Guidelines and Style for IRRN Contributors

To improve communication and to speed the editorial process. the editors of the *International Rice Research Newsletter (IRRN)* request that contributors use the following guidelines and style:

Style

- Use the metric system in all papers. Avoid national units of measure (such as cavans, rai, etc.).
- Express all yields in tons per hectare (t/ha) or, with small-scale studies, in grams per pot (g/pot) or grams per row (g/ row).
- Define in footnotes or legends any abbreviations or symbols used in a figure or table.
- Place the name or denotation of compounds or chemicals near the unit of measure. For example: 60 kg N/ha; not 60 kg/ha N.
- The US dollar is the standard monetary unit for the *IRRN.* Data in other currencies should he converted to US$.
- Abbreviate names of standard units of measure when they follow a number. For example: 20 kg/ha.
- When using abbreviations other than for units of measure, spell out the full name the first time of reference. with abbreviations in parenthesis, then use the abbreviation throughout the remaining text. For example: The efficiency of nitrogen (N) use was tested. Three levels of N were .... *or* Biotypes of the brown planthopper (BP'H) differ within Asia. We studied the biotypes of BPH in ....
- Express time, money. and measurement in numbers. even when the amount is less than 10. For example: 8 years; 3 kg/ha at 2-week intervals; 7%; 4 hours.
- Write out numbers below 10 except in a series containing some numbers 10 or higher and some numbers lower than 10. For example: six parts; seven tractors; four varieties. *But* There were 4 plots in India, 8 plots in Thailand, and 12 plots in Indonesia.
- Write out all numbers that start sentences. For example: Sixty insects were added to each cage: Seventy-five percent of the yield increase IS attributed to fertilizer use.

Guidelines

- Contributions to the IRRN should generally be based on results of research on rice or on cropping patterns involving rice.
- Appropriate statistical analyses are required for most data.
- Contributions should not exceed two pages of double-spaced, typewritten text. Two figures (graphs, tables. or photos) per contribution are permitted to supplement the text. The editor will return articles that exceed space limitations.
- Results of routine screening of rice cultivars are discouraged. Exceptions will be made only if screening reveals previously unreported information (for example. a new source of genetic resistance to rice pests).
- Announcements of the release of new rice varieties are encouraged.
- Use common — not trade — names for commercial chemicals and, when feasible. equipment.
- Do not include references in IRRN contributions.
- Pest surveys should be quantified with data (% infection, degree of severity. etc.).

Genetic evaluation and utilization

OVERALL PROGRESS

Three rice varieties for release in Bombuwela

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Local variety Herath banda has three important characters improved varieties lack: exceptionally fast seedling growth, red pericarp and high palatability, and thrip resistance.

The 3-month strain BW 272-6B, bred to replace Herath banda, further consolidates high yield potential, resistance to lodging, high resistance to leaf blast, optimum yield at low levels of nitrogen, moderate resistance to salinity, high protein content (10-12.7%>), and suitability for mineral, half bog, and bog soils.

In farmers' fields BW 272-6B yielded twice as much as Herath banda. The average yield of Herath banda is 1.0-1.3 t/ha. The expected average yield of BW 272-6B is 2.6 t/ha, with a yield potential of more than 4.6 t/ha.

Because more emphasis has been placed on the selection of early-maturing strains, BW 267-3 and BW 266-7 have recently emerged from the Bombuwela varietal improvement program.

BW 267-3 takes 108 days from sowing to maturity. It has a culm length of 74 cm and because of a fast early growth rate, its weed competitive ability is high. It is nonlodging. The grain is long and the pericarp color is white. It is highly resistant to blast, iron toxicity, grain spotting, and moderately resistant to bacterial blight and sheath blight.

BW 266-7 takes 102 days from sowing to maturity. It is 4-5 cm shorter than BW 267-3. It is nonlodging and has white, long, slender, translucent grain of high quality. Even ripening and clean crop are characteristic features. The strain is highly resistant to blast and grain spotting and moderately susceptible to bacterial blight and sheath blight. It is highly resistant to gall midge. ■

Performance of IRRI cultivars in Afghanistan

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Testing exotic varieties has been the main activity of the rice improvement program in Afghanistan. By 1979, 510 IRRI cultures had been obtained, either directly from IRRI or from IRTP nurseries. Separate trials for fine-grained and coarse-grained cultures were conducted at Jalalabad (eastern zone) and Baghlan (northern zone) 1971-80. No trials could be arranged in Herat (western zone). One local fine-grained variety — Barah at Baghlan and Pashadi, Lawangin or Behsudi at Jalalabad— was included as a check. Coarse-grained cultures were compared with the local variety LUK at both sites.

Table 1. Performance of fine-grained IRRI cultures in varietal trials at Jalalabad and Baghlan, Afghanistan.

Culture	Yield	Increase	
			%
	Jalalabad		
IR1529-680-3-2	7.3	4.6	165.3
Local variety	2.8		
IRl561-228-3-6	6.2	3.6	143.0
Local variety	2.6		
IR1561-238-2	6.8	3.3	94.6
Local variety	3.5		
IR1628-632-1	7.6	4.6	156.7
Local variety	3.0		
IR1721-11-6-8-3-2	7.3	4.8	193.9
Local variety	2.5		
	Baghlan		
IR1529-680-3-2	6.0	0.8	15.6
Local variety	5.2		
1Rl561-228-3-3	7.3	1.8	32.6
Local variety	5.5		
IR1561-238-2	6.4	1.2	22.4
Local variety	5.2		

Only 43 cultures (26 fine and 17 coarse) at Jalalabad and 21 cultures (11 fine and 10 coarse) at Baghlan matured normally. Others did not ear at all or were very late and recorded very high sterility.

IRRI fine-grain cultures yielded 4% to 395% more at Jalalabad and from 2.4% to 112.3% more at Baghlan. The three highest-yielding cultures at Jalalabad were IR1628-632-1, IRl529-680-3-2, and IR1721-11-6-8-3-2 (Table 1). At Baghlan they were IR1561-228-3-3, IR1561-238-2, and IR1561-152-1. IR1561-228-3-3 and IR1561-238-2 yielded an average of more than 6 t/ha at both sites. Promising fine-grained cultures are being evaluated for qualities similar to those of local varieties.

IRRI coarse-grained cultures yielded from 47.28% to 163.5% more at Jalalabad and from 15.14% to 63.6% more at Baghlan (Table 2). Three cultures, IR747B_2-4-2-1-1, IR934-10-1-2-2, and IR934-239-1-3-2, yielded an average of more than 6 t/ha at both sites. Promising coarse-grained varieties are being tested in demonstration plots in farmers' fields. ■

Table 2. Performance of the best coarse-grained IRRI cultures in varietal trials at Jalalabad and Baghlan, Afghanistan.

Culture	Yield (t/ha)	Increase	
		t/ha	%
	Jalalabad		
IR747 B2-4-2-1-1	6.2	2.3	59.4
Local variety	3.9		
IR934-10-1-2-2	8.4	4.4	107.4
Local variety	4.0		
IR934-239-1-3-2	8.4	5.2	163.5
Local variety	3.2		
	Baghlan		
IR747 B_2-4-2-1-1	7.2	2.8	63.6
Local variety	4.4		
IR934-10-1-2-2	6.8	2.2	48.1
Local variety	4.6		
1R934-239-1-3-2	6.1	1.5	34.0
Local variety	4.6		

Low input variety BIET1107 for rainfed lowland areas of Bihar, India

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The average fertilizer consumption of a rice crop in Bihar is high — about 4 kg N/ha. A number of factors, including the economic condition of the farmers, are responsible.

BIET1107 is the result of efforts to breed varieties for low inputs. BIET1107 (from the cross Jaya/Mahsuri), had the designation RAU 51-57-1 before its release in 1981. In more than 5 years of varietal trials, recommended practices for low input varieties (40-50 kg N/ha) were used. Yield superiority was consistent (Table 1) over years and across sites. Under rainfed lowland conditions during 1979 and 1980, BIETl107 yielded an average 3.4 t/ha, compared with 2.5 t/ha of BR34, 2.2 t/ha of Mahsuri, and 1.8 t/ha of BR8. BIET1107 is also recommended as a substitute for varieties such as BR8, BR34, and Mahsuri in rainfed areas of medium lowlands. Beginning in 1978, BIET1107 showed its superiority over existing varieties in more than 815 minikit demonstrations in farmers' fields.

BIET1107 has intermediate height (135 cm) and good tillering ability. Its resistance to bacterial blight is moderate but better than that of Mahsuri. Grains are medium slender with quality comparable to Mahsuri's (Table 2), making BIET1107 acceptable to farmers and consumers. ■

Table 1. Average yield of BlETll07 under low input irrigated conditions at 5 sites in Bihar, India, 1976-80.

Entry	Av yield (t/ha)				
	Patna	Bikram ganj	Sabour	Pusa	K anke
BIET1107	4.7	4.2	4.0	2.4	2.5
BR34	3.2	2.8	3.4	2.2	2.3
Mahsuri	4.5	3.5	4.2	2.1	2.7
BR8	3.2	2.6	3.3	2.6	2.5

Table 2. Grain quality characters of BIET1107 and check varieties in Bihar, India.

Entry	Grain length (mm)	Length-breadth ratio	Hulling (%)	Head rice recovery (%)	Protein (%)	Cooking quality
BIET1107	5.1	2.6	73.4	63.3	7.0	Good
BR34	6.0	2.9	72.4	59.2	9.1	Good
Mahsuri	5.3	2.7	74.5	65.2	8.7	Good
BR8	6.8	3.0	71.2	58.2	7.2	Good

GENETIC EVALUATION AND UTILIZATION

Agronomic characteristics

Angle of leaf attachment in rice varieties

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The angle a rice leaf blade makes at its base (collar) is influenced largely by leaf length. The wider the angle, the more the spread of leaves for light interception, especially in the lower leaves. This defect has largely been corrected in semidwarf lines where leaves are shorter than in tall varieties and form closer angles at the base. But overlapping still occurs in the lower leaves. In the ideal plant type, interception of light would be low. One way to achieve this is to develop rice plant types with minimum leaf attachment angles.

Lalnakanda is a tall variety with long leaves and acute leaf attachment angles. A study compared some selected tall (BR34, BR8, BR9) and semidwarf (Jaya, Sita, Pusa 2-21, RD1, and IR8) varieties and Lalnakanda. Varieties were grown at 20- × 20-cm spacing with 80-40-20 kg NPK/ha. Four leaves were