



# **Rau Dua (*Ludwigia adscendens*) and Rau Dua as components of recycling systems in pig production in the Mekong Delta of VN**

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**Rau Dua (*Ludwigia adscendens*)**



# INTRODUCTION

Farm activities in the Mekong Delta: mainly developed of integrated farming systems: rice field, crops, fruit garden, fishery and livestock components ⇒ recycling organic residue need to be managed for more production.

Livestock, especially '**Pig**' production is an important income by using agricultural rice by-products and vegetables effectively ⇒ ↑ pig performance, economic benefit and environmental balance by the recycling model.

# INTRODUCTION

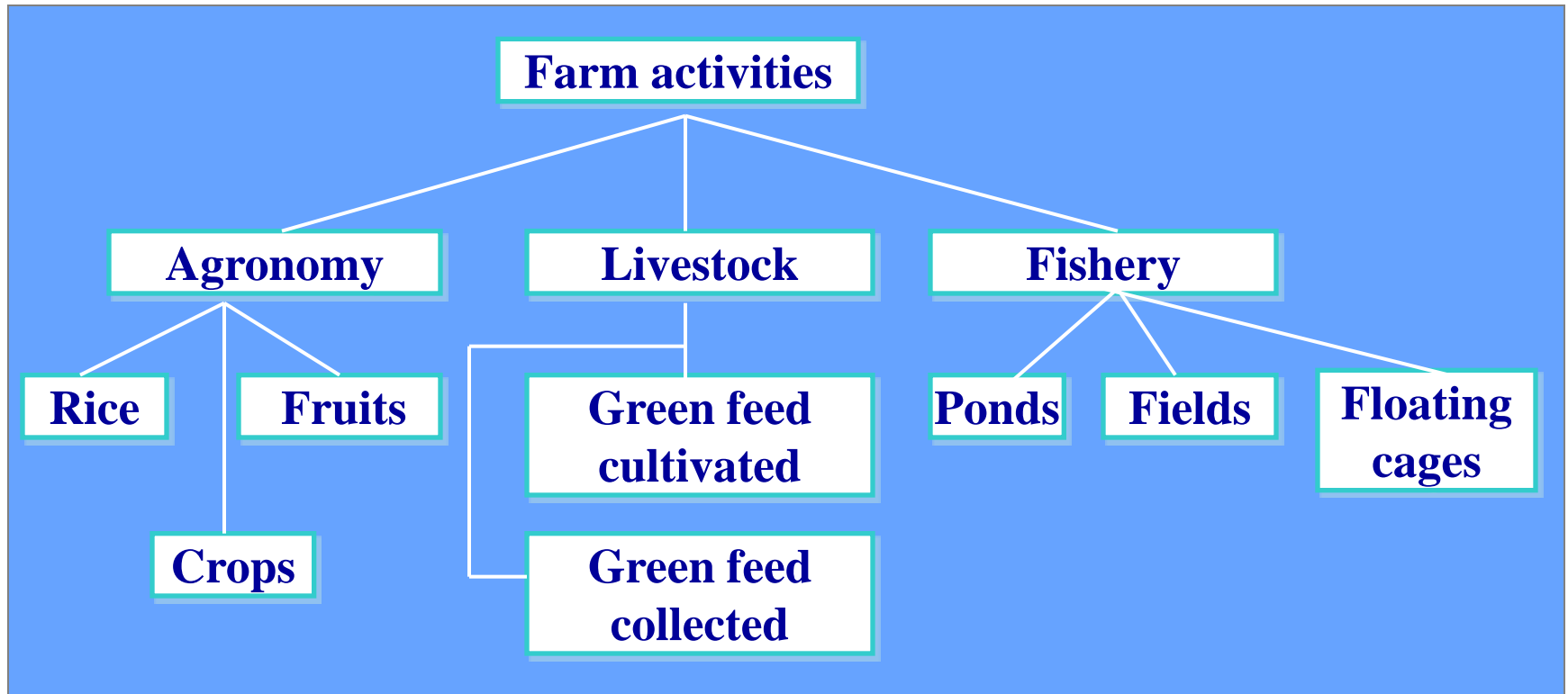
## *Water plants*

Water spinach, water hyacinth and others as valuable plants for decontaminating water charge with organic effluent, have researched and applied in pig diets  $\Rightarrow$   $\uparrow$  benefit of income and well fare for farms and/or animals.

## **'RAU DUA' (*Ludwigia adscendens*)**

Vegetable herb, creeping and floating on water surface as natural resources. Its biomass yield (1.9 tons DM /ha in turn) by cultivating with pig manure compost fertilizer. And its nutritional values in DM (%): CP (23.2), EE (4.9), CF (6.2) and ash (10.7); Lys (0.93), Thr (0.91), Met (0.61). Fatty acids (% total lipid): C18:2= 25.9, C18:3= 29.9 (Men et al 2007, 2008)

# Example of the Application of Livelihood in the Mekong Delta



# OBJECTIVES

\* **'Rau Dua' (*Ludwigia adscendens*)** can grow well in water areas fertilized by pig manure **compost** or **biodigester** effluent & produce a high fresh yield in a recycling model for small holders

\* **'Rau Dua'** can replace a part of **protein supplement** in a diet for fattening pigs without affecting the pig performance and with benefit to farmers

# MATERIALS AND METHODS

**RD (*Ludwigia adscendens*)** cultivated observation on 4 families (on 2 farms RD fertilized by pig manure **compost** & 2 farms on **biodigester** effluent) 120 m<sup>2</sup>/farm ⇒ 4 lots (2 kinds of RD *Com* & *Xanh*) & 2 first cuttings (40days/turn)

☞ Fresh biomass yield: kg/m<sup>2</sup> (3 frames/lot)  
tonnes/ha

☞ Sampled and analyzed (Chemical components):  
Dry matter (DM), crude protein (CP), crude fibre (CF), ether extraction (EE) and ash (AOAC 2000)

# MATERIALS AND METHODS

## Feeding trial:

**Pigs:** 24 growing pigs (Yorkshire x Baxuyen), 6 pigs/farm (aver. LW of 57kg)

## Diets:

**RD0:** protein sup. content 100/RD 0

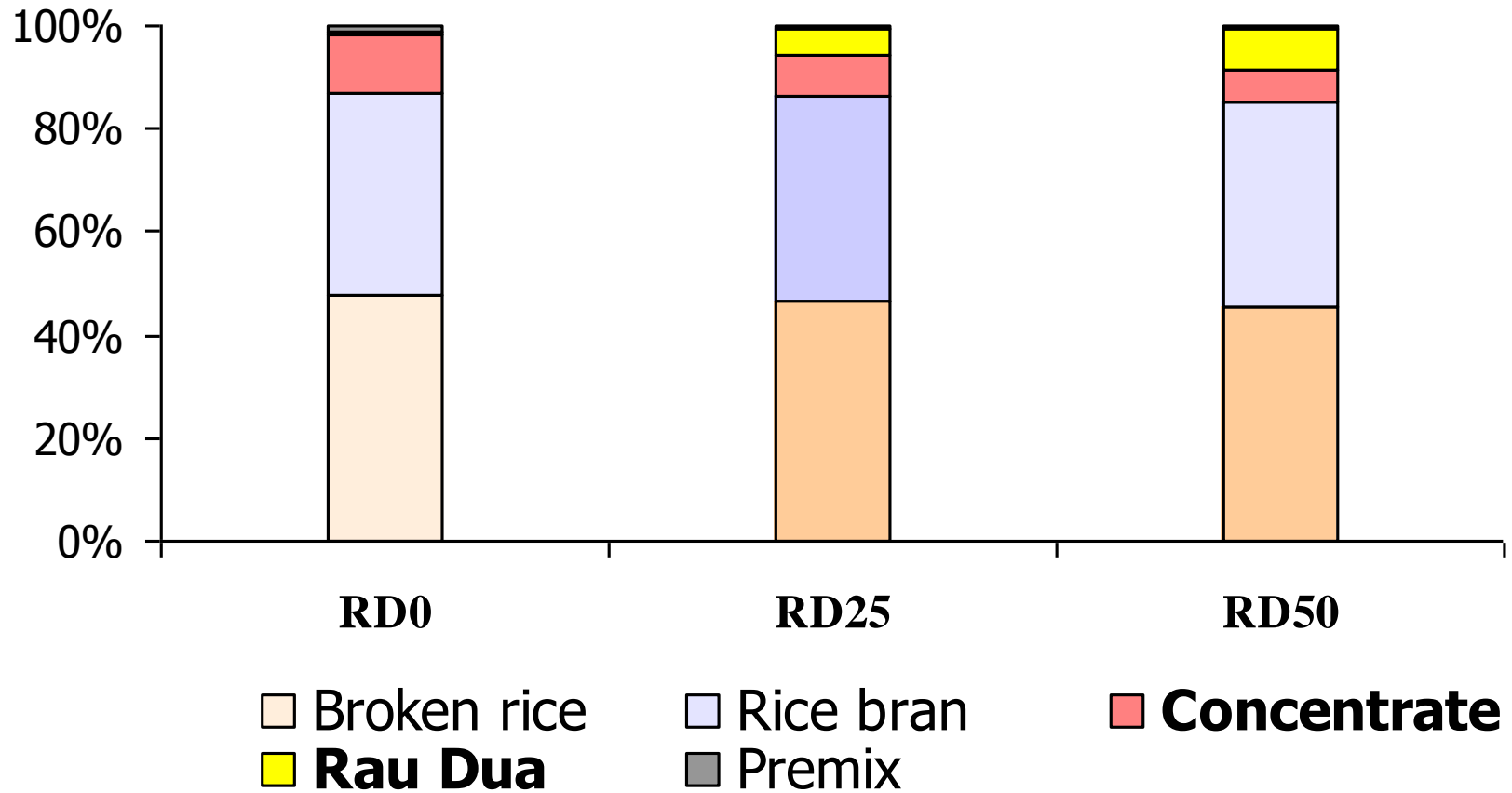
**RD25:** - 75/RD 25

**RD50:** - 50/RD 50

DM Feed intake: 3.5 % of LW



# Diets for fattening pigs





RD *Com* - Biogas



RD *Com* - Compost



RD *Xanh* - Biogas



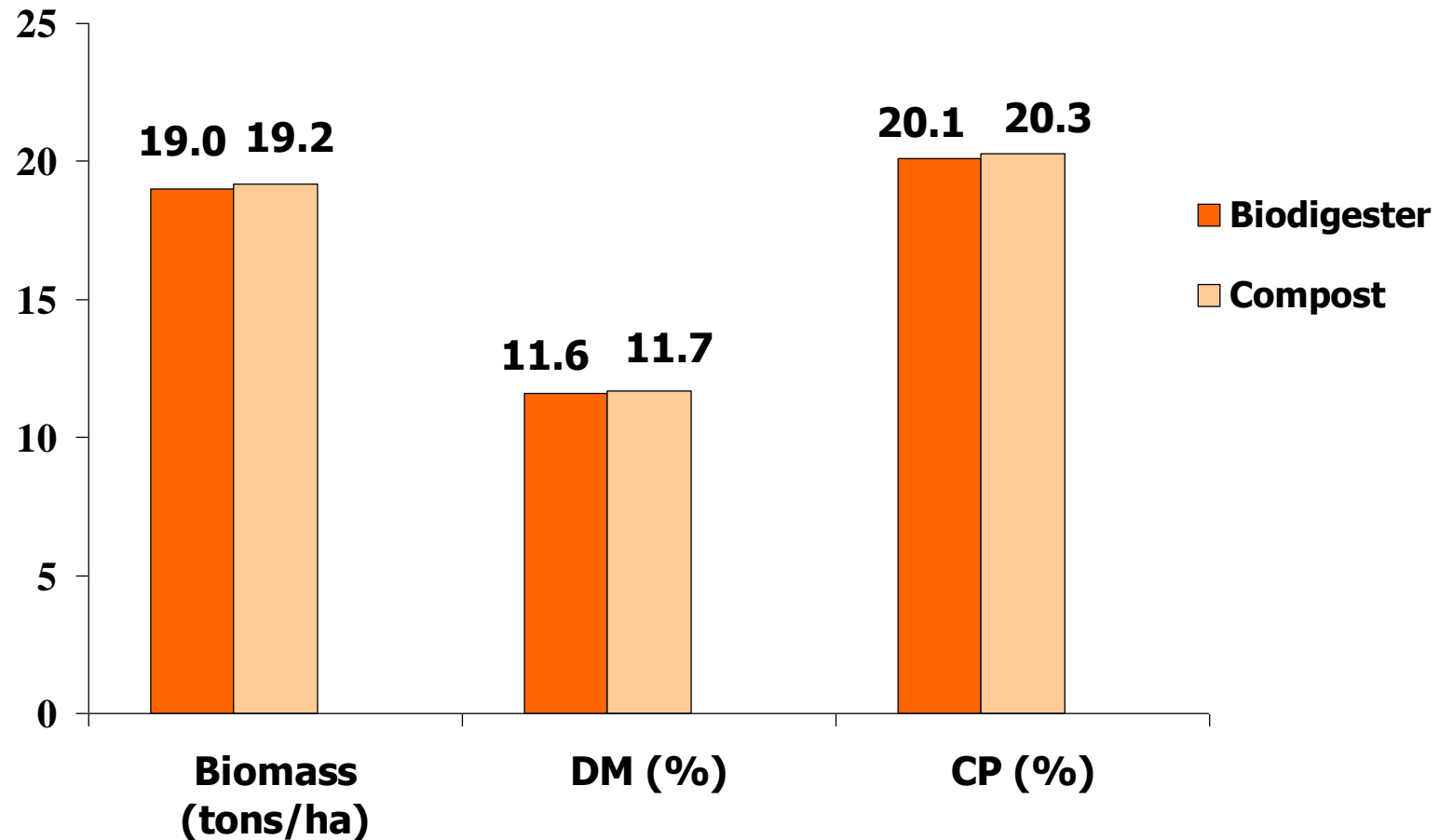
RD *Xanh* - Compost



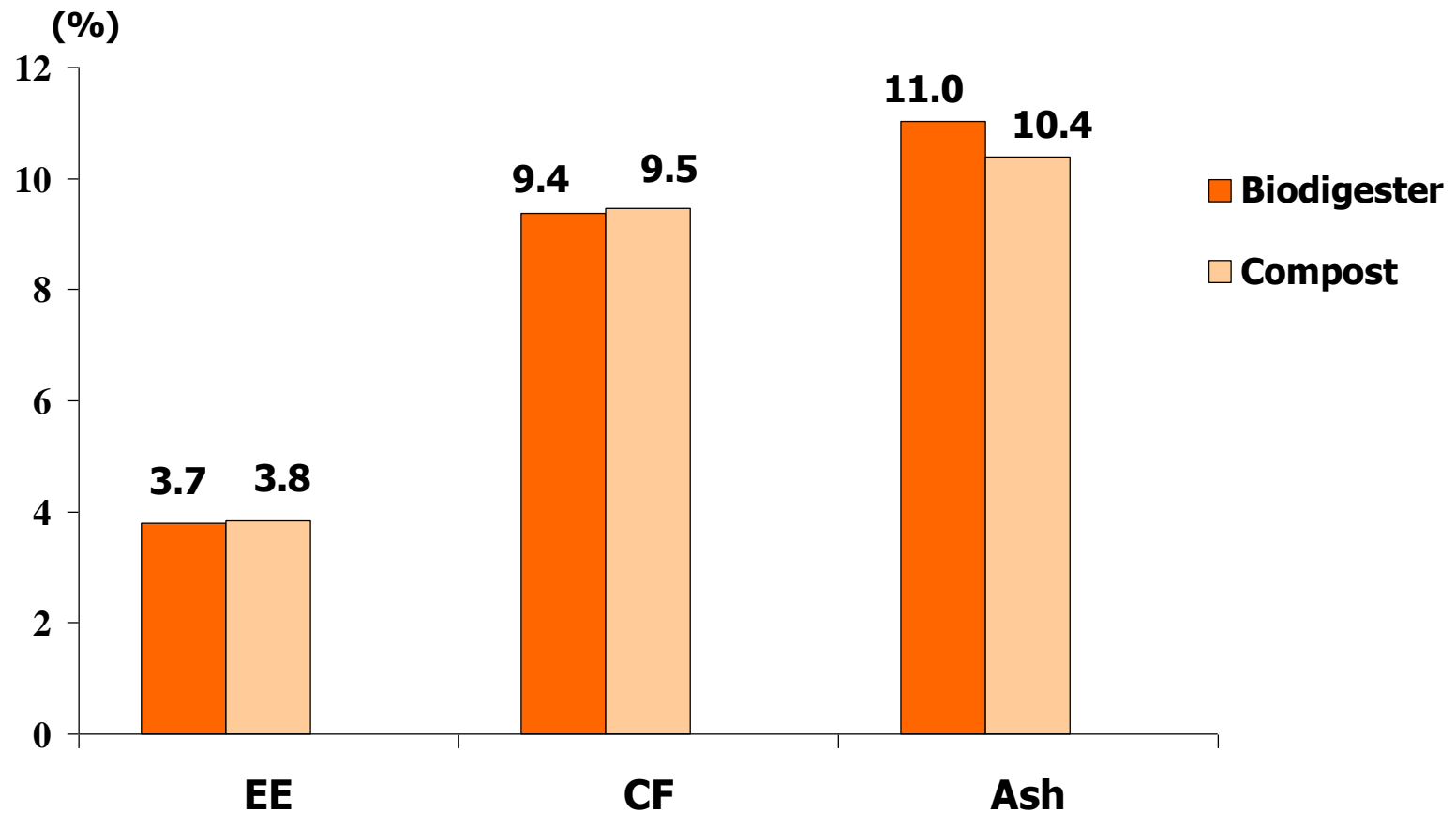
## Sample collection



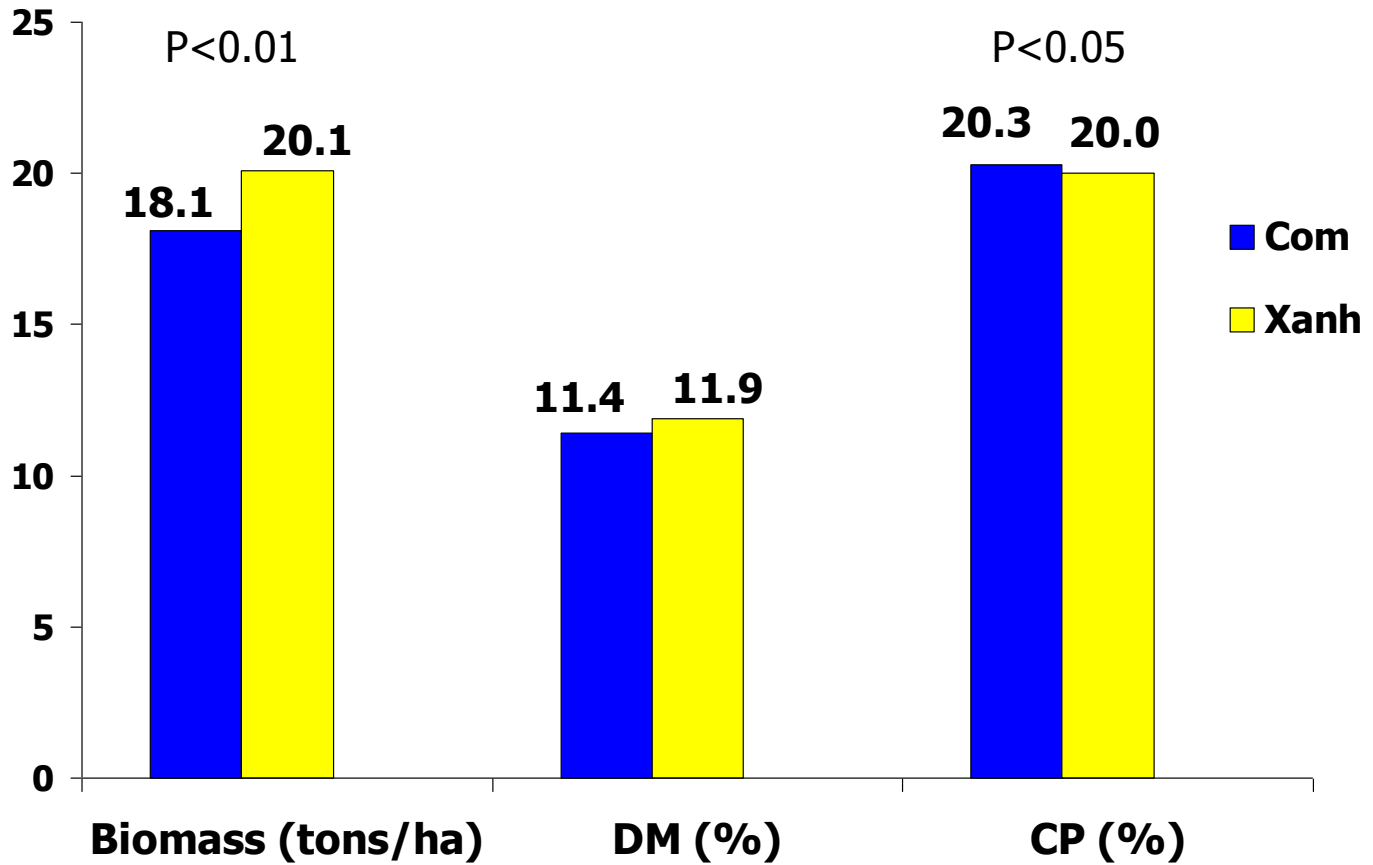
# The biomass yield, DM and CP contents of *Ludwigia adscendens* fertilized by using biodigester or compost



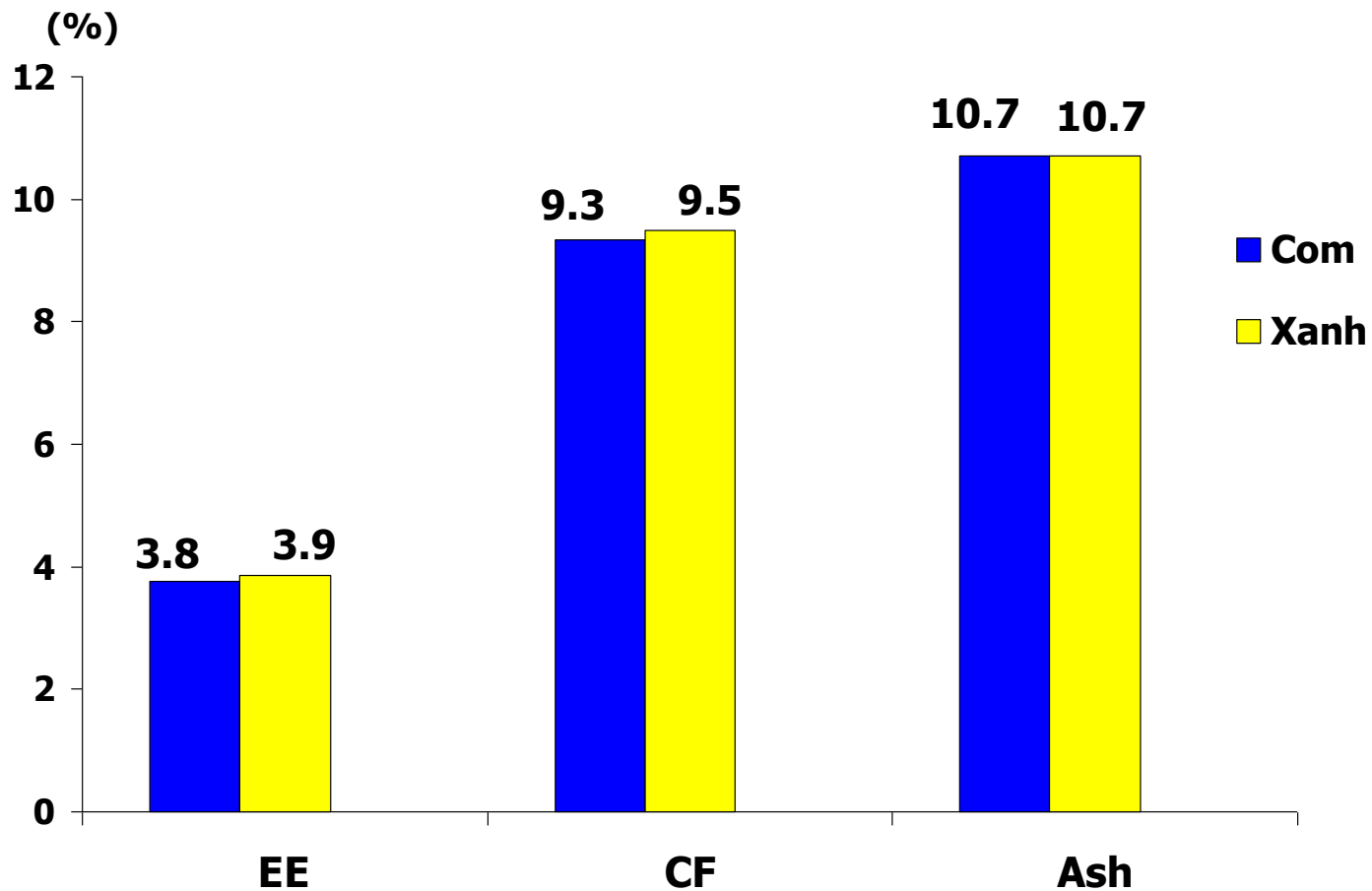
# The EE, CF and Ash contents of *Ludwigia adscendens* fertilized by using biodigester or compost



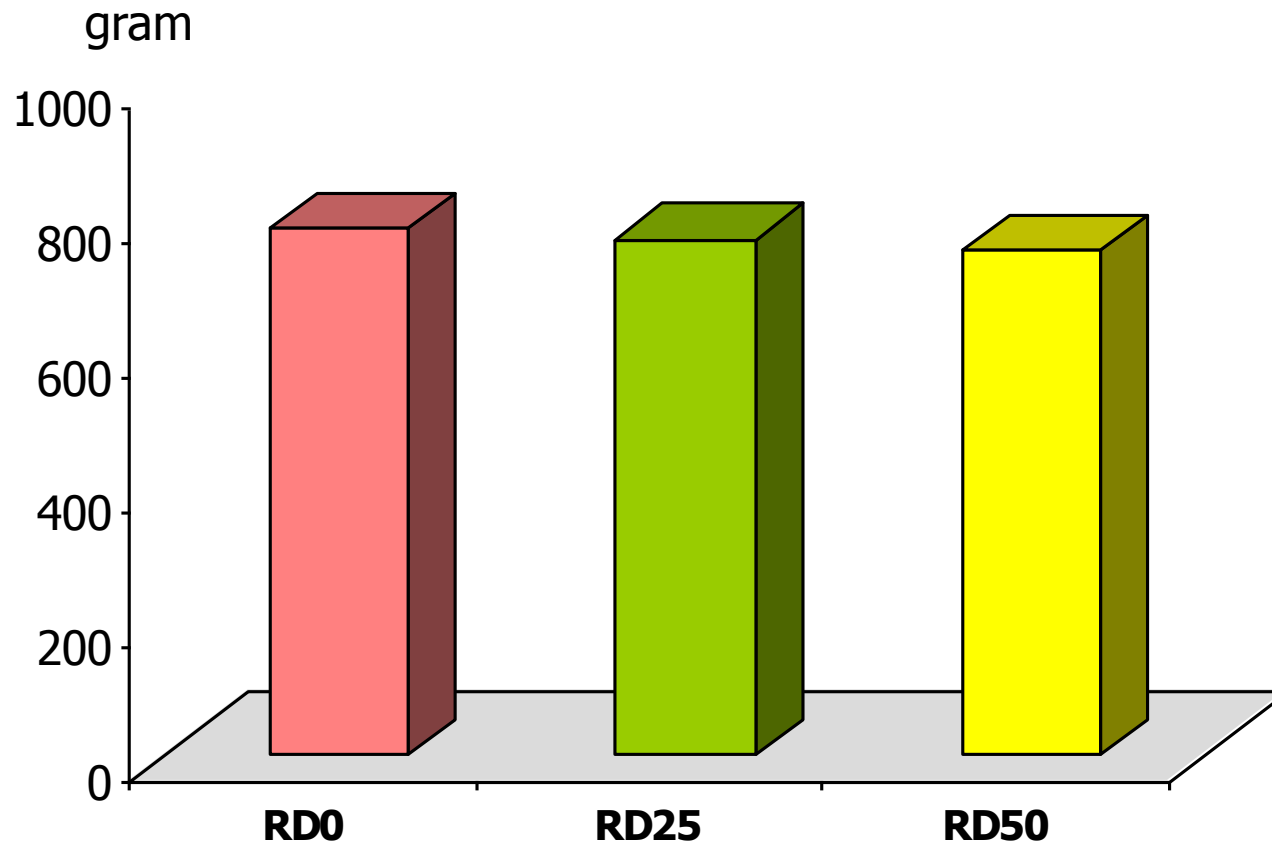
# The biomass yield, DM and CP contents of two kinds *Ludwigia adscendens* (RD Com and RD Xanh)



# The EE, CF and Ash contents of two kinds *Ludwigia adscendens* (RD Com and RD Xanh)

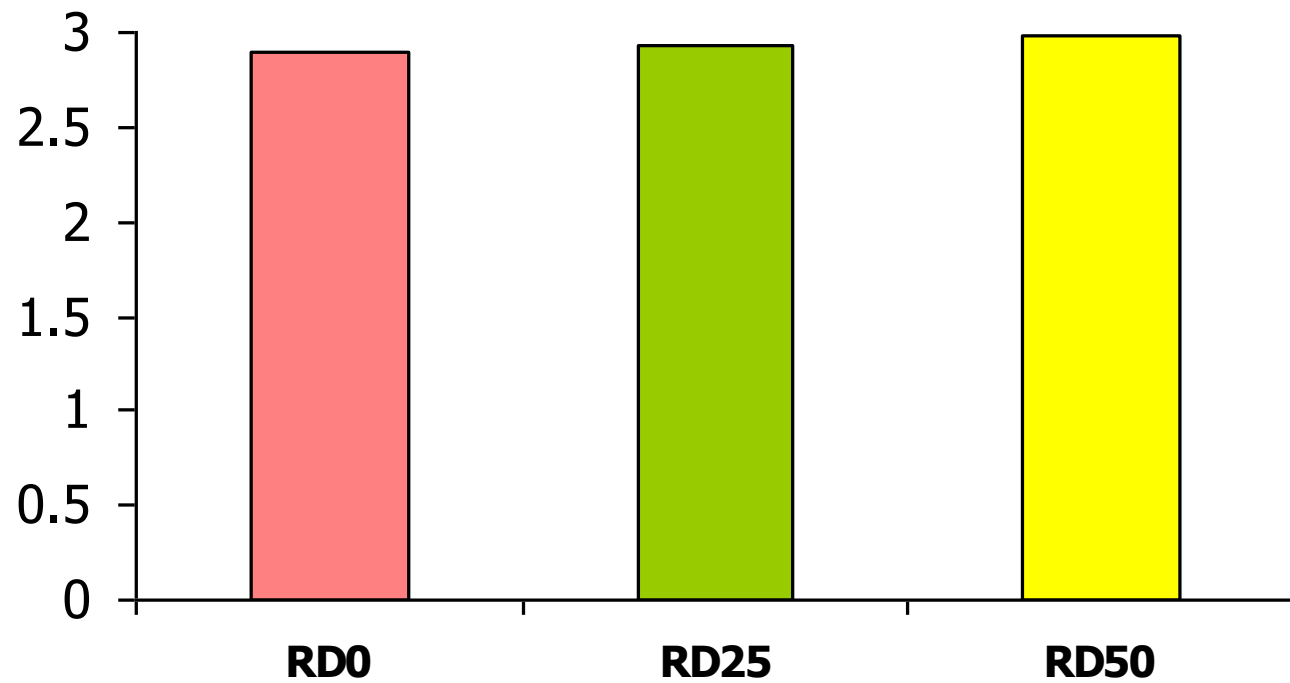


# Effect of dietary treatments on Daily Live Weight Gain

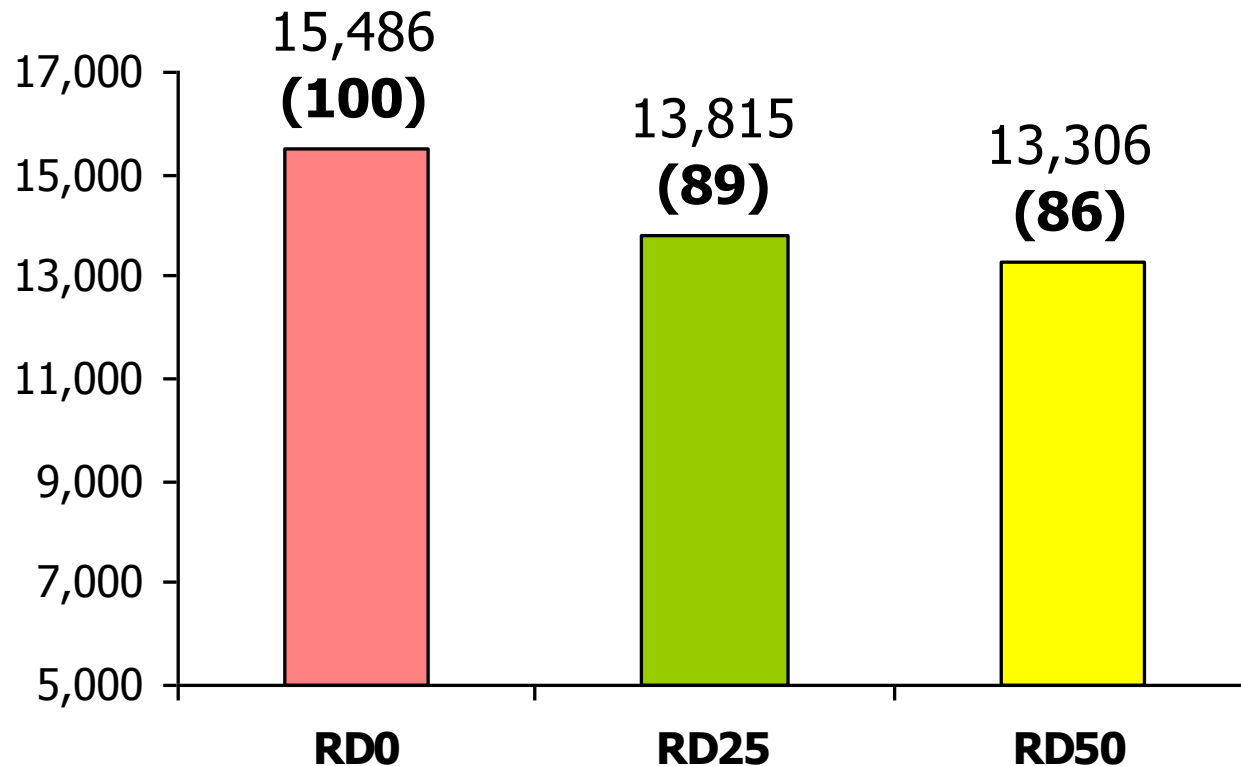




# Effect of dietary treatments on Feed Conversion Ratio



# Feed cost/kg weight gain (VND)



# CONCLUSION

\* Recycling organic waste & effluent can grow well the natural resources in farms

\* **RD (*Ludwigia adscendens*)** } can be applied  
(Natural water plants) } & conserved

As supplement sources  $\Rightarrow$  production of pig meat in the integrated farming systems

