

Sweet potato (*Ipomoea batatas*) vine silage: a cost-effective supplement for milk production in smallholder dairy-farming systems of East Africa?

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Table S1. Itemized cost of producing feed used in the trial including: Commercial Dairy Concentrate (CDC), Napier grass (NG) and Sweet Potato Vine Silage (SPVS).

Item	Unit	Quantity	Unit cost (KES)	Cost (KES)
Commercial Dairy Concentrate (1tonne)				
Maize Germ	kg	320	22	7040
Wheat Bran	kg	300	17	5100
Cotton seed cake	kg	100	40	4000
Sunflower meal	kg	60	30	1800
Wheat pollard	kg	200	30	6000
Di-calcium phosphate	kg	10	95	950
Mineral pre-mix	kg	4	130	520
Limestone	kg	6	10	60
Milling cost	t	1	9800	9800
Transport	t	1	7000	7000
Total cost/t	t	1		42,270
Napier Grass				
Cuttings for establishment	t	2	2500	5000
Plant hire (ploughing etc)	ha	2	3000	6000
Fertiliser (planting)	kg	80	70	5600
Top dressing	kg	120	40	4800
Fuel (Chaffing)	l	100	110	11000
Labour (cultivation & chaffing)	(man) days	110	600	66000
Total Cost	KES			98400
Cost/t (*t of NG harvested)	KES	128*		768.75
Sweet Potato Vine (1.95ha)				
Cuttings	each	99000	1	99000
Labour (establish, cultivation, harvest)	(man) days	100	600	60000
Plant hire (ploughing etc)	ha	1.95	3000	5850
Herbicide	l	4	1000	4000
Total Cost Sweet Potato crop	KES			168850
Yield of tubers	kg	12,569		
Yield of Vines	kg	40,523		
Production cost of Vines [#]				128,876
Production Cost vines (KES/t)	t			3,180
Sweet Potato Vine Silage				
Sweet Potato Vine (10 silos)	kg	4000	3.18	12,720
Silage tube (10)	m	25	200	5000
Compacting drum	each	1	850	850
Drainage Tubing	each	10	80	800

Molasses	kg	90	30	2700
Wheat Bran	kg	135	17	2295
Napier grass	kg	450	0.8	360
Fuel (chaffing)	l	30	110	3300
Labour (mixing, chaffing, compacting)	(man) days	15	600	9000
Total cost	KES			37025
Total Silage production	t			4.675
Cost of Silage per t	KES			7,920

Calculation on Mass balance basis: (mass of vines/ total mass of crop * total cost of production).

*Cost per tonne of harvested Napier grass

**cost per kg of vines less revenue (@market price) from tubers harvested