

# Improved pig feed

Improved pig feed

Improved pig feed for pig raising in Vietnam

In Hanoi, Vietnam, total meat production increased from 31,000 t in 1997 to 33,000 t in 1999. This production meets only 50% of the total demand of the city and the other half is produced in neighbouring provinces and rural areas. Meat demand is expected to increase to a further 119,600 t by 2010, with 80% of the production coming from peri-urban farmers close to the city market (from Urban Agriculture Magazine).

## Introduction

Pig-raising in urban areas has become important in meeting the growing pork demand. Meat production in Vietnam is constrained by shortages of feed (local or imported). The profitability of the current pig-raising practice of feeding farm crops in an unsystematic manner is low. This presents a serious constraint to the farmers, because pigs often provide the only source of cash income.

Sweet potato (*pomoea batatas*) is a valuable pig feed: and both roots and leaves can be used fresh, dried or fermented into silage (Woolfe, 1992). It is a common feed for pigs, and other livestock, in many countries in Asia. In Vietnam, feeding sweet potato roots and vines to pigs, along with rice bran, corn and sometimes cassava roots, is common in the north and central parts of the country.

The main constraints to using sweet potato vines as pig feed are labour and storage. Regardless of how they are fed to the animals, the vines must first be chopped into small pieces, a daunting and time-consuming task, mainly undertaken by women. If the vines are fed fresh, the women must allocate time each day for this task, even during the busy field season.

## Silage of sweet potato vines

Silage offers a potential alternative. Use of vine silage overcomes both main constraints: the women are able to process the vines during the off-season when labour is more abundant, and store the silage for use when feed is limited. Moreover, there is also the economic advantage of processing and storing the vines during the harvest season when they are relatively cheap and feeding them to pigs during the off-season when the vines are expensive. Furthermore, ensiling may increase nutritional value and feed efficiency if it involves a fermentation process, which converts nitrogen into protein.

A trial with 12 fermented mixtures of sweet potato vines and various combinations of additives was conducted in a village in Ha Tay Province in the Red River Delta (details are available from the author and will be published elsewhere). The combinations of additives included corn meal, cassava meal, rice bran, and sun-dried chicken manure, all locally available and affordable material. The results showed that fermenting sweet potato vines with chicken manure increased the crude protein content. However, because high crude protein content does not necessarily guarantee better quality feed (Gerpacio et al, 1967), a subsequent on-farm pig-feeding trial was conducted to examine the effects of sweet potato vines fermented with chicken manure on pig growth and economic efficiency.

This trial showed that a treatment of the sweet potato vines with chicken manure achieved the highest feed and dry matter conversion rates (i.e. lowest feed or DM input for per kilo weight gain), and consequently, the lowest cost of feed per unit of gain in weight. In other words, replacing fresh vines with chicken manure-fermented vines will lead to improved growth, but the extent of the growth depends on the combination of the base feed.

It also became clear that, based on the current market price of pigs, farmers would suffer a loss by feeding fresh vines and would make only a small profit by feeding with non-chicken-manure treated vines. The chicken manure treatment would provide farmers with a substantial profit, as well as the highest weight gain.

## Conclusions

Fermentation is a simple process that requires little investment or equipment. Chicken manure is readily available and cheap especially since only small quantities are required. The only equipment needed is a set of scales for weighing the ingredients, and bags for storing the ferment. The chicken manure treatment would provide farmers with a substantial profit, as well as the highest weight gain.

The fermentation method can easily be adopted, or even adapted, by farmers. During the meeting held soon after the trial, forty women showed great interest and enthusiastically copied the suggested method. Along with the profitability, these women considered the labour-saving and storage potential very significant.

These results may be disseminated and experimented with widely among pig farmers in north and central Vietnam where sweet potato vines are an important component of the pig feed. The Department of Agricultural and Rural Development of the district and organisations at community level should be encouraged to disseminate the information and demonstrate the processing and feeding method to farmers. Instead of encouraging the use of commercial protein supplement, which is mainly imported, favourable conditions should be created for farmers to experiment and use locally available materials to increase the necessary protein for pig feed.

## References

1. Anh, M.T.P., 2000. Current status and prospective planning upon agricultural development in Hanoi. Paper presented at the "CGIAR Strategic Initiative on Urban and Peri-urban Action Plan" development workshop for South East Asia pilot site, Hanoi, Vietnam. 6-9 June 2000. Hanoi, Vietnam. CIP-Lima, Peru.
2. Gerpacio, A.L., Aglibut, F.B., Javier, T.R., Gloria, L.A. and Castillo L.S., 1967. Digestibility and nitrogen balance studies on rice straw and camote vine leaf silage of sheep. Philippine Agriculturist. Vol. 51 (3): 185-195.
3. Pezo, D., Li-Pun, H.H. and Devendra C., 2000. Crop-animal system in Southeast Asia: ILRI research agenda. Paper presented at the "CGIAR Strategic Initiative on Urban and Peri-urban Action Plan" development workshop for South East Asia pilot site, Hanoi, Vietnam. 6-9 June 2000. Hanoi, Vietnam. CIP-Lima, Peru.
4. Tinh, N.T., 2000. Pig-raising in peri-urban Hanoi. Paper presented at the "CGIAR Strategic Initiative on Urban and Peri-urban Action Plan" development workshop for South East Asia pilot site, Hanoi, Vietnam. 6-9 June 2000. Hanoi, Vietnam. CIP-Lima, Peru.
5. Woolfe, J.A., 1992. Sweet Potato: An Untapped Food Resource. New York, NY: Cambridge

University Press.



Oui