

## Water spinach (*Ipomoea aquatica*) as a feed resource for growing rabbits

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### Introduction

Rabbits are herbivores which efficiently convert forages to food. The whole point of sustainable systems of meat production is to convert plant proteins into animal protein of superior nutritive value for people, especially pregnant women and children (Waterlow, 1998). According to Lebas *et al.* (1997), rabbits in efficient production systems can turn 20 percent of the proteins they eat into edible meat. Comparable figures for other species were quoted as 22 to 23 percent for broiler chickens, 16 to 18 percent for pigs and 8 to 12 percent for beef. Rabbits can also utilize the available proteins in cellulose-rich plants, whereas it is not economical to feed these to chickens and turkeys, the only animals with higher energy and protein efficiency. The traditional grain and soybean meals fed to these domestic poultry put them in direct competition with humans for food. For countries with no cereal surpluses, rabbit meat production is thus especially interesting (Lebas *et al.*, 1997).

In the view of the worldwide demand for additional sources of food, the exploitation of plants of low economic importance would be a step towards better resource utilization (Telek, 1983). This is in line with the strategy to achieve sustainable animal production systems by matching them with the locally available feed resources (Preston and Sansoucy, 1987).

Water spinach is used traditionally in Cambodia as a vegetable for consumption by people and animals. It has a short growth period and is resistant to common insect pests. However, there appears to be no information in the literature on its response to fertilizer especially fertilizer of organic origin as is produced by the anaerobic digestion of livestock manure (Kean Sophea and Preston, 2001). It does not appear to contain anti-nutritional compounds and has been used successfully for growing pigs as the only source of supplementary protein in a diet based on broken rice (Ly, 2002; Chhay Ty and Preston, 2005). Prak Kea *et al.* (2003) reported a linear increase in growth rates in pigs fed water spinach, palm oil and broken rice when up to 6% fish meal replaced equivalent amounts of water spinach, which they attributed to an improved amino acid balance, especially in terms of the sulphur-rich amino acids.

Recent research has explored the feasibility of using water spinach in combination with broken rice as a readily digestible feed for growing rabbits (Miech Phalla, 2002, unpublished data; Hongthong Phimmasan *et al.*, 2004; Vo Thi Tuyet Nga, 2004). However, most of these reports are of a preliminary nature.

### Objectives

- To confirm the observations of Hongthong Phimmasan *et al.* (2004), concerning the nutritive value of water spinach for growing rabbits, but using the direct method for determining digestibility.
- To determine performance traits of young rabbits fed water spinach *ad libitum* and graded levels of broken rice.

- To measure the response of water spinach to fertilization with biodigester effluent and to study the effect of different offer levels of water spinach on performance traits and digestibility coefficient of rabbits.