Adlai
Alternative Crop to Rice and Corn

Dr. Nicomedes P. Eleazar, CESO IV
Director, Dept. of Agriculture-
Bureau of Agricultural Research
www.bar.gov.ph

Presentation to Management Assoc. of
the Philippines-Agribusiness and
Countryside Dev’t. Foundation Forum
Metropolitan Club, Makati City
25 Jan. 2011
What is Adlai?

- Adlai (Coix lacryma-jobi L.) also known as Job's tears due to the tear-like shape of its grains.
- Comes from the family Poaceae or the grasses, the same family that wheat, corn, and rice belong.
- Adlai is said to have originated in East Asia and Southeast Asia.
Adlai Species: *C. lacryma-jobi*

- **Coix lacryma-jobi var. mayuen**
  - Harvested as a cereal crop and is used medicinally in parts of Asia.
  - Drought tolerant, low water requirement

- **Coix lacryma-jobi var. lacryma-jobi**
  - Has hard-shelled pseudocarps which are very hard, pearly white, oval structures used as beads for making accessories (necklace, rosary, etc.)
  - Can be found in swampy areas
Biology and morphology

- Two cropping seasons (wet and dry)
- Grains are usually harvested 3-4 months (November-January) after sowing
- Produces ratoons after harvest
- Grains are separated from the stalks through threshing
- Seeds are first sun-dried before milling
Biology and morphology

- Produces an average of 30 panicles per stem
- Each panicle measures an average of 13 cm
- Each panicle could produce 15 grains
- Each stem can have 250g of dry grains (unmilled)
- Average yields 2000-4000 kg/ha
Adlai as food

- As alternative to grain crops
- Processed into flour, tea, coffee, wine, beer, and vinegar
- South Africa, Japan, China, Korea
Nutrient content

- Husked grain of adlai:
  - 10.8% water
  - 13.6% protein
  - 6.1% fat
  - 58.5% carbohydrate
  - 8.4% fiber
  - 2.6% ash

Source:
[ww.adlay/mdcna/uses/.com](http://ww.adlay/mdcna/uses/.com)
Duke and Wain, 1981
Other uses

- **As medicine**
  - Commonly used as herbal medicine (anti-inflammatory) in China.
  - Other health benefits according to some studies: anti-allergic, anti-mutagenic, anti-diabetic

- **As ornaments**
  - As beads for necklace, bracelets, rosaries, etc.
Potentials of Adlai

- Resilient to drought and flood
- Grows even on poor soils
- Minimize cost, 1 land prep and planting, 3-5 times harvest
- No irrigation needed
- Organically grown
- Nutritious
- Viable alternative staple food for Filipinos
“DEVELOPMENT AND PROMOTION OF ADLAI (Coix lacryma-jobi L.) AS AN ALTERNATIVE STAPLE FOOD FOR RICE”

- This program is geared towards the development, promotion, and utilization of adlai as an alternative food source for the Filipinos.
The program aims to:

- Determine adaptability of available varieties/strains of adlai in selected regions, RIARCs and SCUs;
- Develop package of technologies (POTs) on cultural management practices, postharvest/processing, and seed production systems for adlai;
- Develop food products and by-products from adlai;
- Introduce and promote adlai’s uses as food for the table, feed for livestock/poultry and for other purposes; and,
- Recommend promising adlai strains/varieties for NSIC registration.
BAR Adlai R&D Program

Initial activities:

1. Coordination with NGOs (Earthkeepers and MASIPAG), DA Regional Field Units and Research Stations, and State Universities and Colleges (SUCs) (initiated in July 2010)

2. Conduct adaptability trial in selected sites

3. Train focal persons on adlai production in selected regions
## Pilot Sites and Focal Persons (11)

<table>
<thead>
<tr>
<th>DA-RFU</th>
<th>Site</th>
<th>Focal Person</th>
<th>SUC</th>
<th>Focal Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>CVIARC, Ilagan, Isabela</td>
<td>Mr. Orlando Lorenzana</td>
<td>Isabela State University</td>
<td>Mr. Edwin Macaballug</td>
</tr>
<tr>
<td>4A</td>
<td>STIARC, Lipa City, Quezon Agricultural</td>
<td>Ms. Digna Narvacan</td>
<td>Southern Luzon State University</td>
<td>Mr. Jesus Duma</td>
</tr>
<tr>
<td></td>
<td>Experiment Station, Lagalag, Tiaong, Quezon</td>
<td>Mr. Rolly Cuasay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DA-RFU</td>
<td>Site</td>
<td>Focal Person</td>
<td>SUC</td>
<td>Focal Person</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------</td>
<td>--------------------</td>
<td>---------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>5</td>
<td>BIARC, San Agustin, Pili, Camarines Sur</td>
<td>Dr. Elena delos Santos</td>
<td>Central Bicol State University of Agriculture</td>
<td>Mr. Joel Batanes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Camarines Norte State College</td>
<td>Mr. Cesar Pondealis</td>
</tr>
<tr>
<td>10</td>
<td>NOMIARC, Dalwangan, Malaybalay, Bukidnon</td>
<td>Ms. Juanita Salvani</td>
<td>Central Mindanao University at Musuan</td>
<td>Dr. Agripina Aradilla</td>
</tr>
<tr>
<td>10/NGO</td>
<td></td>
<td></td>
<td>MASIPAG Biodiveristy at Manolo Fortich, Bukidnon</td>
<td>Dr. Chito Medina</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mr. Bobby Pagusara</td>
</tr>
</tbody>
</table>
BAR Adlai R&D Program

Recent activities:

1. Conducted Adlai Production Training cum Planning Workshop
   September 13-17, 2010
   MASIPAG Biodiversity Center,
   Manolo Fortich, Bukidnon
Experiment recipes on adlai:
- Sinaing na adlai
- Maja blanca
- Sinukmani

Potential: wine
Recent activities:

2. Conducted Planning Meeting on Adlai R&D with DA Secretary Alcala
13 December 2010
BAR Conference Room,
Diliman, Quezon City
Recent activities:

3. On Regional Research Outreach Stations

- Crop Adaptability Trial-cum-Seed Production in all sites
- Local varieties used: gulian, ginampay, tapol
Thank you!