

# INTRODUCTION

Drought is the most widespread and damaging of all environmental stresses, affecting 23 million hectares of rainfed rice in South and Southeast Asia (IRRI, 2011). In the Philippines, particularly in Ilocos, rice farming is at a high risk due to erratic rainfall occurrences, resulting to poor yield as an effect of drought stress. In Region I alone, a total of 129,644 ha are under rainfed lowlands while 2,171 ha are rainfed upland (Department of Agriculture, 2010). One of the strategies to cope up this stress is the use of drought-tolerant varieties, however, there is a limited number of rice varieties that could stand drought condition.



As an off-shoot of the breeding activities at PhilRice, elite rice lines that can withstand drought stress had been developed. Hence, to evaluate their adaptability and acceptability in under rainfed areas, this study was conducted.

## The study aimed to:

- Characterize the study sites based on the history and dynamics of drought stress and to document farmers' adaptation strategies;
- Evaluate the agronomic and yield performance of 53 rice breeding lines under rainfed conditions;
- Determine the acceptability of these entries to farmers through participatory evaluation, and;
- Identify the top performing lines that can be recommended to the NSIC for variety release.

# METHODOLOGY

## 1 Site Characterization

A total of 37 farmers in Pias Norte and Pias Sur, Currimao were interviewed to document the history and dynamics of drought stress in the study sites.

## 2 Adaptability Trial



Pias Norte



Pias Sur

Study Sites : Currimao, Ilocos Norte  
 No. of Entries : 53 PhilRice-bred elite lines  
 8 Check varieties  
 Data Gathered: Hydrological data  
 Agronomic, yield and agro-morphological attributes

## 3 Acceptability Evaluation



Is it acceptable to farmers?



Which entries are most preferred?

### Participatory Evaluation:

- ✓ Farmers were invited to participate in the field evaluation.
- ✓ In the first round, farmers identified which entries were acceptable based on crop stand.
- ✓ Only the top 20 entries were included in the second round for the preference analysis.
- ✓ Most preferred entries were identified.

# RESULTS

## Site Profile

- Rice is exposed to severe drought condition in September and October which coincides with flowering to grain filling stages of the crop. Drought stress can last up to 35 days if there is no supplemental irrigation.
- Farmers' adaptation strategies: (1) choose early maturing and drought-tolerant varieties; (2) adjust planting schedule depending on the rainfall occurrence, and; (3) apply supplemental irrigation when drought is severe.

## Top 5 Highest Yielding Entries

Entry Code	Yield (t/ha)	Days to Maturity (DAS)	Plant Height (cm)
1. Dr\$ 786	3.65 <sup>ns</sup>	111 <sup>ns</sup>	87 <sup>ns</sup>
2. Dr\$ 381	3.56 <sup>ns</sup>	112 <sup>ns</sup>	89 <sup>ns</sup>
3. Dr\$ 108	3.56 <sup>ns</sup>	113 <sup>ns</sup>	83 <sup>ns</sup>
4. Dr\$ 903	3.45 <sup>ns</sup>	113 <sup>ns</sup>	90 <sup>ns</sup>
5. Dr\$ 67	3.44 <sup>ns</sup>	113 <sup>ns</sup>	86 <sup>ns</sup>
NSIC Rc146*	3.24	114	83

\* highest yielding check variety

## Farmers' Most Preferred Entries

Season Conducted	Site	Entry Code
2010 WS	Pias Sur	Dr\$ 67, 53, 768, 108 and 904
	Pias Norte	Dr\$ 41, 768, 63, 44, and 111
2011 WS	Pias Sur	Dr\$ 53, 768, 34, and 800
	Pias Norte	Dr\$ 108, 53, and NSIC Rc160