Utilization of Vegetable wastes as rabbit feed to reduce pollution

Raksina Timkhlai*, Supharoek Nakkitset, Choke Mikled*, Wichit Sonloi and Khanitta Tikam

Royal Project Foundation, Chiang Mai, Thailand

***Department of Animal Science, Faculty of Agriculture, Chiang Mai University, Chiang Mai, Thailand**

Introduction

- In the upland areas under the Royal Project Foundation the farmers have been cultivated various kind of vegetables.
- Vegetable residues from packing house around 4 – 5 tons/days
- It may be used as animal feed to solve this problem

Introduction cont.

- Rabbit raising is an important activity for farmers in the mountainous area in the northern part of Thailand
- They could probably produce rabbit meat with low production costs
- Rabbits can be fed with vegetable residues as roughages

Introduction cont.

- Protein block (PB) already used as feed supplement for cattle it may be useful for rabbit
- Paddy rice is available in the upland household and can be fed to rabbit to reduce concentrate

Objective

To evaluate the effect of feeding Cabbage and Head Lettuce residues compared to Napier grass as a foliages

and the commercial concentrate compared with Protein block I and II and Paddy rice

as a feed supplement on the growth performance and feed intake in growing rabbits.

Materials and Methods

Animals and Management

The animals used in this experiment were 60 weaned crossbred (NewZeland White x Native bred) rabbits aged between 6 -7 weeks.

Materials and Methods

Experimental design

The experimental design was a factorial in CRD with 2 factors, 3 foliages and 4 feed supplements. The experiment had 12 treatments and 5 replicates.

Feed and Feeding system

Cabbage residue

Head Lettuce residue

Napier grass

Commercial concentrate

Paddy rice

Protein Block I and II


KILOGRAM
TRADE MARK

Data Collection and analysis

•The rabbits were weight at the beginning of the experiment and then every 7 days, always in the morning before feeding.

• Feed offered and refused was weight every day to calculate feed intake and determine feed conversion ratio from DM intake.

• Feed and feed residues were sampled for analyzed for DM, Ash, CP, ether extract (EE) and crude fiber (CF) according to AOAC (2000).

Results

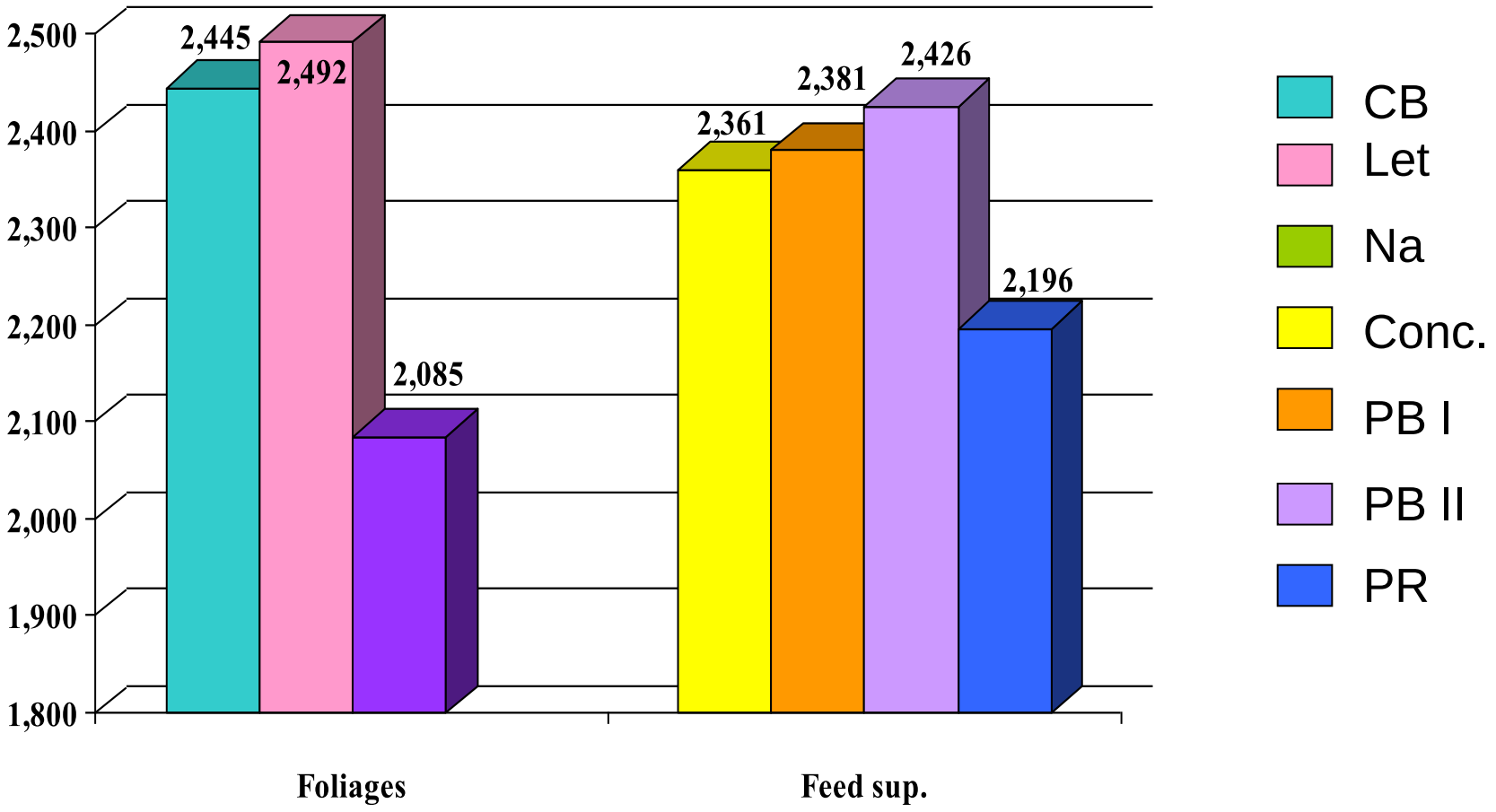
Table 1 Chemical composition of foliages

Chemical composition (%)	Foliages		
	Cabbage Residues (CB)	Head Lettuce Residues (Let)	Napier Grass (Na)
Dry Matter	9.22	5.06	16.12
Crude Protein	22.08	25.19	11.07
Crude Fiber	23.87	20.19	28.95
Ash	10.78	14.59	14.99
Ether Extract	4.28	6.40	4.02

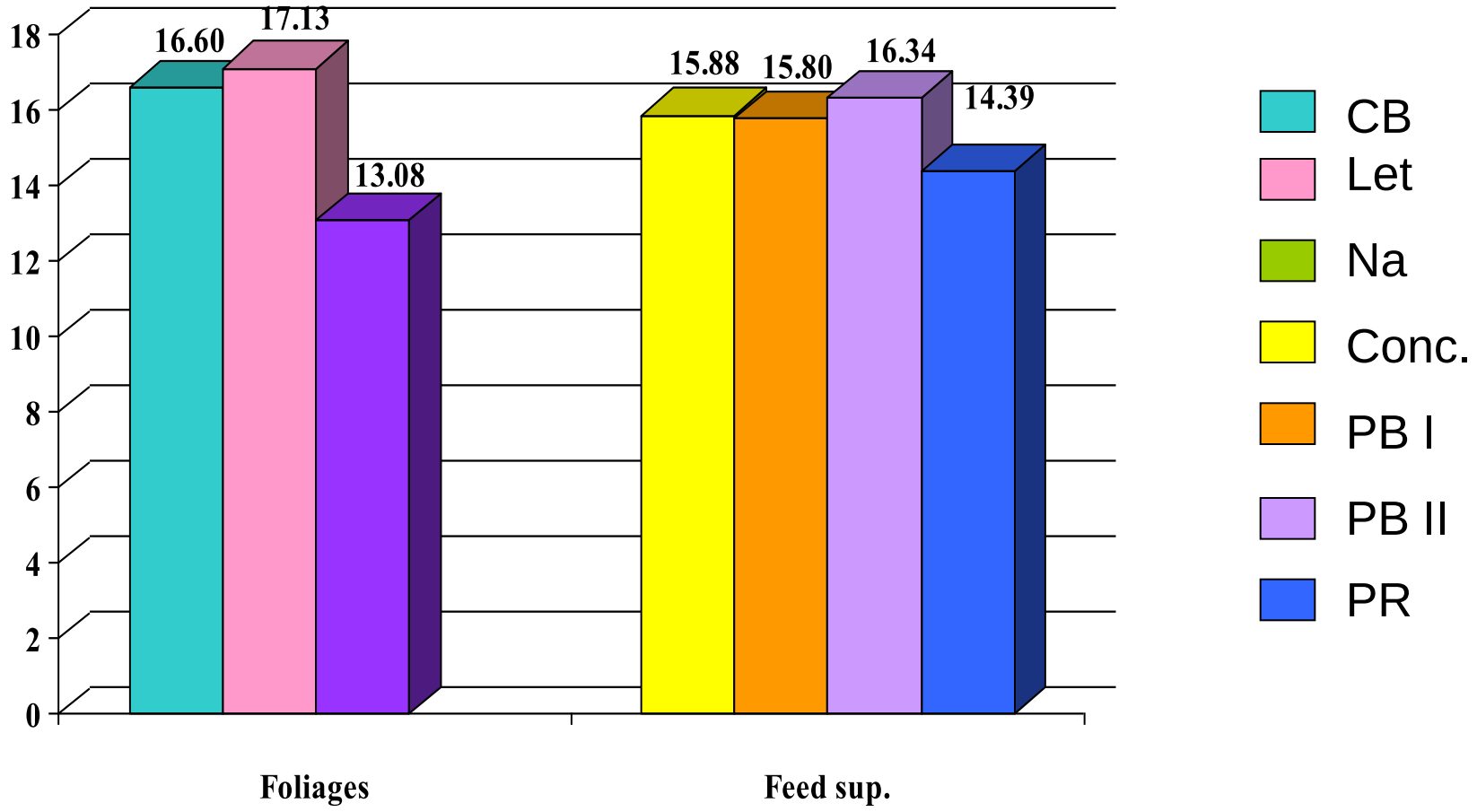
Table 2 Chemical composition of feed supplements

Chemical composition (%)	Feed supplements			
	Concentrate (Conc.)	Paddy rice (PR)	Protein Block I (PBI)	Protein Block II (PBII)
Dry Matter	88.63	86.64	83.03	82.96
Crude Protein	17.60	7.86	18.38	16.31
Crude Fiber	4.79	10.06	3.79	6.74
Ash	9.48	5.00	24.64	24.06
Ether Extract	3.47	3.11	8.78	9.57

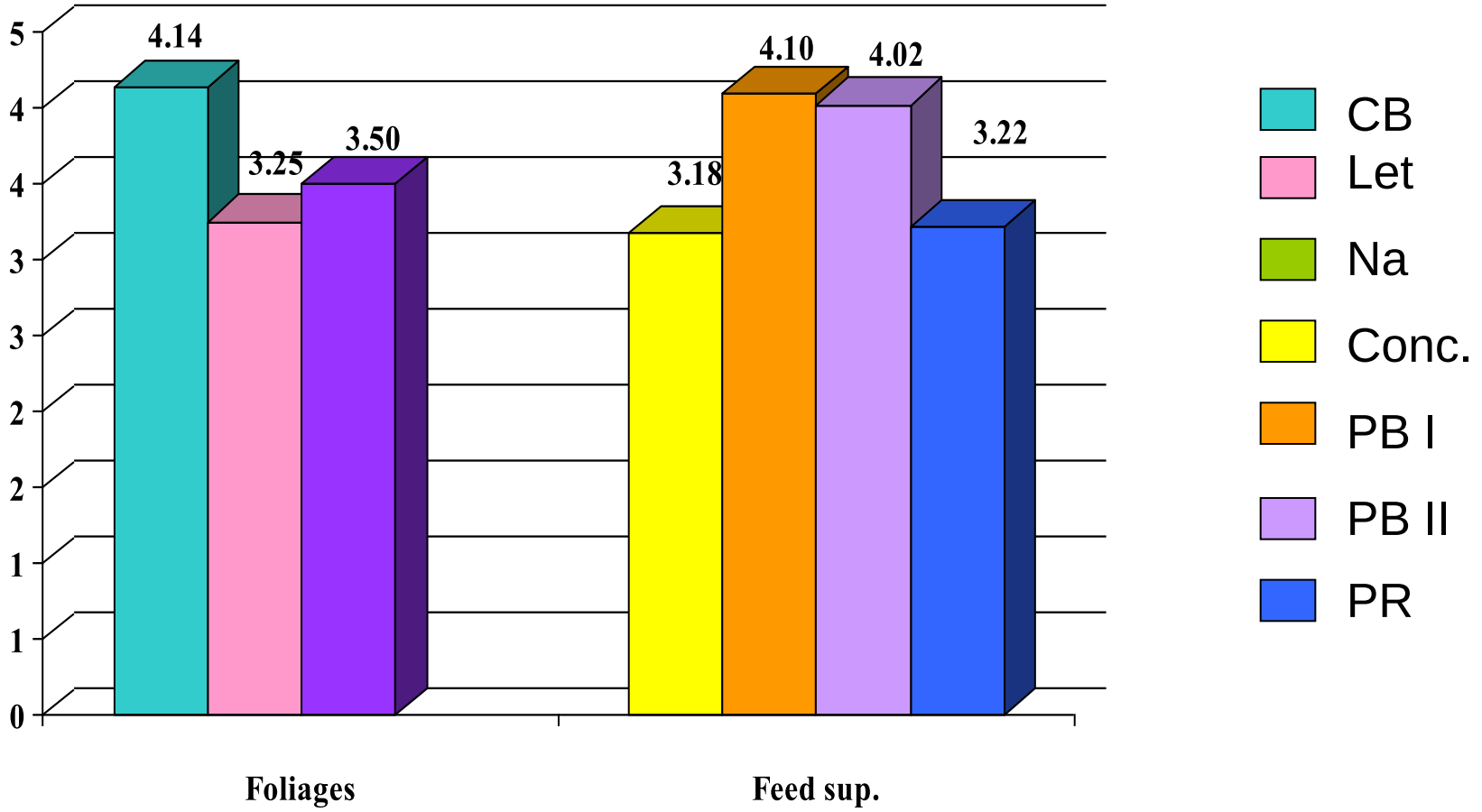
Effect of foliage and feed supplement on Final weight (g)



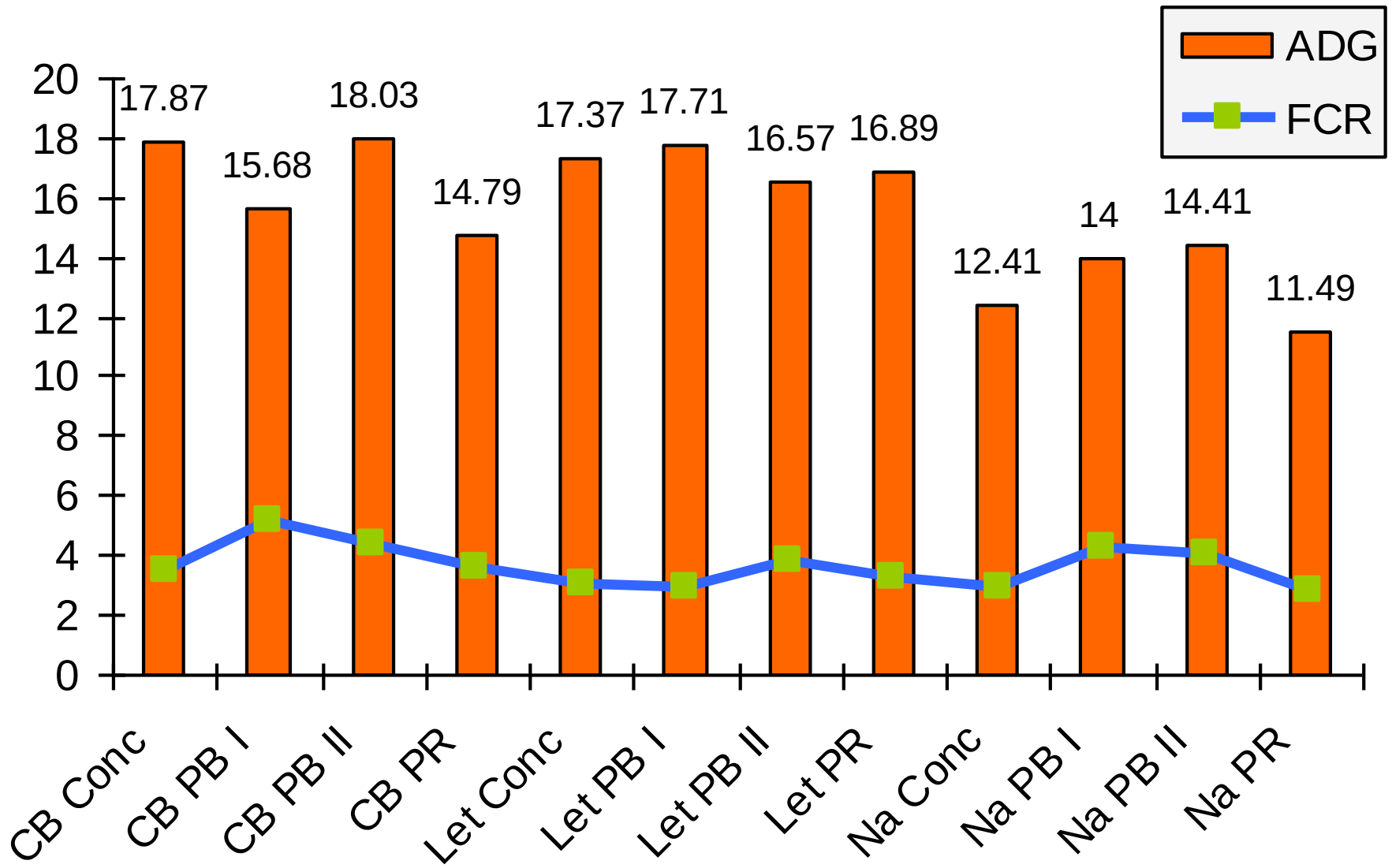
Effect of foliage and feed supplement on Average Daily Gain



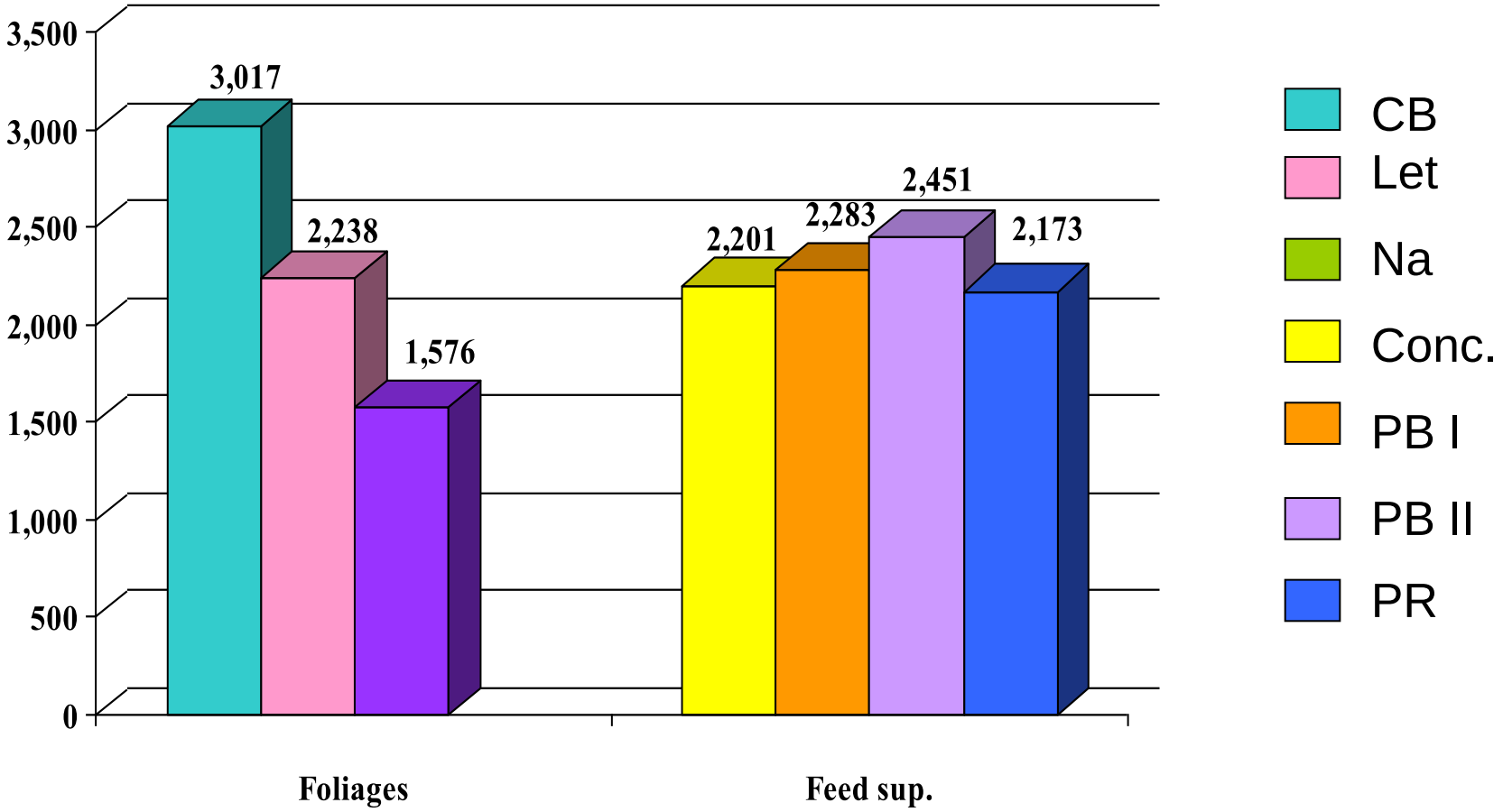
Effect of foliage and feed supplement on FCR



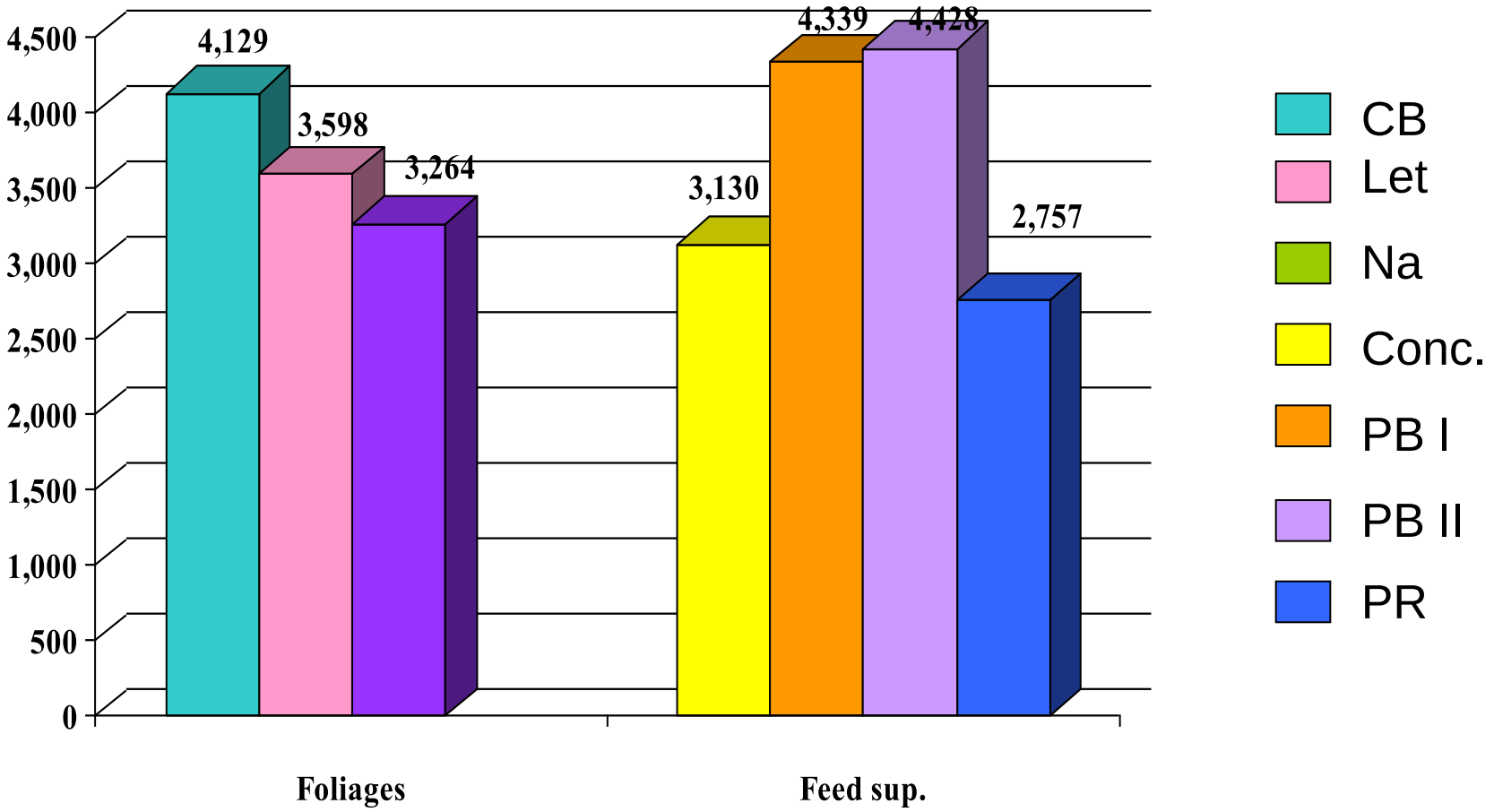
Effect of interaction between foliages and feed supplement on ADG and FCR



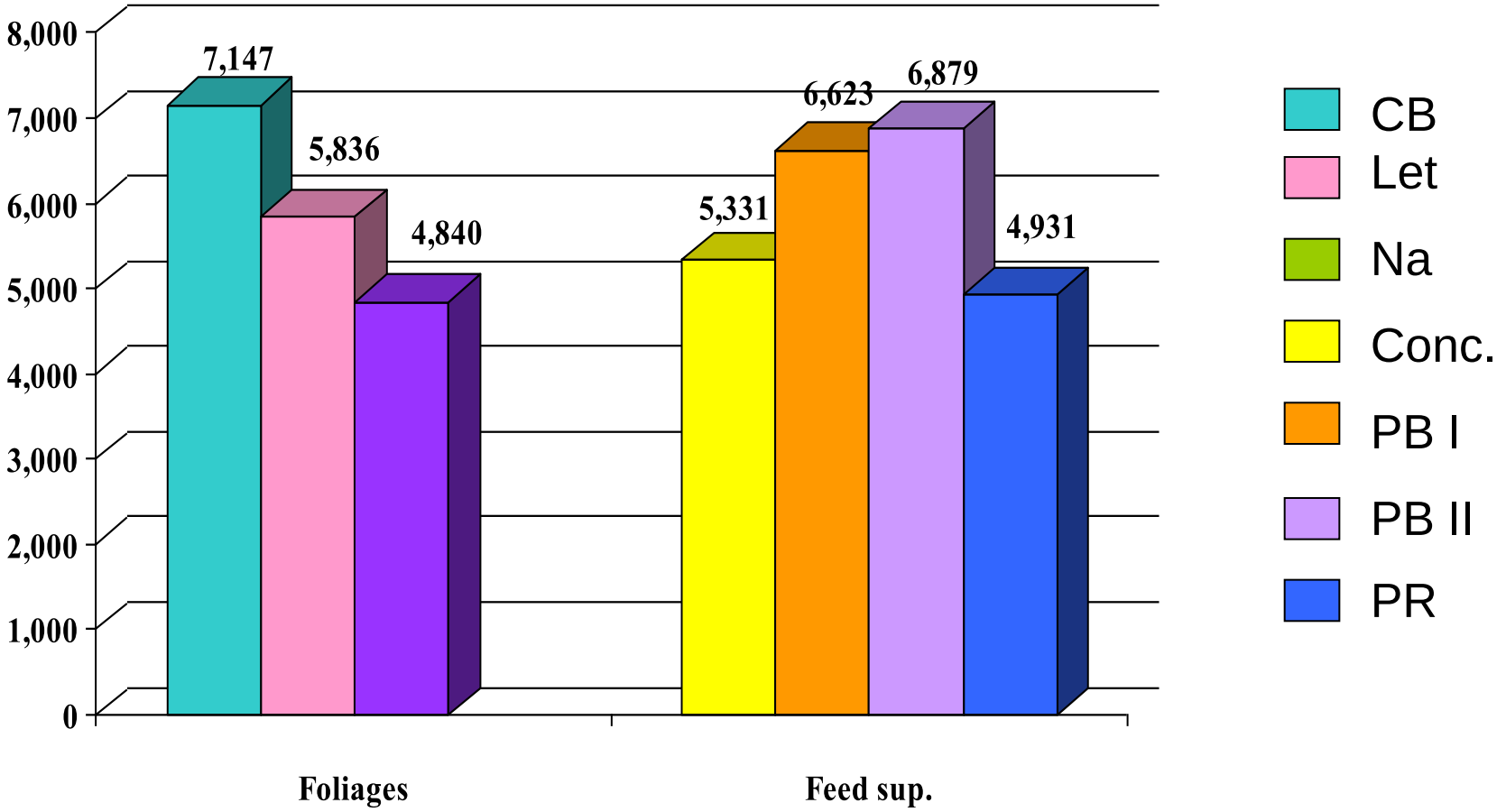
Effect of foliage and feed supplement on Foliages intake (g)



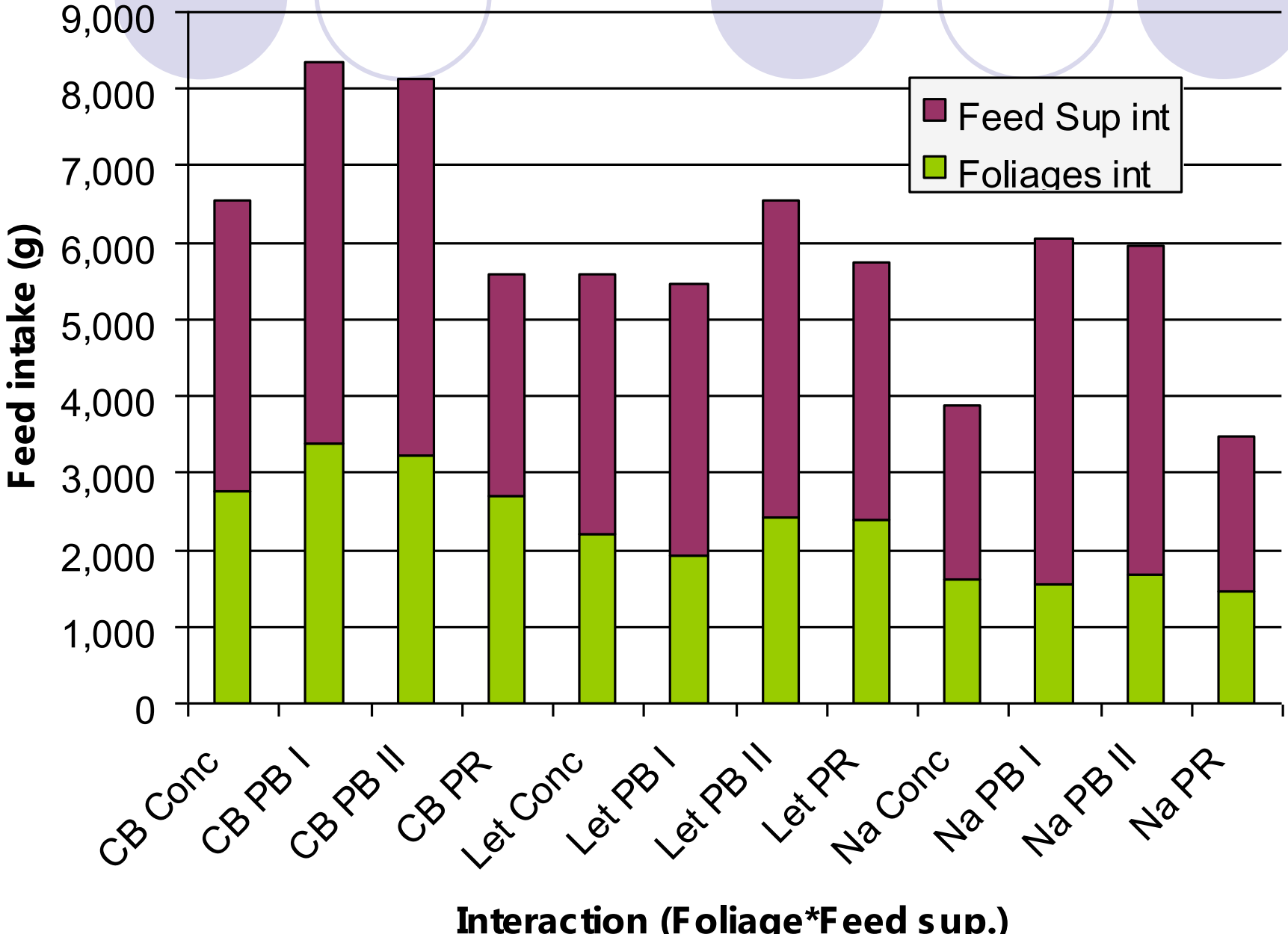
Effect of foliage and feed supplement on Feed supplement intake (g)



Effect of foliage and feed supplement on Total feed intake (g)



Effect of interaction between foliages and feed supplement on Feed intake



Production costs

Feed sup.	Costs (B/Kg)	Feed costs	Feed cost/Kg WG
Conc.	15.00	46.95	28.15
PBI	11.53	49.92	30.09
PBII	10.42	46.05	26.84
PR	7.00	19.25	12.74

Conclusion

- The Cabbage and Head Lettuce residues can be used as roughages to improve the growth performance. It can be reduce vegetable waste in the upland area.
- For the feed supplement the commercial concentrate could be replaced by the Protein block to improve the growth performance of growing rabbits and reduced the production cost.

Acknowledgements

- The author is grateful to MEKARN-SIDA/SAREC for financial supported and give an opportunity to attend this workshop.
- Thanks to the Royal Project Foundation for funding this research project.

Thank you
for your kind attention

The Composition of Protein block I and II

Ingredients (%)	PB I	PB II
Heat-treated full fat soybean	35	25
Molasses	40	40
Salt	3	3
Dicalcium phosphate	2	2
Cement	10	10
Rice bran	10	20