

Table 1. The sweet potato-pig system in two districts of Thanh Hoa Province, Vietnam.

Pig and Sweetpotato Production and Utilization	Tinh Gia	Hoang Hoa
Pig Production (per household)		
Avg. # pigs/ year	3.4	4
Avg. # pigs currently	2	2
Beginning weight (kg)	9	13
Ending weight (kg)	87	64
Avg. growth of current pigs ^a (kg/mo)	9.08	10.65
Avg. # sows	.1	1
Sweet Potato Utilization (per household)		
Production (Ton/year)	2.02	1.1
% for food	38.3	13
% for pig feed	46.7	86.5
% for cattle	15	.5
Sweet Potato Root for Pig Feed (kg/day/pig)		
Piglets	.92	.53
Growing pigs	1.91	1.13
Fattening pigs	3.06	1.64
Sows	--	2.11
Nursing sows	--	1.56
Sweet Potato Vine for Pig Feed (kg/day/pig)		
Piglets	2.18	1.46
Growing pigs	4	2.97
Fattening pigs	7.14	4.69
Sows	--	7.78
Nursing sows	--	7.32

^a The estimated growth rate of the pigs currently kept in the pens.

Table 2. Laboratory analysis of nutritive values of various protein supplements.

<i>Samples</i>	<i>Moisture Absolute</i>	<i>Crude Protein (%)</i>	<i>Ca(%)</i>	<i>P(%)</i>
Small shrimp	27.67	12.62	0.69	0.47
Fresh small fish	13.3	58.85	4.42	2.29
Dried small fish		70.91	5.33	2.76
Fish sauce residue (solid)	2.54	9.65	3.00	1.83
Fish sauce residue (uncooked)	2.26	5.75	1.33	0.69
Shrimp head	5.57	20.65	13.80	1.08
Fish sauce residue (cooked)		5.63	0.93	0.72
Sweet potato starch residue	7.43	0.43		

Table 3. Feed combinations in the two districts of Thanh Hoa Province, with the basic formula: sweet potato vines and roots (fresh and dried), rice bran, and light feed (vegetables, grass, and banana stalk).

<i>Feed Combinations</i>	<i>Tinh Gia</i>	<i>Hoang Hoa</i>	<i>Total</i>
Basic formula only	3	1	4
Basic formula + Rice	2	0	2
Basic formula + Rice + Maize	0	1	1
Basic formula + Maize + Peanut ^a	3	2	5
Basic formula + Peanut	2	0	2
Basic formula + Rice + Peanut	1	0	1
Basic formula + Rice + Maize + Peanut	3	5	8
Basic formula + Rice ^b + Maize + Peanut	6	11	17

^a Only negligible amount of unmarketable peanuts are fed to pigs.

^b For piglets and nursing sows only.

Table 4. Formulation of daily feed ration for the four treatments of the trial (kg/day/pig).

		Treatment 1						Treatment 2							
Pig		Sweet Potato						Sweet Potato							
Weight	Fish	Root	Chip	Vine	Maize	Bran	Rice	Fish	Chip	Vine	Maize	Bran	Rice		
21-30/4 ^a		0.5		0.7	0.2	0.1	0.2		0.5	0.7	0.2	0.1	0.2		
1--20/5 ^a		0.7	0.2	0.5	0.2	0.3			0.45	0.5	0.2	0.3			
21--30	0.05	1	0.3	0.7	0.25	0.4		0.05	0.6	0.7	0.25	0.4			
31--40		1.2	0.35	1	0.25	0.5			0.775	1	0.25	0.5			
41--50	0.08	1.5	0.4	1.5	0.3	0.6		0.08	0.775	1.5	0.3	0.6			
51--60		2	0.4	2	0.4	0.6			0.9	2	0.4	0.6			
61--70		2	0.4	2	0.5	0.7			0.9	2	0.5	0.7			
71--80	0.08	2.5	0.4	2.5	0.6	0.8		0.08	1.1	2.5	0.6	0.8			
Pig		Treatment 3						Treatment 4							
Weight		Sweet Potato						Sweet Potato							
Fish	Root	Chip	Vine	Maize	Bran	Rice	FSR^b	Fish	Root	Chip	Vine	Maize	Bran	Rice	
21-30/4 ^a		0.5		0.7	0.2	0.1	0.2			0.5		0.7	0.2	0.1	0.2
1--20/5 ^a	0.08	0.7	0.2	0.5	0.2	0.3		0.05	0.05	0.7	0.2	0.5	0.2	0.3	
21--30	0.1	1	0.3	0.7	0.25	0.4		0.1	0.05	1	0.3	0.7	0.3	0.4	
31--40	0.12	1.2	0.35	1	0.25	0.5		0.2	0.08	1.2	0.4	1	0.3	0.5	
41--50	0.15	1.5	0.4	1.5	0.3	0.6		0.2	0.1	1.5	0.4	1.5	0.3	0.6	
51--60	0.15	2	0.4	2	0.4	0.6		0.2	0.1	2	0.4	2	0.4	0.6	
61--70	0.2	2	0.4	2	0.5	0.7		0.2	0.1	2	0.4	2	0.5	0.7	
71--80	0.2	2.5	0.4	2.5	0.6	0.8		0.2	0.15	2.5	0.4	2.5	0.6	0.8	

^a During this period, the daily feed was formulated for a ten-day period instead of the weight of the pigs.

^b FSR = Fish Sauce Residue.

Table 5. Monthly, daily, and percent weight gain in relation to beginning weights of the four treatments.

	Treatment 1		Treatment 2		Treatment 3		Treatment 4	
	Avg	Range	Avg	Range	Avg	Range	Avg	Range
Bgn wt. (kg)	11.1	9.33-13.5	10	9.3-10.6	7.7	6.7-8.8	8.3	6.6-9.9
Tl wt gain (kg)	52.3	43.4-61	52.3	38.8-61.5	34.5	25.3-49.2	38.9	25.4-59.5
Mo wt gain (kg)	11.8	9.8-13.8	11.8	8.8-13.9	7.8	5.7-11.1	8.8	5.7-13.4
Daily wt gain (kg)	.39	.33-.46	.39	.29-.49	.26	.19-.37	.29	.19-.45
% wt gain (%)	477	424-561	533	416-615	452	362-559	459	318-661

Table 6. Feed cost for one pig and cost for one kilo of weight gain (VND).

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Total feed cost per pig	392,839	398,198	389,660	369,014
Cost of 1 kg of wt gain	8,430	8,028	11,808	10,250

Table 7. Average feed consumption and costs of one pig of the four treatments.

	Treatment 1			Treatment 2			Treatment 3			Treatment 4		
	Kg	vnd ^a	% ^c	Kg	vnd	%	Kg	vnd	%	Kg	vnd	%
Fish	5.87	56	14.4	5.5	53	13.4	11.5	111	28.4	7.7	74	20.1
FSR	0	0	0	0	0	0	0	0	0	11.5	3	.9
Maize	35.8	71	18	34.6	68	17.2	30	59	15.2	32.1	63	17.2
SP root ^b	154	69	17.6	0	0	0	126.8	57	14.7	131	59	16
SP chips ^b	39.3	64	16.2	90.9	148	37.1	34.6	56	14.4	35.2	57	15.5
SP vine ^b	135.	20	5.2	126	19	4.8	92.5	14	3.6	106	16	4.3
Rice bran ^b	58.3	108	27.5	57	105	26.5	47.7	88	22.7	51.3	95	25.7
Rice ^b	2	4	1.1	2	4	1.1	2	4	1.1	2	4	1.2
Total	430	392.9	100	316	398.2	100	345.1	389.7	100	365.5	369	100

^a In thousand VND

^b These are feed readily available on the farm which are not normally purchased.

^c Percentage of the total feed cost.

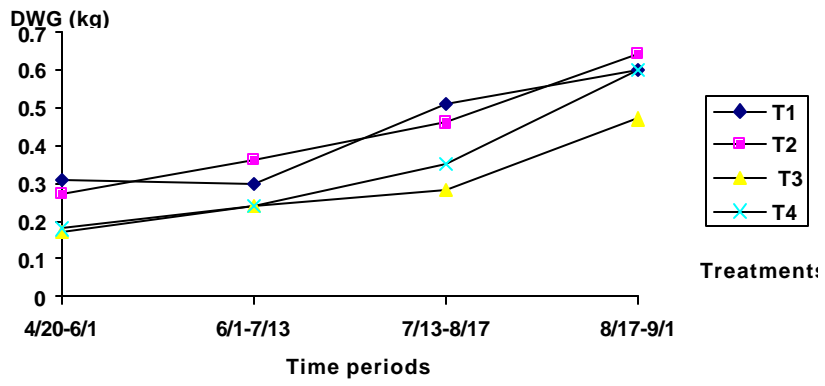


Figure 1. Periodic daily weight gain (DWG) of the four treatments.