



Farmers' understanding of Ricebean
diversity and its Preference Trait Analysis
(PTA) in Gulmi, Nepal



FOSRIN Final Meeting
Hotel Country Villa, Nagarkot
31 January to 4 February



Presentation outline

- Introduction
- Rationale of the study
- Study site and Method
- Results
- Conclusion





Introduction

- Ricebean (*Vigna umbellata*) widely distributed minor food and fodder crop in Nepal
- Locally known as *Masyang*, *Jhilinge*, *Situng* and *Guruns*
- Mostly being grown in rainfed marginal areas during summer season as an intercrop with maize or in terrace edges on the uplands
- Very limited study on Ricebean landrace diversity and its preferences
- FOSRIN project was instrumental in providing this opportunity



Rationale of the study

Rapid understanding of farmers' choice of ricebean landraces and its traits to incorporate their perceptive in FOSRIN project activities





Study site

- Western DR where there is maximum area under Ricebean crop
- Darbar Devasthan village (800-1300 masl) of Gulmi district
 - Rainfed sloppy upland (95% area)
 - Ricebean commonly grown in small parcels of land as mix cropping with Maize (80% HHs)





Study method

- Focus Group Discussion (FGD)
 - 2006 crop season
 - 18 participants (35% female)
 - Scoring and ranking
- Direct observation of crop and seed



Results

Farmers' major criterion of naming ricebean landraces in Gulmi, Nepal

1. Days to maturity

- Early-September (<120 days) eg. *Bhadaure*
- Medium-October (120-140 days) Red ricebean
- Late-November(> 140 days) eg. Brownish white bold (Grey mottled)

2. Seed colour and its size

- *Rato* (Red)
- *Khairo seto Thulo* (Brownish white bold)
- *Pahelo Thulo* (Yellowish bold)-Late
- *Pahelo Sano* (Yellowish small) -early



Local Initiatives for
Biodiversity, Research and Development



Farmers' named ricebean diversity of Gulmi

Local name	In English	Distinguishing traits
<i>Rato Jhilinge</i>	Red ricebean	Red, small to medium sized grain, medium in maturity, drought tolerant, low yield
<i>Khairo seto Thulo</i>	Brownish white bold (Gray mottled)	Brown with white stripes and bold grains, late in maturity, good yield
<i>Pahelo Thulo</i>	Yellowish bold	Bold yellowish grain, late in maturity, good yield
<i>Bhadaure Jhilinge</i>	Early season ricebean	Greenish to yellowish, small grains, early maturity, low yield



Common uses of ricebean and its preferred traits

Common uses	Plant parts	Order of pref.	Preferred traits	Matching landrace of the area
Food (<i>Dal, curry, Biraula, Batuk, Khichadi</i>)	Grain	1	High yielding (bold grain, non-shattering) Semi-determinate type, good taste	Yellowish bold-partly matching
Livestock fodder	Green foliage	2	Medium to late, Indeterminate type with luxurious growth	Gray mottled Yellowish bold
Green manuring	Green foliage	3	Early, succulent with luxurious vine growth	Not specifically mentioned

Preference ranking of ricebean landraces

Traits	Red (Red)	Yellowish bold	Gray Mottled	Yellowish small (<i>Bhadaure</i>)
Yield potential	3	1	2	4
Grain type	2	1	1	3
Grain colour	4	1	2	3
Maturity	1	3	3	2
Less shattering	2	2	2	1
Pod size	2	1	1	3
Drought tolerance	1	3	2	4
Tolerance to high rainfall	2	3	3	1
Market potential	4	1	2	3
Taste	4	1	2	3
Total score	25	17	20	27
Overall ranking	III	I	II	IV



Perceived positive and negative traits of ricebean landraces

Name of landrace	Positive traits	Negative traits
Red ricebean	<ul style="list-style-type: none">• Tolerance to drought• Medium maturity	<ul style="list-style-type: none">• Less testy,• Low grain yield
Brownish white bold (Gray mottled)	<ul style="list-style-type: none">• Good grain and fodder yield• Attractive grain type	<ul style="list-style-type: none">• Long duration• Asynchronous maturity in the same vine
Yellowish bold	<ul style="list-style-type: none">• Good grain and fodder yield• Soft and tasty• Attractive grain type	<ul style="list-style-type: none">• Long duration• Asynchronous maturity in the same vine
Yellowish small (<i>Bhadaure</i>)	<ul style="list-style-type: none">• Early maturity• Tolerance to rainfall during flowering	<ul style="list-style-type: none">• Low yield (both grain and fodder)



Farmers' preferred traits for grain purpose

1. Higher grain yield (bold seed, more pods,)
2. Short to medium duration with semi-derminate growth habit
3. Synchronization in maturity of upper and lower pods of the same vine
4. Good taste and nutritional value (easy to digest)



Preferred traits for the market

- Bold grain
- Good taste
- Uniform grain quality (no varietals mixtures)





Scope of the crop

- Multiple use values (food, fodder and green manure) should be highlighted to promote among farmers rather than focussing only for grain
- Suitable for adapting to climate change in vulnerable areas (drought prone) and other rainfed marginal environments





Conclusion

- PTA showed that farmers have some good landraces (**yellowish bold, gray mottled**) to fulfill their multiple use requirements
- PTA suggested to focus ricebean research on identifying/developing short duration varieties with high yield potential for grain purpose
- Better understanding of its nutritional awareness was realized to promote ricebean widely
- PTA was useful since it served as a basis for planning of FOSRIN activities
 - Characterization and dissemination
 - Based on PTA information, *Yellowish bold* and Gray mottled were made available to CAZS-NR to study the seed priming response and breeding initiatives



Thanks

