmech.co.za	LandMech equipment, trailers and implements	www.landmech.co.za				x		
LCM engineering	www.lcmengineering.co.za	LCM: trailers	www.lcmengineering.co.za				x		
Maitrarch Equipment	www.maitrarchequipment.com	Maitrarch cane loaders and equipment	www.maitrarchequipment.com					x	
Multiservice engineering	www.multiseng.co.za	Multiservice engineering: trailers, cranes and equipment	www.multiseng.co.za					x	x
Northmec CNH	www.cnh.com	CASE IH Austoft cane harvesters and equipment	www.northmec.co.za	x		x			
Orbach agri	www.orbach.co.za	Orbach: SSS70 cane harvester	www.orbach.co.za		x				
Reid's Engineering	www.reidsengineering.co.za	Reids engineering: Cranes, Trailers, Fire fighting, implements...	www.reidsengineering.co.za				x		x
Rhino	www.rhinoquip.co.za	Rhino agricultural equipment	www.rhinoquip.co.za				x		
Roadhog Trailers	www.roadhogtl.co.za	Roadhog Trailers: trailers, water carts etc.	www.roadhogtl.co.za				x		
Roadking Manufacturing & Supply	www.roadking.co.za	RMS: Trailers, cranes, implements	www.roadking.co.za				x		x
Rogue steel	www.roquesteel.co.za	Rogue agriculture implements and equipment	www.agriculture.roquesteel.co.za				x		
SAFMech	www.safmech.co.za	SAFMech: Agriculture and Forestry equipment	www.safmech.co.za				x	x	
Site Fab Engineering		Site Fab Engineering: Equipment fabricators 039 9761729					x		
Southern Ambition		Southern Ambition: Trailer and cane equipment 032 5521819					x		x
Stako Engineering	www.stako.co.za	Stako: Cane trailers, truck bodies and trailers etc.	www.stako.co.za				x		
Unicab	www.sugarcane.co.za	Unicab trailers and equipment	www.sugarcane.co.za				x		
Vicro marketing	www.caneharvester.co.za	Vicro cane harvester	www.caneharvester.co.za		x				

o = discontinued (2nd hand equipment available)

AGRICULTURAL EQUIPMENT, TRAILERS, IMPLEMENTS AND ATTACHMENTS:				IMPLEMENTS AND EQUIPMENT:				
Company/Distributor:	Company contact:	Product Name & Type	SA agents information:	Cane Planters:	Land Preparation:	Fertiliser applicators:	Sprayers:	Other:
				Agco	www.agcorp.com	Massey Ferguson Tractors and equipment	www.masseyferguson.com	
Agco	www.agcorp.com	Valtra tractors and equipment	www.valtrac.co.za		x	x	x	x
AgriServe (KZN)	robin@kznagriserve.com	AgriServe tractors, agricultural machinery and equipment	robin@kznagriserve.com		x	x	x	x
Baldan	www.baldanagriculturalimplements.com	Baldan equipment	Various		x	x		x
Bargam	www.bargam.com	Bargam sprayers, spreaders and land preparation	Various		x		x	x
BPI Manufacturing	www.bpiimplemente.co.za	BPI agricultural equipment	www.bpiimplemente.co.za		x	x	x	x
Deere & Co.	www.johndeere.com	John Deere tractors, cane loaders, cane harvesters, implements	www.mascor.co.za	x	x	x	x	x
Dicla	www.dicla.com	Dicla tractors, implements and agricultural equipment	www.dicla.com		x	x	x	x
Eotra	www.eiegroup.co.za	Deutz-Fahr and SAME tractors and implements	www.eiegroup.co.za		x	x	x	x
Falcon equipment	www.falconequipment.co.za	Falcon agricultural equipment	www.falconequipment.co.za		x	x	x	x
Farm Maintenance Services	larry@fms.org.za	Farm Maintenance Services tractors and agricultural equipment	larry@fms.org.za		x	x	x	x
GC Tillage	www.gctillage.com	GC Tillage: Civevama ag implements, cane planters, loaders	www.gctillage.com		x	x	x	x
Landmech - See RMS below	www.landmech.co.za	LandMech (see RMS) equipment, trailers and implements	www.landmech.co.za		x	x	x	x
Lemken	www.lemken.com	Lemken SA agricultural equipment	www.lemken.com		x			
Mnani	www.mnani.co.za	Mnani agricultural equipment	www.mnani.co.za		x	x	x	x
Multiservice engineering	www.multiseng.co.za	Multiservice engineering: trailers, cranes and equipment	www.multiseng.co.za		x			
Nardi Equipment	www.zruppwardi.it	Nardi equipment	Various		x			
New Holland S.A.	www.nhsa.co.za	New Holland tractors, implements and equipment	www.nhsa.co.za		x	x	x	x
Northmec CNH	www.cnh.com	CASE IH Austoft cane harvesters and equipment	www.northmec.co.za		x	x	x	x
Peake equipment	www.peakeequipment.co.za	Peake sprayers and equipment	www.peakeequipment.co.za				x	x
Quantum sprayers	www.quantumsprayers.co.za	Quantum mounted and trailed sprayers; fire fighting equipment	www.quantumsprayers.co.za				x	x
Radium Engineering	www.radium.co.za	Radium agricultural equipment, implements	www.radium.co.za		x		x	x
Reid's Engineering	www.reidsengineering.co.za	Reids Eng: Trailers, Fire fighting, implements, attachments...	www.reidsengineering.co.za				x	x
Rhino	www.rhinoquip.co.za	Rhino agricultural equipment	www.rhinoquip.co.za				x	x
Roadhog Trailers	www.roadhogtl.co.za	Roadhog Trailers: trailers, water carts etc.	www.roadhogtl.co.za					x
Roadking Manufacturing & Supply	www.roadking.co.za	RMS: Trailers, cranes, implements	www.roadking.co.za	x	x	x	x	x
Rogue steel	www.roquesteel.co.za	Rogue agriculture implements and equipment	www.agriculture.roquesteel.co.za		x		x	x
Rovic and Leers	www.rovicleers.co.za	Rovic and Leers agricultural implements	www.rovicleers.co.za	x	x	x	x	x
SAFMech	www.safmech.co.za	SAFMech: Agriculture and Forestry equipment	www.safmech.co.za		x		x	x
Sonalika Tractors	www.sonalika.com	Sonalika tractors and implements	www.sonalika.com		x		x	x
Southern Ambition		Southern Ambition: Trailer and cane equipment 032 5521819			x		x	x
Spray-Rig	www.sprayrig.co.za	Spray-Rig agricultural equipment	www.sprayrig.co.za				x	x
Tillmaster	www.tillmaster.co.za	Tillmaster agricultural equipment	www.tillmaster.co.za		x	x		x
Unicab	www.sugarcane.co.za	Unicab trailers and equipment	www.sugarcane.co.za					x

International Products & Suppliers

Company/Distributor:	Company contact:	Product Name & Type	HARVESTERS:			CANE HANDLING EQUIPMENT:			IMPLEMENTS AND EQUIPMENT:					
			Mechanical Cutter:	Tractor Mounted:	Chopper Harvester:	Cane Trailers:	Cane Loaders:	Cane Cranes:	Cane/speeding Planters:	Land Preparation:	Fertiliser applicators:	Sprayers:	Other:	
AGCO - CAT, Fendt, Massey Ferguson, Valtra...	www.agcocorp.com	Santal cane loaders			x			x				x	x	x
Bednar	bednar-machinery.com	Tillage, land preparation, slashing, cultivation, fertiliser application										x	x	x
BRN	www.brnbrasil.com.br	BRN planters by CASE IH				x	x	x				x	x	x
Bunmei Noki	www.bunmei.co.jp	Bunmei walk behind mechanical sugarcane cutter	x											
Checchi Magli	http://www.checchiemaqli.com/	Transplanters, lifters by www.rovicleers.co.za										x	x	
Cima	www.cima.it	Sprayers, www.rovicleers.co.za												x
Civemasa	www.civemasa.com.br	planters, implements										x	x	x
Claas	www.claasofamerica.com	Tractors, harvesters, balers, forage, hay												x
CNH - CASE IH, NEW HOLLAND	www.cnh.com	CASE IH cane harvesters, tractors, implements and equipment			x									
Deccan	www.deccanequipments.com	Ploughs, rotorvators, trash shredder, stubble shaver												x
Deere & co.	www.ihndeere.com	John Deere cane harvesters, tractors, cane loaders, implements			x			x				x	x	x
Doble TT	http://implementosdobleTT.com.ar	Cane billett planters, soil preparation, trailers				x						x	x	x
ESM	www.esm-ept.de	ESM mechanical sugarcane cutter	x											
Field King	www.fieldking.com	Loaders, land preparation						x						x
Game Equipment	www.gameeq.com	Game slew and continuous loaders, transporters, billett planters				x	x					x		
Gessner	www.gessner.com.au	Gessner Planters, land preparation, fertilizer applicators						x				x	x	x
Graham Twyford	www.gtmachinerysales.com.au	GT Transporter units, billett planters				x								
GWW	www.globalwinwin.com	mechanical sugarcane cutter	x				x							
Hardi	www.hardi-international.com	sprayers, www.hardi.co.za												x
Hodge	www.hodge.com.au	Hodge mechanical sugarcane cutter	x									x	x	x
Hygrotech	www.hygrotech.co.za/	Mechanical transplanters										x		
Jeanfil	www.jeanfil.com	trailers, spreaders											x	x
Jacto	www.jacto.com	sprayers												x
Kongskilde	www.kongskilde.com	Soil preparation, cultivation, planting, crop protection, etc...											x	x
Kuhn	www.kuhn.com	Soil preparation, spreaders, crop protection, fertilization etc,											x	x
Lemken	www.lemken.in	Land preparation, crop protection equipment											x	x
Mahindra	www.mahindra.com	Small tractors & equipment, cutters, mulchers, shredders, landprep	x	x									x	x
Monosem	http://www.monosem.com/	planters, cultivators, fertilizer applicators											x	x
Motocana	www.motocana.com	Motocana loaders, high lift tip trailers, bed formers						x	x					
MQI machinery	www.mqimachinery.com	MQI Cane planters						x				x	x	
Santal	www.santal.com.br	See AGCO												
Sheng Qian Industry Co.	www.sqindustry.com	mechanical sugarcane cutter	x					x						
Simon equipment	www.machines-simon.com	Simon Sugarcane harvester		x										
Struik	www.struikholland.nl	land preparation, bed formers,												
Sulky	www.sulky-burel.com	Cultivators, drills, spreaders											x	x
TAGRM	www.taqrm.com	Mechanical harvester, slew loader, planters			x							x		
Tatu Marchesan	www.marchesan.com.br	Land preparation, spreaders, coverers, other implements						x					x	x
Tesuo Industrial Co	www.tesuo.com	harvester			x									
Valtra equipment	www.valtra.com.br	Valtra cane harvester BE1035e, loader BE1100, HC tractor, implements			x			x				x	x	x
Walpeco	www.walpeco.com	Walpeco mechanical sugarcane cutter, billett and wholestick planters	x									x		x