



Centre for Agrarian Systems Research  
and Development (CASRAD)

# HUSBANDRY AND FEEDING SYSTEMS FOR H'MONG CATTLE IN CAO BANG PROVINCE

by Dr. Hoang Xuan Truong





# CONTENTS

**Introduction**

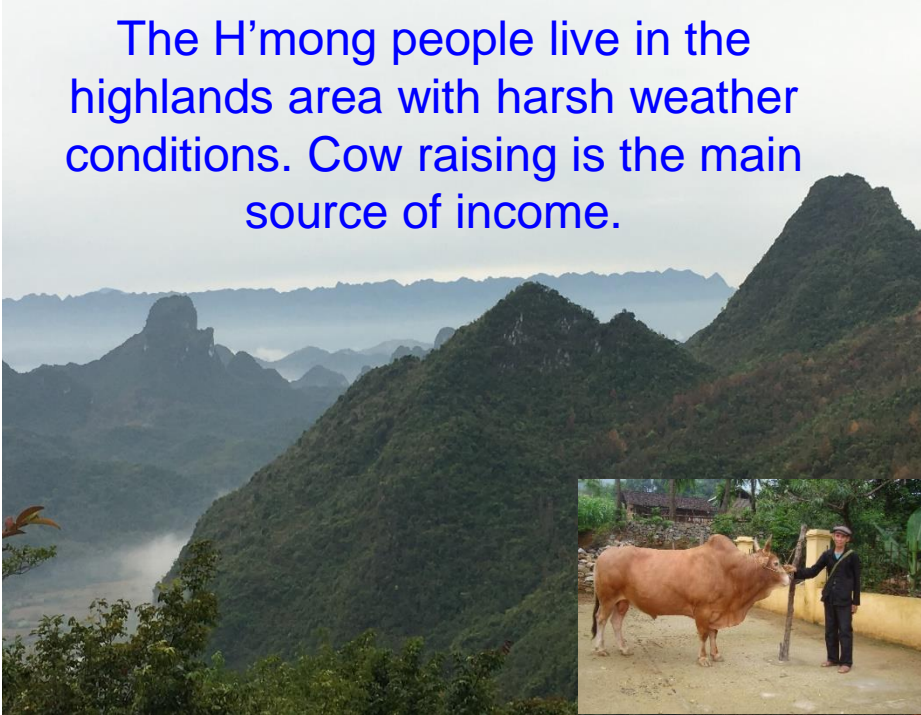
**Methodology**

**Results and  
Discussion**

**Conclusions and  
Recommendations**

# INTRODUCTION

The H'mong people live in the highlands area with harsh weather conditions. Cow raising is the main source of income.



During the winter-spring season, the Hmong people often raise and fatten cows with many types of forestry plants.



Indigenous knowledge and experience in raising and fattening cows have helped the Hmong people survive and develop in mountainous areas where there is little arable land and harsh natural conditions.

To better understand some indigenous knowledge of the Hmong people, it is necessary to conduct the study on ***“Husbandry and feed systems for H'mong cattle”***



# OBJECTIVES

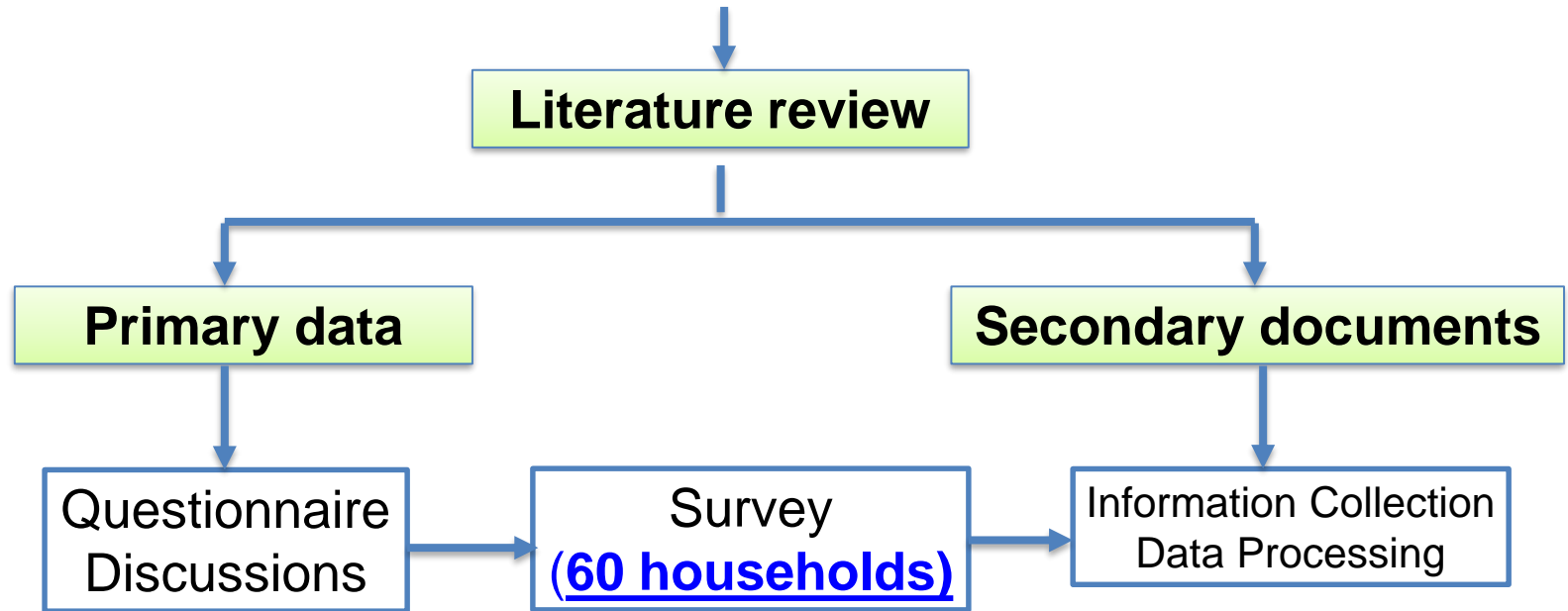
- ✓ Analyze and evaluate the H'mong cattle husbandry systems
- ✓ Identify the main feeds of H'mong cattle



# METHODOLOGY



# 1. H'mong Cattle Husbandry System Analysis



## Research categories:

- *Farming scale*
- *Husbandry system characteristics*
- *Fertility*
- *Efficiency of animal husbandry*

## Analysis methods:

- *Comparison*
- *ANOVA analysis*
- *Correlation analysis*



## 2. Research on Green feed Sources in Winter Season for Raising and Fattening H'mong cattle

Field survey and interview 30 households



Analyzing, Samples sorting, and Data processing;  
Using morphologically comparison method, hand held magnifying glass, and taxonomic documents;  
Specimens kept at the Vietnam Museum of Nature.



30 households scores each type of feed according to 3 levels:  
Most favorite feed (3 scores); Favorite feed (2 scores);  
Additive feed (1 score)



Selecting 6 favorite feeds → Conducting analysis for chemical composition and nutritional value at the Institute of Animal Husbandry



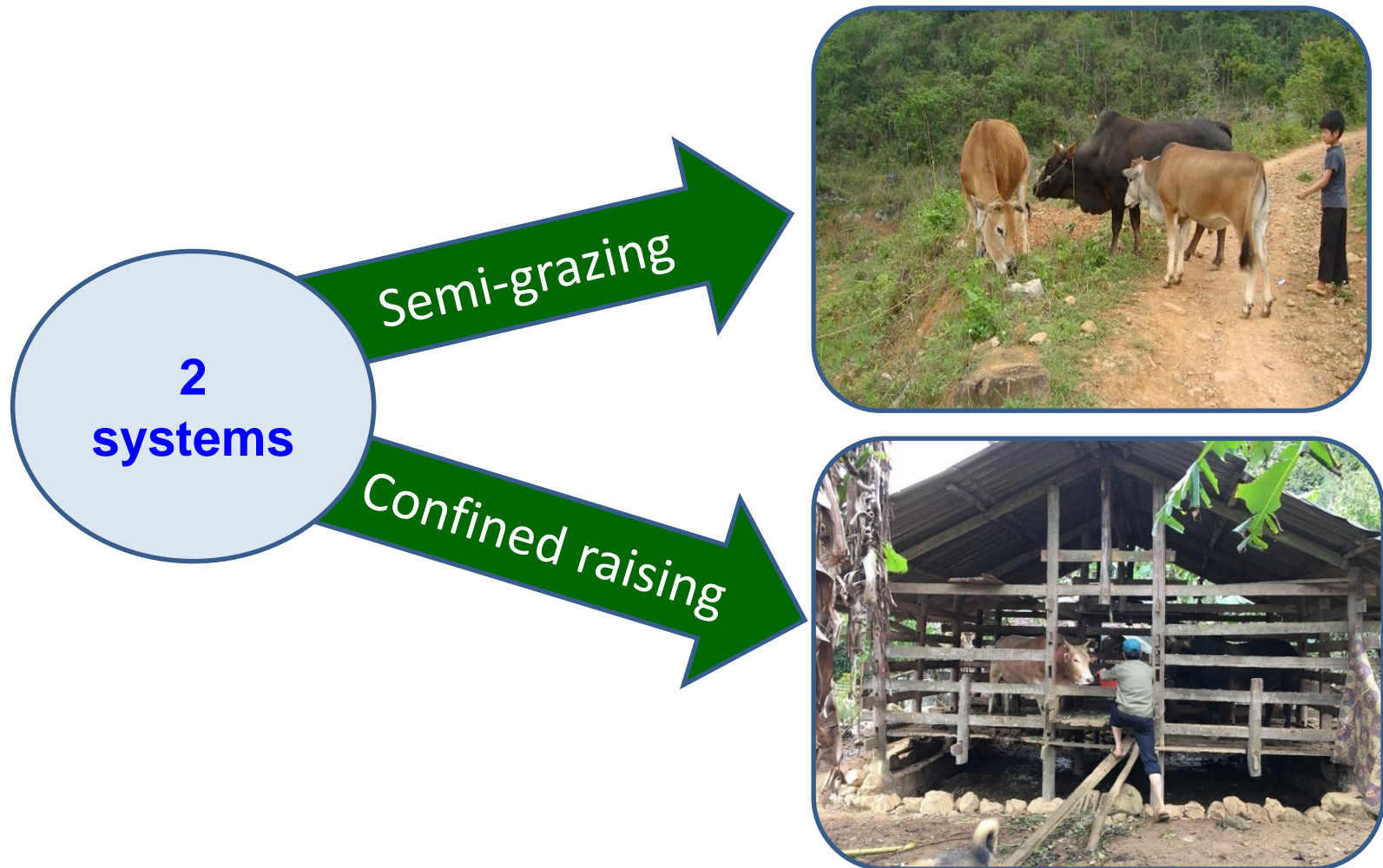
# RESULTS AND DISCUSSION





# 1. H'mong Cattle Husbandry Systems in Cao Bang

## Characteristics of the cattle husbandry systems of the H'mong people in Cao Bang



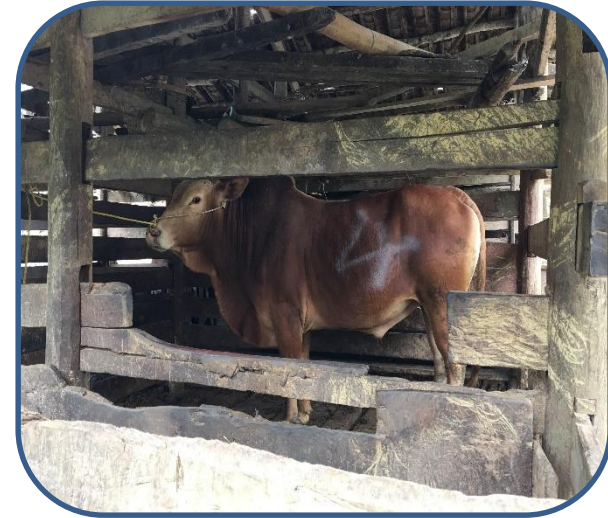
# H'mong Cattle Breeds at the Research Site



2-year-old: 405 kg



3-year-old: 425 kg



4-year-old: 460kg

- There are 2 main types: (1) high hump (popular) (2) low hump (less popular)
- Diverse coat colors: red, brown, yellow...
- Average weight: male 400-500kg, females 220–260 kg.





# Cow Barn

- **100% of households have cow barns** separating from the house, 100% wooden floors.
- **Wooden floor, 0.8-1.2 m above ground**, area from 8-36 m<sup>2</sup> and usually divided into 2-6 cages, each cage 4-6 m<sup>2</sup>.
- A cow barn can last over **50 years** with a system of ironwood flooring, investing from 40-50 mil VND.
- The H'mong people's cow barn style comes from the experience of their ancestors of fighting wild animals. → **Indigenous knowledge in cow barn construction → Effective management of breeding stock → Reducing disease**



## Livestock Production Scale in Surveyed Households (n=60)

Categories	Scale		
	1-2 cows	3-5 cows	≥ 6 cows
No. of households	51	6	3
Percentage (%)	85	10	5
Cow/household	1.60	3.66	9.00



# Feeding and Fattening H'mong Cattle

## **Green-feed:**

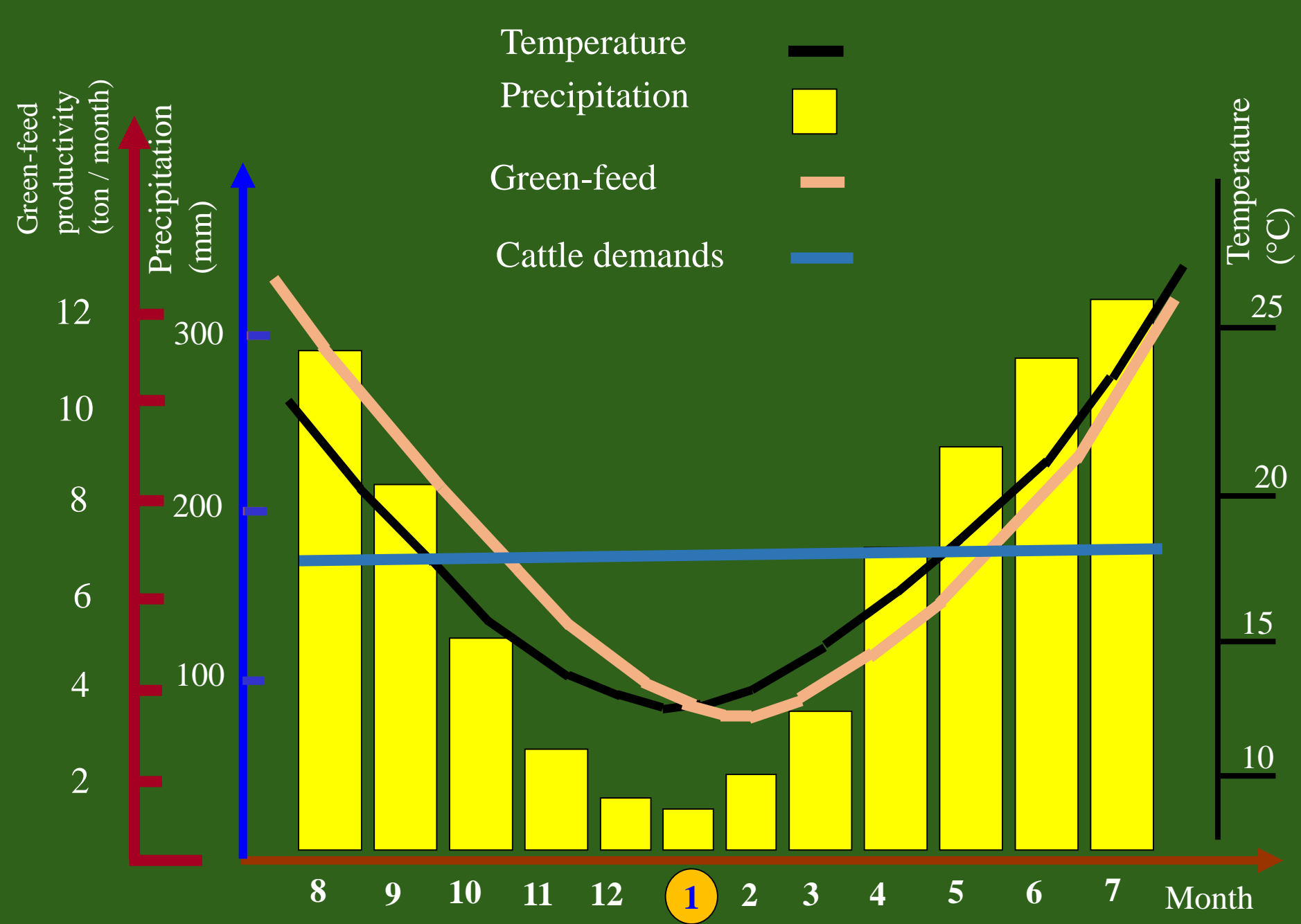
Natural feed plants in the forest; natural grass, cultivated grass, agricultural by-products



## **Processed feed:** Corn flour

Cooking congee and mix to feed 2-3 times a day.







# Marketing

- Cao Bang has 9 wholesale markets, Ha Quang district has 3 markets. For the past 3 years, Tra Linh cattle market has 1000 cattles/session with 400 cows.
- Many households have information about the price of cattle before selling. They are free to sell cattle to whomever they want.
- 60% of cows are sold at home and 40% are brought to market.
- Collectors and interest group members rented trucks to transport cows to the market, 2-6 cows/trip and the rental price was 500,000 VND/trip.
- Large male cows in Cao Bang are mainly sold to China, small cows are sold locally and in Thai Nguyen province.

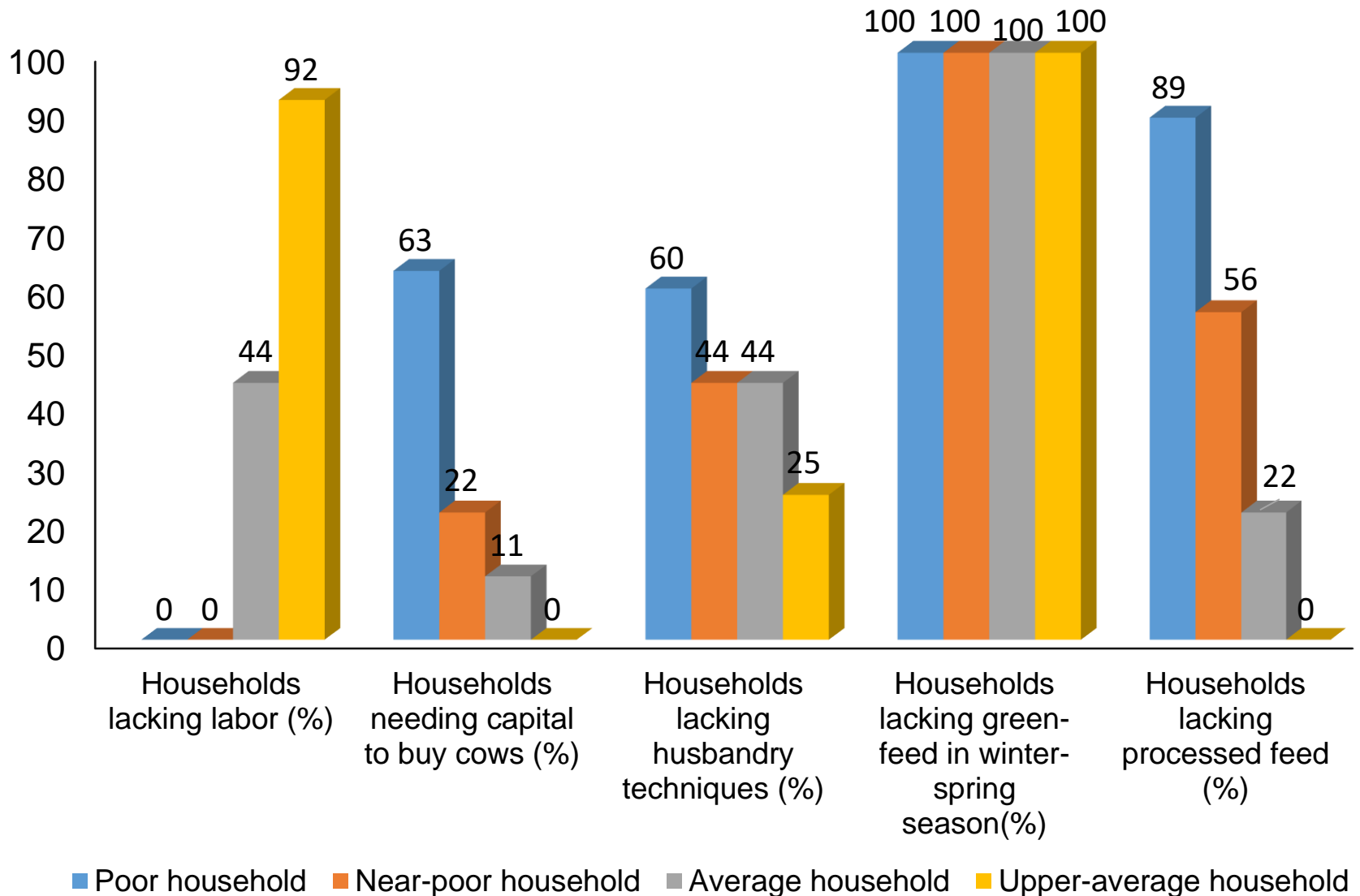


# H'mong Cattle Husbandry Efficiency

No.	Indexes	Dual-purpose Cow (Farmers)	SE	Fatten cows (Collectors)	SE
I	Income/cow	<b>34.287</b>		<b>28.288</b>	
1.1	Income from soil ploughing	1.172	41	0	
1.2	Income from selling cow	30.484	616	28,133	733
1.3	Value from cow dung	2.631	73	155	6.3
II	Cost/cow	<b>23.814</b>		<b>27.399</b>	
2.1	Breed	9.145	185	25.333	843
2.2	Processed feed	850	40	990	56.9
2.3	Household labor cost	13.047	126	800	50.6
2.4	Veterinary	57	3	50	1.3
2.5	Depreciation of fixed assets	715	24	225	18
III	Net profit/cow	<u>10.497</u>	<u>458</u>	<u>890</u>	<u>90</u>
IV	Net profit/Household labor	80%		111%	
V	Number of sold cows (cow/household/year)	0,86		12,5	
VI	Mixed income estimated/household/year	<u>20.247</u>	-	<u>21.122</u>	-



# Difficulties in Cattle Husbandry of the H'mong People (N=60)



# H'mong Husbandry Culture

The H'mong people have indigenous knowledge that many other ethnic groups do not have:

- Barn and floor are solid, wooden, invested with 40-50 mil VND, and stand over 50 years.
- Good breeds, good breeding stock management
- Households with many cows and big cows are always respected.
- Sharing cows for raising if there are many → **This is a typical community culture of the H'mong people that has existed for a long time.**
- **Fattening techniques for cattle in winter-spring season using native food plants**
- Being able to actively participate in the market, know how to evaluate and price cattle before selling







## 2. Evaluation of Feed Sources For H'mong Cattle Husbandry in Cao Bang



# Classification Results of Feed Plants Used by H'mong People for Cattle in Winter

No.	Scientific name	Common name	Local name	Living form	Parts for usage
	Acanthaceae	Acanthus family			
1	Strobilanthes dalzielii (W.W. Smith) Benoist		Cuoc gia	BUI	Whole plant
	Araceae	Araceae			
2	<a href="#">Rhaphidophora decursiva</a> (Roxb.) Schott	Giant climbing philodendron	Cau Tong	COL	Leaves
	Araliaceae	Ginseng family			
3	Brassaiopsis glomerulata (Blume) Regel		Cau ta cai	BUI	Leaves
4	Schefflera elliptica (Blume) Harms	Ivy Tree	Bay La	BUI	Leaves
	Arecaceae	Palm family			
5	Arenga pinnata ( <a href="#">Wurmb</a> ) <a href="#">Merr.</a>	Sugar palm		CAU	Leaves
...41					

*Specimens of these 41 plants are being kept at the Vietnam Museum of Nature.*



## 06 Favorite Feed Plants of H'mong Cattle

No.	Scientific name	Common name	Local name	Scores
1	Rhaphidophora decursiva (Roxb) Schott	Giant Rhaphidophora	Cau tong	<u>90</u>
2	Ficus obscura Blume			60
3	<i>Ficus vasculosa</i> Wall.ex Miq	Vascular-leaved Fig		60
4	<i>Pseudostachyum polymorphum</i> Munro	Polymorph Bamboo		<u>90</u>
5	<i>Oreocnide kwangsiensis</i> Hand.Mazz		May roi	<u>90</u>
6	<i>Acer tonkinense</i> Lecomte	Tonkin Maple	Sau san	<u>90</u>

# Pictures of 06 Favorite Feed Plants



*Raphidophora decursiva* (Roxb.)  
Schott; Lân tơ uyn; Cầu tong



*Pseudostachyum polymorphum* Munro  
Hóp thân tái



*Acer tonkinense* Lecomte;  
Thích Bắc Bộ, Sâu Sắn



*Ficus vasculosa* Wall. ex Miq.  
Đa lá bóng



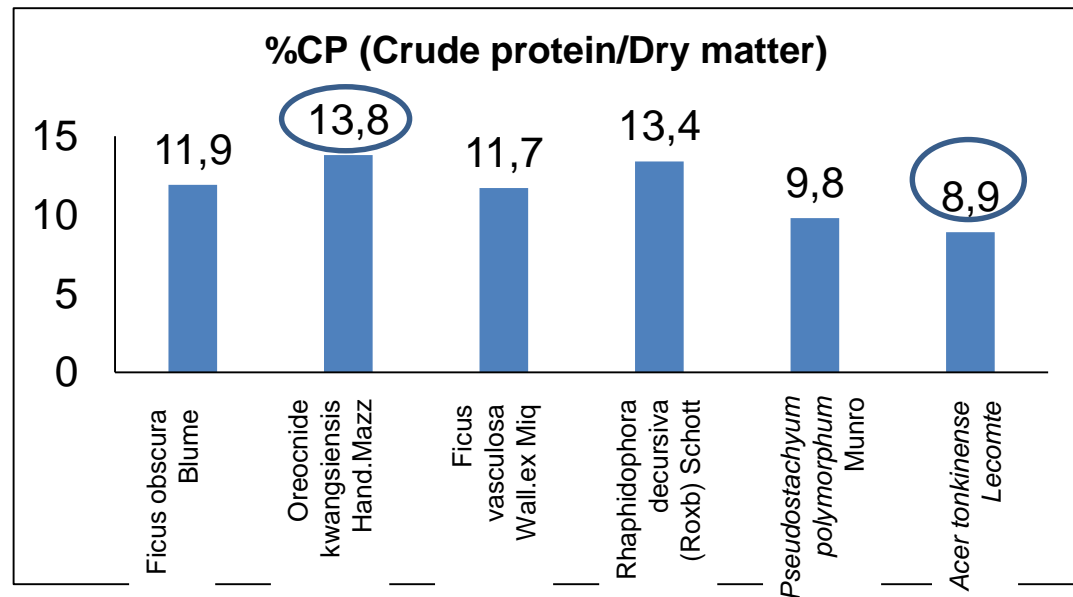
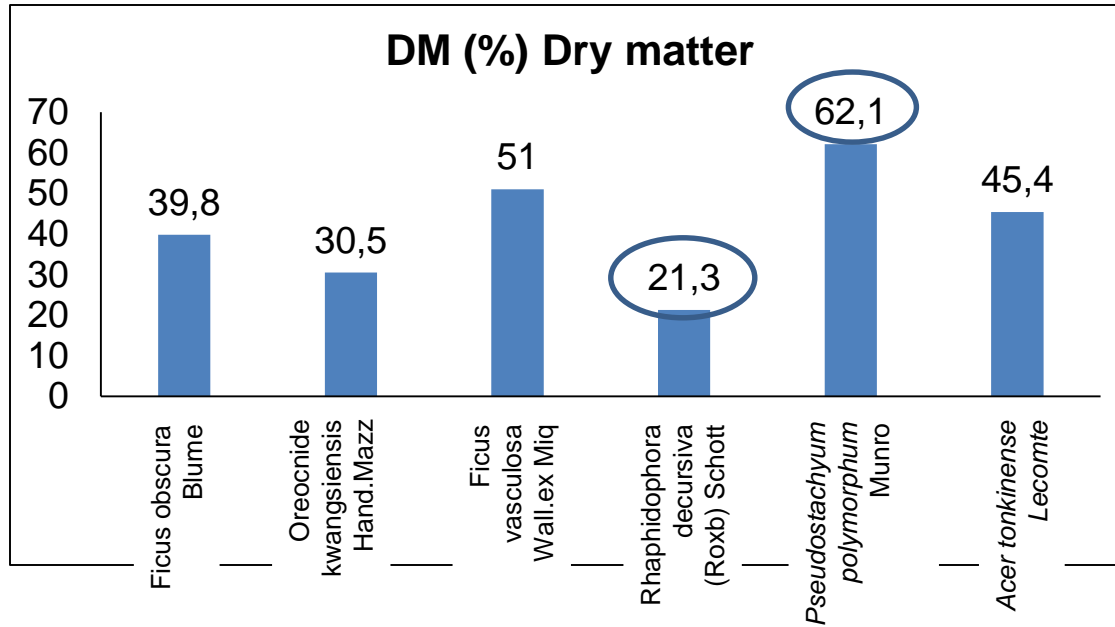
*Ficus obscura* Blume  
Sung



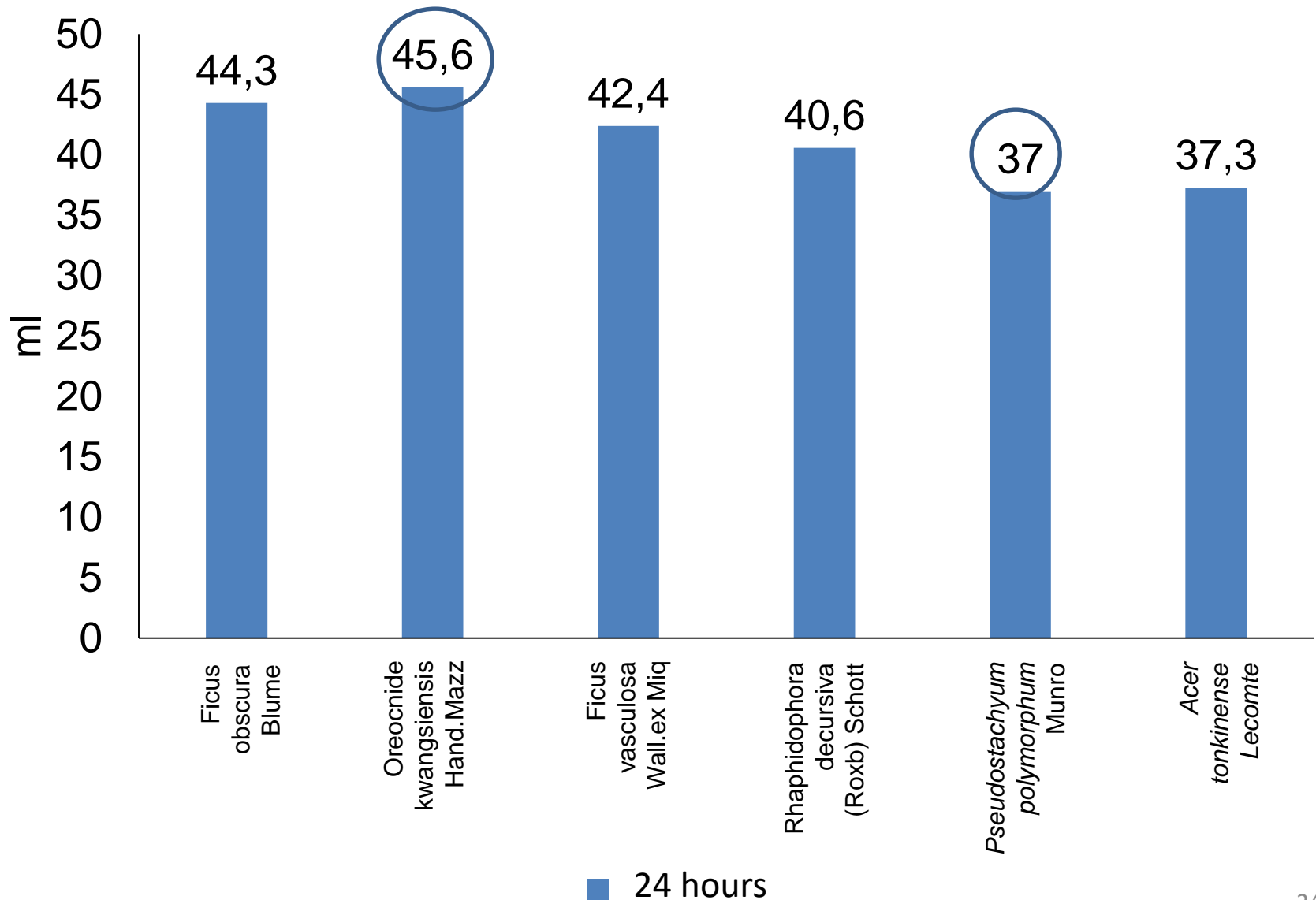
*Oreocnide kwangsiensis*  
Hand.Mazz  
Chéo béo, Quảng tây, Mây roi



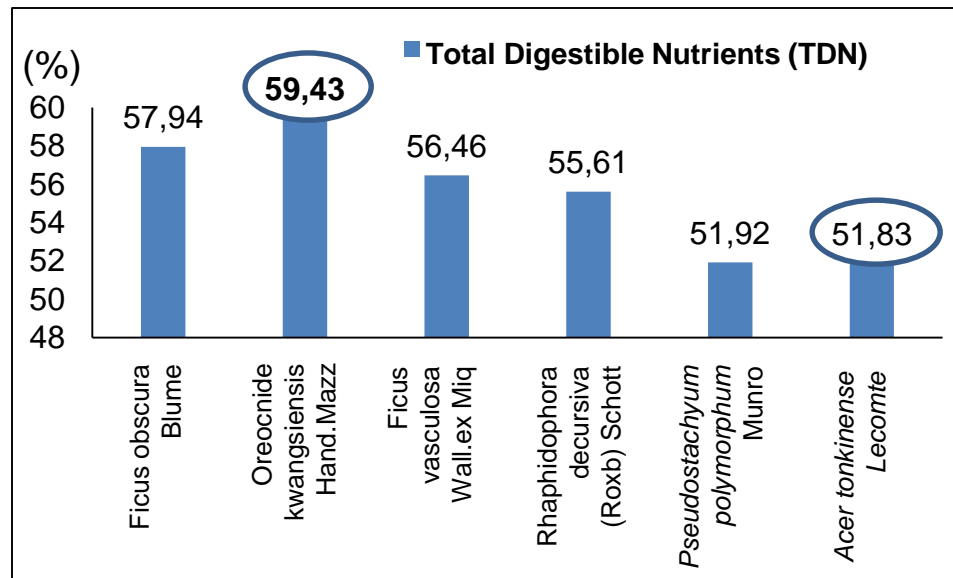
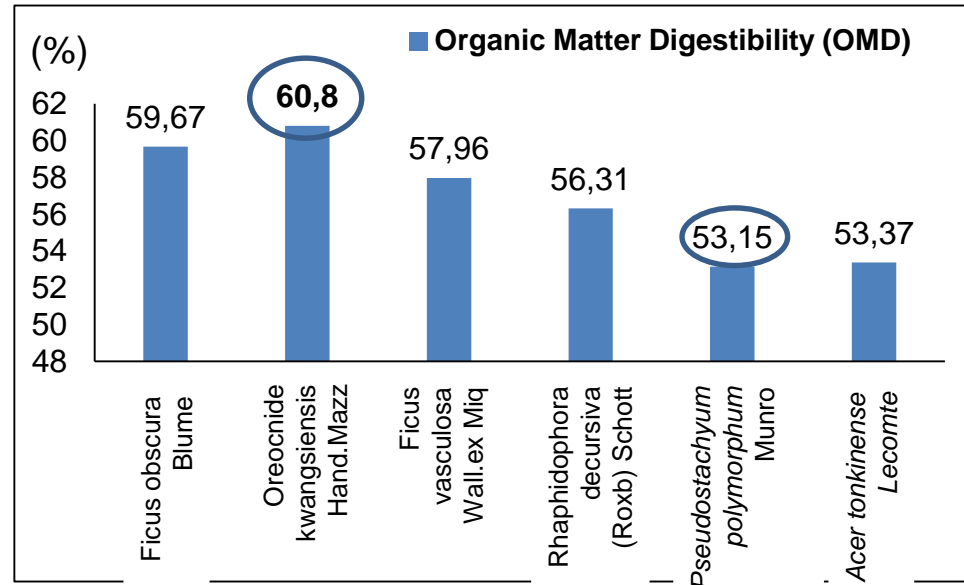
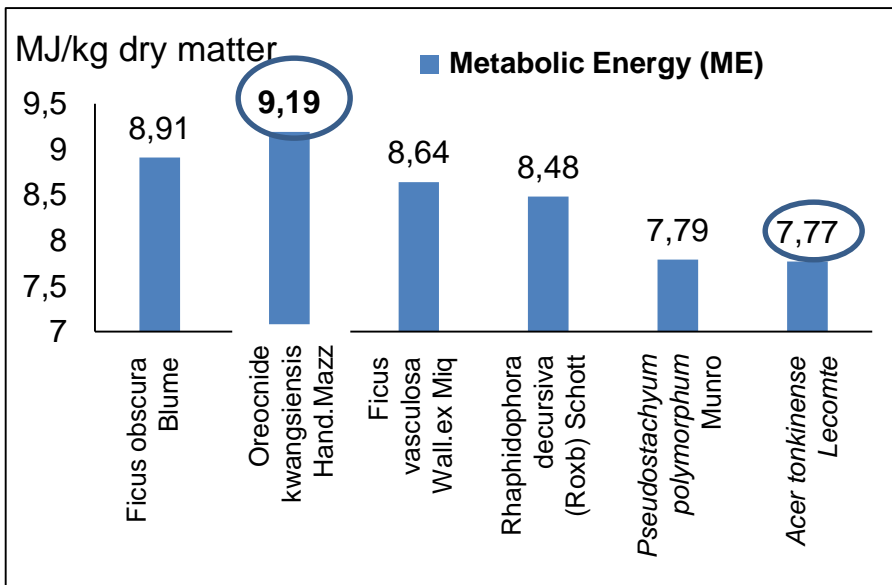
# % Dry matter and % Crude Protein of 06 Favorite Feed Plants



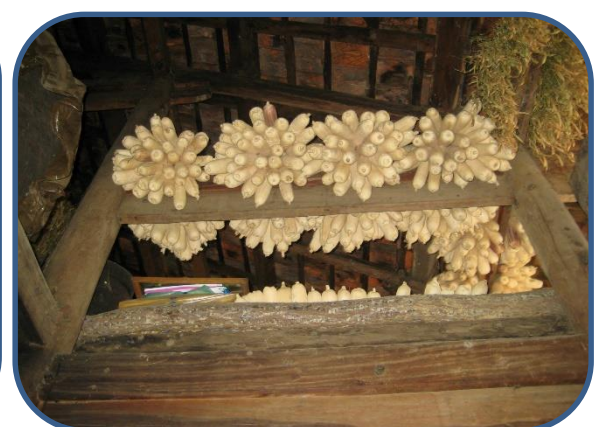
# Accumulated Gas Volume During In Vitro Fermentation at 24 Hours of Incubation of Feed Plant Samples (ml)



# Metabolic Energy (ME), Organic Matter Digestibility (OMD) và Total Digestible Nutrients (TDN) of 06 Favorite Feed Plants







# CONCLUSIONS AND RECOMMENDATIONS



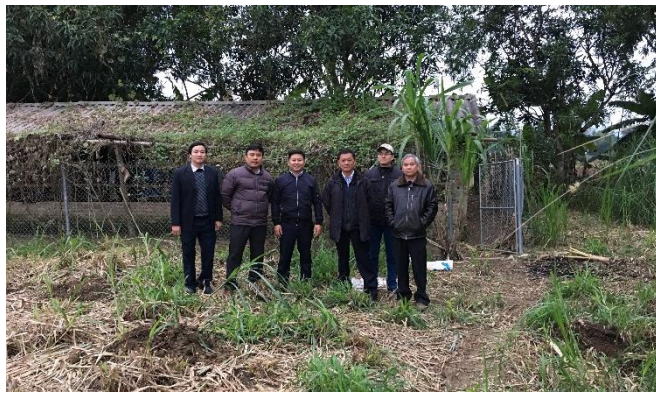
# CONCLUSIONS

- Dual-purpose cattle husbandry is the dominant husbandry practice of H'mong households in Ha Quang, Cao Bang.
- There are 41 different types of plants used as feed for cattle.
- There are 6 types of favorite groups, 6 types of plants can be mixed to ensure the diet for fattening cattle in the winter.
- The basic nutritional value of favorite feed plants has been analyzed.

# RECOMMENDATIONS

- Maintaining the H'mong cattle husbandry systems with indigenous knowledge of the H'mong people
- For livestock farms and households, fattening cattle at 24 months of age should be done with diet 2 (DM: 47.63%; Crude protein: 12.07g and ME: 9.9 MJ).
- Conducting study on the potential for scaling up the cultivation of the six preferred feed plants.
- Establishing Geographical Indication for H'mong beef products in the mountainous region of Northern Vietnam.





**THANK YOU!**

