Status of Ricebean in Nepal

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Nepal harbors:

- 29% forest area
- 10.6% Shrub land and degraded forest
- 12% grass land
- 21% farm land
- 2.6% water body
- 7% uncultivated inclusions
- 17.8% others

16 protected areas

19.7% of the total area of the country
Nepal is richly endowed with numerous agricultural crops and plants. About 21% (3.2 million hectares) of the total land area of Nepal is used for cultivation. Principal crops are:

- Rice (45%), Maize (20%), Wheat (18%), Millet (5%) and Potatoes (3%) followed by sugarcane, jute, cotton, tea, barley, legumes, vegetables and fruits.

Crops such as rice, eggplant, buckwheat, soybean, foxtail millet, ricebean, citrus and mango have high genetic diversity relative to other food crops.

Agriculture constitutes the major share of GDP (36.1%) and support livelihood to 65% in rural areas.
Introduction

Agrobiodiversity of Nepal is in a state of depletion due to;

- Destruction of natural habitat
- Over grazing
- Land fragmentation
- Commercialization of agriculture
- Indiscriminate use of pesticides
- Extension of modern high yielding varieties
Ricebean in Nepal

- Rice-bean (Vigna umbellata Thunb.) is a vine legume
- Centre of domestication is Indo-China.
- It is grown in the rainfed uplands in marginal areas,
  - particularly on drier east and south facing slopes.
  - most common between 700 to 1400 masl
  - also found between 300-600 masl and upto 2400 masl in Humla district.
- Limites Statistical information
7% of the total legume (378 ha) in Tanahu district
Ramechhap, 9%, (300 ha)
Palpa, 11% (269 ha)
Baglung, 24% (265 ha)
The major area of ricebean in Nepal lies in mid-hills environment
Ricebean germplasm and distributions over agro-ecosystems in Nepal
Importance of Ricebean

- An important grain legume of mid hills
- Uses for pulse as well as vegetable
- It is also rich in calcium, iron and phosphorus
- Rice bean plays an important role in the improvement of human, animal and soil health.
- Good source of protein, amino acids, fatty acids and minerals
- Dried seeds make an excellent addition to a cereal based diet.
- Their twining habit makes them very suitable for use as intercrops with maize, sorghum and possibly some of the minor millet species.
- It is also rich in calcium, iron and phosphorus
### Nutritional value of Ricebean

<table>
<thead>
<tr>
<th>Sample Name</th>
<th>Moisture %</th>
<th>Total Ash %</th>
<th>Protein %</th>
<th>Crude fat %</th>
<th>Crude Fiber %</th>
<th>Carbohydrate %</th>
<th>Energy K cal/100gm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max.</td>
<td>15.09</td>
<td>6.10</td>
<td>25.12</td>
<td>1.10</td>
<td>5.66</td>
<td>54.83</td>
<td>317.85</td>
</tr>
<tr>
<td>Min.</td>
<td>13.13</td>
<td>4.10</td>
<td>22.75</td>
<td>0.58</td>
<td>3.63</td>
<td>50.72</td>
<td>307.26</td>
</tr>
<tr>
<td>Avg.</td>
<td>13.82</td>
<td>4.48</td>
<td>24.00</td>
<td>0.78</td>
<td>4.47</td>
<td>52.42</td>
<td>312.76</td>
</tr>
</tbody>
</table>
Genetic diversity in ricebean

- Farmers classify the according to the days to maturity, seed color and grain size
- Morphological variation was found
  - Farmers name, Grain type, grain color, grain shapes, growth habit
- Ricebean is highly photosensitive short-day crop so its cultivation is restricted to rainy season in hills
Status of ricebean in Nepal

- Ricebean is a minor cultigens limited to the marginal lands of poor farmers.
- The cultivation of Ricebean is gradually declining.
- Limited research and extension activities in national program and department of agriculture.
Conservation Strategy

- Ex-situ conservation
  - National genebank (Under construction)
- On-farm conservation
  - Awareness creation
  - Value addition
PGR Unit under Agriculture Botany Division has collected a large number of ricebean from different districts of the country in early 80s.

- 149 accessions from 29 districts
- 156 accessions from 16 districts were collected as a part of ricebean project in 2006.

The information shows that ricebean is mainly shown in western hills of Nepal.
Policy support

- National Agrobiodiversity Policy
- National Agricultural Policy
- Nepal biodiversity Strategy
- National Biodiversity Implementation Plan
Thank you