

## THE USE OF COCONUT CAKE AND FISH SILAGE AS PIG FEED IN THE SEYCHELLES

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9 week old pigs were fed for 12 weeks on A) 70% coconut meal/30% fish silage (wet basis), B) 35% coconut meal/35% breadfruit flour/30% fish silage, C) 35% coconut meal/15% fish silage/50% pigmeal, and D) pigmeal. Respective growth rates were 186, 186, 409 and 282 g/day

Key words: Fish silage, breadfruit flour, coconut meal, pigs.

On many small tropical islands the main agricultural crop available is the coconut, and this creates difficulties in the production of indigenous animal feeds. In many canes fish waste is also available, but in insufficient quantities for conventional methods of utilisation, eg fish meal production.

Preliminary trials in the Seychelles on the use of ensiled fish waste and locally produced coconut cake for pig raising are reported. The trials were necessarily limited by the availability of raw materials, labour and suitable stock.

## Materials and Methods

Fish hydrolysate was prepared from the frozen fish heads of different fish species (mainly *Lutianus bohar*, *Lutianus sebae* and *Euthynnus affinis*). The heads were allowed to defrost and minced while still cold. 3.5% formic acid on a volume/weight basis was stirred in, the mince covered with a plastic sheet and left at an ambient temperature of 30°C. The silage was stirred once every day and mixed with the cake after one week or when required for the feeding.

Coconut cake (poonac) was obtained from Providance, one of the "Outer islands" of Seychelles. It was the residue from the recovery of oil using an expeller press. As the presses used in Seychelles are old and inefficient the cake had a fairly high oil content.

To the experimental diets was added a commercial mineral supplement (Messrs. Pauls and Whites, Ipswich, UK) at manufacturers' recommended rate, together with additional thiamine (4g/tonne) and vitamin E (70g/tonne).

Piglets (Wessex saddleback) from 6 litters weaned at 6 weeks were started on the trial at 9 weeks of age. They were divided into 4 groups and fed the following diets ad libitum for 12 weeks: (A) 70% coconut meal, 30% fish silage, wet weight basis (4 pigs); (B) 35% coconut meal, 35% breadfruit flour and 30% fish silage (2 pigs); (C) 35% coconut meal, 15% fish silage and 50% of a commercial pig meal ie 50% of diet A and 50% of commercial meal (3 pigs) and (D) Commercial pig meal (controls : 4 pigs).

The piglets were weighed weekly but unfortunately it was not possible to measure feed intake and hence FCE (Feed Conversion Efficiency.)

## Results and Discussion

The diets were readily accepted by the pigs. The analytical data for the diets and starting materials are summarised in Table 1. Mean DLWG (daily liveweight gains g/day) were 186 (group A, range 54 to 245), 186 (Group B, 141 to 232), 409 (Group C, range 377 to 459) and 282 (Group D, range 255 to 309). The mean DLWG value for Groups (A) and (B) were depressed by one slow growing piglet in each group. The higher growth rates of Group C compared with the controls were unexpected. It is not clear whether this could be due to a dilution effect by the commercial meal or to complementary effects.

Table 1:  
Chemical composition of starters (as received)

	Moisture %	Crude Protein %	Ether Extract %	Crude Fibre %	Ash %
Fish silage	60.0	17.7	7.9	0.1	11.6
Breadfruit flour	10.9	6.1	1.9	5.2	3.9
Coconut cake	10.9	16.6	27.3	8.4	3.5

At the end of the experimental feeding period the pigs were fed commercial pig meal and after 10 days 3 pigs, one each from Groups A, B and C were slaughtered. The pork of the slaughtered pigs was distributed to 12 European and Seychellois households. The comments were very favourable, and on no occasion were taints or unusual flavours observed.

If it is assumed that the fish offal is obtained from fish processing plants at zero cost, then the total cost of the experimental diet A inclusive of raw materials, supplementation, depreciation of building and plants, labour, power and bags would be US\$ 135/tonne. Experimental diet B would cost \$US105/tonne to produce. These prices compare favourable with the price quoted for imported pigfeed at \$US 262/tonne at the time of trial.

Good results have been reported from the Gilbert Islands (Kilduff, personal communication) with silage/coconut diets fed to pigs. Although small numbers of animals were necessarily used in the trial reported in this note, the results are considered to be encouraging and indicate that diets of this kind would justify further investigation.

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