NUTRIENT COMPOSITION OF DIFFERENT SWILL MATERIALS USED FOR PIG REARING IN KERALA

In most of the pig enterprises, feeding concentrate accounts for nearly 80 per cent of the total cost of production and is found to be not economical at farmer's level. Proper formulation of cheaper rations based on locally available materials and efficient use of agricultural by products and food waste offers the best possibility of reducing the cost of production to a greater extent, because the pigs are efficient converters of agricultural by products and garbage in to high quality meat or protein. In view of ever increasing cost of concentrates, farmers are entering into contract with restaurants, hotels and hostels for supply of garbage or kitchen waste to feed the pigs. Integration of pig production with other agricultural activity is gaining importance as it provides cheaper input for either of the activities.

Feed samples were collected from sources like hotel waste, chicken offal, vegetable waste and pooled samples at fortnightly intervals for a period of six months and analysed for proximate principles (A.O.A.C. 1990).

The proximate composition of different feed samples (DM basis) *viz.,* chicken offal, hotel waste, vegetable waste and pooled samples were analysed as shown in table. The moisture content of vegetable waste was found to be the highest (88.20) followed by hotel waste (76.80), chicken offal (71.40) and pooled samples (76.82). The crude protein (CP) content of chicken offal was the highest (25.26). Vegetable waste and hotel waste had a CP of 9.76 and 9.6 respectively while the pooled sample had a CP of 14.80 as furnished in the table. Fanimo and Tewe (1996) reported lower moisture for chicken waste but the crude protein per cent was 60, which was almost three times of the observation in this study. Harikumar (2001) observed similar moisture percentage for chicken offal (70.79) but the crude protein per cent was higher (35.63) when compared to this study (25.26). Ranjan (2003) observed 35 per cent dry matter and 26.3 per cent crude protein in the hotel waste whereas Harikumar (2001) observed a crude protein per cent of 10.25 for hotel waste which is in agreement with the present study. Low CP per cent of hotel waste may be due to presence of cooked rice as the major ingredient of hotel waste in this study. Rivas *et al.* (1996) also reported a high CP of 22.4 per cent for dehydrated edible restaurant waste.

In this study the crude fibre content was 7. 02 for chicken offal and 6.40, 9.13 and 6.33 for hotel waste, vegetable waste and

Table . Proximate composition of feed samples (on DM basis)

Proximate Principle	Chicken offal	Hotel waste	Vegetable waste	Pooled sample
Moisture	71.4±1.33^{a}	76.8±1.57^{a}	88.2±0.88^{b}	76.82±1.62^{a}
Crude protein	25.26±2.84^{c}	9.6±0.91^{a}	9.76±1.02^{a}	14.8±1.42^{b}
Crude fibre	7.02±0.86^{a}	6.4±0.76^{a}	9.13±0.62^{b}	6.33±0.64^{a}
Ether Extract	38.7±2.21^{b}	20.21±1.38^{a}	19.5±1.57^{a}	18.65±1.18^{a}
Total Ash	6.30±0.41^{a}	6.4±0.22^{a}	5.9±0.52^{a}	5.8±0.16^{a}
N.F.E	22.7±1.77^{a}	57.41±1.61^{b}	55.75±1.24^{b}	54.51±1.62^{b}
Acid insoluble ash	2.1±0.28^{b}	0.43±0.13^{a}	0.91±0.09^{a}	1.04±006^{a}

pooled samples respectively. The values are in agreement with observations of (Farimo and Tewe, 1996; Harikumar, 2001; Ranjan, 2003; Anil, 2005). However Rivas *et al.* (1996) reported a much lower per cent (2.3) crude fibre for dehydrated restaurant waste.

The ether extract value was found to be highest for chicken offal (38.7) followed by hotel waste (20.21), vegetable waste (19.50) and 18.65 for pooled sample. Harikumar (2001) reported (EE) of 30.9 per cent for chicken offal and 18.34 per cent for hotel waste. But Fanimo and Tewe (1996) recorded a very low 8.46 per cent of EE for chicken offal and Ranjan (2003) 7.63 per cent of EE for hotel waste. Chicken offals in the present study included the alimentary tract and the subcutaneous fat of the skin and this might be the reason for a higher ether extract.

NFE for all the feedstuffs was more than 50 per cent except for chicken offal (22.70). Acid insoluble ash was highest (2.10) for the chicken offal and lowest for hotel waste (0.43).These values were with in the normal limits given by various authors (Michael *et al.*, 1973; Cunha,1977; Gloridoss and Das 1983; Ravi and Reddy 1997 and Chinnamani,2003)

The high percentage of acid insoluble ash in chicken offal (2.1 %) compared to hotel waste and vegetable wastes may be due to presence of sand in the intestinal content of chicken.

The result of the present study revealed that the crude protein (CP) content of the different source varied significantly. The chicken waste had maximum CP, while the hotel and vegetable waste had similar rates crude protein. The pooled feed sample had a CP of 14.8%. Based on these results, it was concluded that the pigs may be fed with the swill feed consisting combination of different sources for better growth.

Summary

A study was conducted to analyse the proximate principles of swill materials like chicken waste, hotel waste, vegetable waste and pooled sample. The crude protein (%) contents varied significantly and the values were 25.26, 9.60, 9.76 and 14.80 respectively. The content of other principles like moisture, crude fiber, ether extract, NFE and AIA varied significantly among the sources. However, total ash content was similar in all the sources.

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