

Table 1. Design of the on-farm/lab vine fermentation trial

Treat-ments	Proportion (%) ^a				
	Sweetpotato vine	Corn meal	Cassava meal	Rice bran	Sun-dried chicken manure
1	93.5	6			
2	83.5	6			10
3	87.5	6		6	
4	83.5	3		3	10
5	93.5		6		
6	83.5		6		10
7	87.5	6	6		
8	83.5	3	3		10
9	93.5			6	
10	83.5			6	10
11	87.5		6	6	
12	83.5		3	3	10

^a All treatments also contained 0.5% salt

Table 2: Composition, nutritive value and price of the base feed formulated for each pig weight category (%)

Feed composition	Feed composition		
	15–30 kg pig	30–60 kg pig	>60 kg pig
Rice bran (%)	30	28	25
Corn meal (%)	40	39	36
Cassava meal (%)	13	28	25
Fish meal (%)	9	8	7
Soya bean (%)	8	7	7
Dry matter (%)	88.76	88.76	88.79
Crude protein (%)	14.45	13.48	12.64
ME (Kcal/kg)	3040	3046	3065
Price (VND/kg)	2428	2318	2211

Table 3. Recommended daily feed for each treatment based on pig weight

Treat-ments	Feed	Daily feed quantity (kg/head)				
		20–30 kg pig	30–40 kg pig	40–50 kg pig	50–60 kg pig	>60 kg pig
T1	Base feed	1-1.5	1.5-1.8	1.8-2	2-2.3	2.3-3
	Fresh sweetpotato vines	1.6	2	2.3	2.5	2.9
T2	Base feed	1-1.5	1.5-1.8	1.8-2	2-2.3	2.3-3
	Fermented sweetpotato vines	1	1.2	1.5	1.6	1.8
T3	Base feed	1-1.5	1.5-1.8	1.8-2	2-2.3	2.3-3
	Fermented sweetpotato vines	0.8	1	1.2	1.3	1.5

Table 4. Average initial weight, end weight, total weight gain, and daily weight gain of the 30 pigs in the pig-feeding trial

Weight	100% fresh sweetpotato vine		93.5% sweetpotato vine, 6% cassava meal, 0.5% salt		83.5% sweetpotato vine, 6% cassava meal, 10% chicken manure, 0.5% salt		P
	Mean	SD	Mean	SD	Mean	SD	
Initial weight (kg)	20.35	3.24	20.75	4.06	21.85	3.92	0.657
End weight (kg)	60.40 ^a	7.79	66.10 ^{ab}	10	73.40 ^b	10.47	0.018
Total weight gain (kg)	40.05 ^a	7.86	45.35 ^{ab}	8.18	51.55 ^b	7.99	0.013
Daily weight gain (g)	431 ^a		488 ^{ab}		554 ^b		
Rate of weight gain (%)	100.00		113.20		128.7		

* at $\alpha = 0.05$, ^a and ^b, across rows, are significantly different.

Table 5. pH value of the 12 treatments of the fermentation trial

Treat- ments	Number of days after the fermentation started								
	14		30		60		90		P
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
1	a3.53a	0.04	ab3.73b	0.09	a3.72b	0.05	a3.65b	0.09	0.000
2	c3.92	0.03	c4.03	0.13	b3.89	0.12	B3.98	0.04	0.068
3	a3.55a	0.02	a3.70b	0.08	a3.65b	0.02	a3.71b	0.05	0.000
4	c3.97ab	0.01	cd4.08c	0.04	b3.90a	0.02	b3.99b	0.08	0.000
5	a3.52a	0.01	ab3.81bc	0.03	b3.88c	0.08	a3.73b	0.07	0.000
6	c3.95a	0.03	de4.14b	0.01	bc3.94a	0.14	bc4.05ab	0.04	0.000
7	a3.51a	0.04	ab3.76b	0.04	a3.67b	0.11	a3.75b	0.04	0.000
8	c3.91a	0.03	de4.10d	0.02	cd4.06c	0.02	Bc4.03b	0.01	0.000
9	b3.61a	0.02	b3.82d	0.04	a3.75c	0.01	a3.66b	0.03	0.000
10	d4.05a	0.03	e4.20c	0.06	d4.19c	0.02	c4.12b	0.02	0.000
11	a3.51a	0.03	ab3.76b	0.05	b3.83c	0.04	a3.74b	0.06	0.000
12	c3.93a	0.04	de4.17c	0.01	bc4.00b	0.04	b4.03b	0.03	0.000
P	0.000		0.000		0.000		0.000		

*at $\alpha = 0.05$, the letters to the left of the numbers are significantly different across columns.

*at $\alpha = 0.05$, the letters to the right of the numbers are significantly different across rows.

Table 6. The nutritional content of the 12 fermented treatments*

Treatments	Dry matter (DM) (% of fresh weight)	Crude protein (% of DM)	Ash (% of DM)	Ether extract (% of DM)	Crude fiber (% of DM)
1	a25.04	bc14.86	b11.85	b3.43	bc17.04
2	c31.31	e18.59	d16.46	bc3.53	abc 15.66
3	b28.57	b14.32	a10.7	de5.01	bc16.69
4	c31.85	e18.62	de17.35	c4.14	abc15.19
5	a25.72	a13.19	bc12.25	a2.44	bc16.64
6	c30.09	d17.63	de17.1	ab2.99	ab14.47
7	b28.47	a12.76	a10.16	ab2.96	a13.97
8	c31.92	d17.53	de17.33	b3.23	a13.98
9	a25.85	c15.45	c13.54	e5.62	c17.32
10	c31.63	e19.11	e18.34	de5.41	abc16.06
11	b29.26	a12.60	ab11.45	de5.21	abc15.95
12	c31.45	d17.78	de17.16	d4.91	abc15.11
P	0.000	0.000	0.000	0.000	0.000
with chicken manure	31.38	18.21	17.29	4.04	15.08
without chicken manure	27.15	13.86	11.66	4.11	16.27

*at $\alpha = 0.05$, the letters to the left of the numbers are significantly different across columns.

*at $\alpha = 0.05$, the letters to the right of the numbers are significantly different across rows.

*Because the nutritional contents from the various time periods (i.e., 14, 30, 60, 90 days) were not significantly different, this table reports the value of the analysis from the 90-day fermentation.

Table 7. The cost of dry matter, crude protein and ash of the 12 treatments

Treatments	Cost (VND/kg)			
	Fresh matter	Dry matter	Crude protein	Ash
1	630	2516	16,931	21,232
2	645	2060	11,081	12,515
3	711	2489	17,379	23,258
4	648	2035	10,927	11,726
5	582	2264	17,162	18,479
6	597	1931	10,955	11,295
7	657	2308	18,085	22,714
8	621	1945	11,098	11,226
9	636	2465	15,955	18,206
10	651	2058	10,770	11,222
11	663	2266	17,983	19,789
12	624	1984	11,159	11,562
with chicken manure	631	2002	10,998	11,591
without chicken manure	647	2299	16,260	19,006

Table 8. Feed conversion, protein conversion and feed cost of each of the treatment during the 93-day feeding trial

Feed conversion and cost	100% fresh sweetpotato vine			93.5% sweetpotato vine, 6% cassava meal, 0.5% salt			83.5% sweetpotato vine, 6% cassava meal, 10% chicken manure, 0.5% salt		
	Base feed	Fresh sweet potato vines	Total	Base feed	Fermented sweet potato vines	Total	Base feed	Fermented sweet potato vines	Total
Feed conversion (kg/kg weight gain)	4.29	3.03		3.62	2.62		2.92	2.20	
Feed conversion (kgDM/kg weight gain)	3.81	0.27	4.08	3.21	0.68	3.89	2.60	0.71	3.30
Protein conversion (g/kg weight gain)	580	41	621	489	344	833	395	375	770
Feed cost (VND/kg weight gain)			10,784			8,875			7,383