



A Lao farmer chopping stylo for the family's pigs.

PHOTO: BRAD COLLIS

# Forage crops ease the burden of finding pig feed

Growing legumes as feed for village pig production is having a big impact on the livelihoods of rural families in Laos

BY ROBIN TAYLOR

**K**eeping a 'piggy bank' is serious business for farmers in remote mountainous northern regions of Laos. Owning a few pigs that can be sold is a way of building savings for people who do not have access to banks or other methods of accumulating money, as well as being a source of regular income.

In traditional systems, farmers feed scavenging pigs on a diet of starchy foods supplemented with leaves collected from the forests. But gradually, forests are

becoming depleted through overuse, leaving women and children to spend hours each day searching for greenery to feed their pigs.

A typical family from a remote village 60 kilometres from the provincial capital, Luang Prabang, is Sone, her husband Onkeo and their children. They normally raise four or five sows at a time and sell the piglets. Those they cannot sell they fatten in pens until the pigs reach 60 kilograms and can be sold for slaughter. Under the

traditional system, Sone and her children spent several hours each day collecting palatable green plants from the forest while their sows roamed in the village scavenging for food. Sone would cook these leaves with rice, bran, cassava and maize to feed the pigs at night. On this diet, it took pigs in fattening pens 10 months to reach the saleable weight of 60 kg.

However, research by the International Center for Tropical Agriculture (CIAT) to promote high-protein legumes and grasses for cattle, buffalo and goats has had an unexpected spin-off for village pig farmers like Sone.

"Innovative farmers fed these forages not only to cattle and buffalo but also evaluated them as a pig feed," says Dr Werner Stür, leader of an ACIAR project looking at forage legumes for pigs.

The legume that farmers have embraced is stylo 184 (*Stylosanthes guianensis*). Stylo is rich in protein, grows well in poor soil and can be fed directly to pigs without being cooked (unlike forest plants). Most importantly, stylo grows well in the early part of the wet season when rice bran, maize and cassava are in short supply. The positive experience with stylo paved the way for a new project, which is introducing more legumes and helping to spread the practice more widely.

This project, being carried out by the Lao National Agriculture and Forestry Research Institute (NAFRI) and CIAT with support from ACIAR, has taken farmer innovation to heart and is evaluating best-bet legumes for their feeding value for pigs. The team is also working with other non-government organisations (NGOs) and development projects to scale-up use of stylo 184 in smallholder pig production systems.

Eighteen months into the project, researchers studying existing pig systems in northern Laos identified different options available to farmers and the problems they are encountering.

Three main feeding systems were found in use: free scavenging (in very remote areas), semi-confined (where pigs are kept in pens during the planting season) and penned (where they are confined the whole time).

Research fellow on the project, Phonpaseuth Phengsavanh, says the main problems identified are slow growth rate, high mortality from disease and the large amount of time spent collecting and preparing feed.

The researchers are collecting samples of traditional local feeds, such as banana stems, leafy vegetables and native tubers, and sending them to the Queensland Department of Primary Industries and Fisheries (QDPI&F) for nutritional analysis. The QDPI&F is also testing the digestibility of stylo.

“So far, results show that some of the local green feed is quite high in quality but the problem could be that the amount of green feed is insufficient,” Mr Phengsavanh says. While green feed provides much-needed protein for pig growth, feeding too little results in poor growth rates. Stylo 184 provides an alternative.

Sone and Onkeo joined a small group of farmers who started growing stylo 184 as a supplement for their pigs. When pigs were fed a few handfuls of fresh stylo each day they put on weight much faster and could be sold in six rather than 10 months. The other benefits were that scarce forest resources were not being used and it took the women less than half an hour each day to collect the stylo leaves grown nearby, allowing them more time to tend their upland rice fields.

With a readily available source of green feed, the family started to confine their sows

in pens instead of letting them scavenge around the village. They were able to manage more animals and are now raising up to 14 pigs at a time. Pig production is providing more than half the family's income.

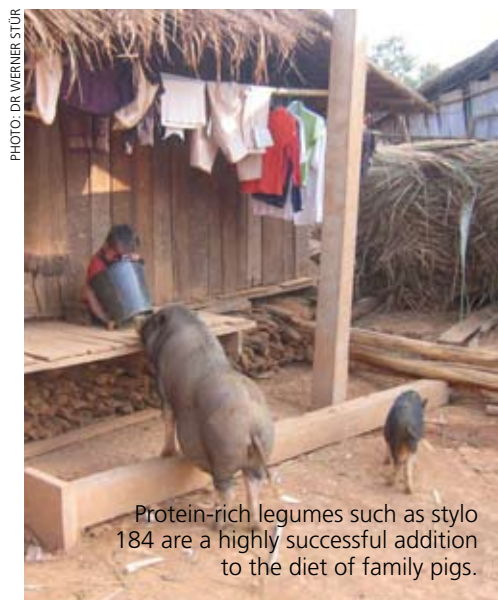
As well as feeding fresh stylo, some farmers are feeding stylo leaf meal or dried leaves and, as part of the project, the NAFRI team is carrying out village learning activities to compare growth rates between pigs fed on fresh stylo 184 and those fed on leaf meal.

The project has successfully involved women, who are usually responsible for rearing pigs, even though it is traditionally men who attend meetings.

“Whenever we talk to village committees, we say we want women to come to the meetings because they are the ones who are looking after pig production,” Mr Phengsavanh says. “In almost all households it is the women who often spend up to two hours collecting green feed each day. With stylo, women no longer need to collect native greenery and spend only 15 to 30 minutes a day cutting stylo and chopping it ready for pigs to eat. This labour-saving has been a major reason for adoption of stylo 184.”

Last year, the project team introduced 17 new legume varieties for farmers to evaluate and are now waiting on the farmer reports of these species.

So far the project is working with about 400 farmers from 30 villages in two provinces but, through collaboration with



Protein-rich legumes such as stylo 184 are a highly successful addition to the diet of family pigs.



PARTNER COUNTRY: Laos

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NGOs and development projects, the work on forage legumes is reaching about 1200 farmers.

As well as exploring different feed options, the researchers are studying the growth potential of local pigs by feeding them on a commercial diet at the research station. This trial shows that the local breed performs well when they are well fed. Pigs on the commercial diet gained an average of 500 to 600 grams a day compared with the average village production of 100 g a day. Fed stylo 184, pigs gain 200 to 250 g daily for virtually no extra cost. ■



Lao girl collecting forage for the family's pigs.