

# Genetic Evaluation and Utilization

## DISEASE RESISTANCE

### Blast-resistant upland variety developed in Mato Grosso State, Brazil

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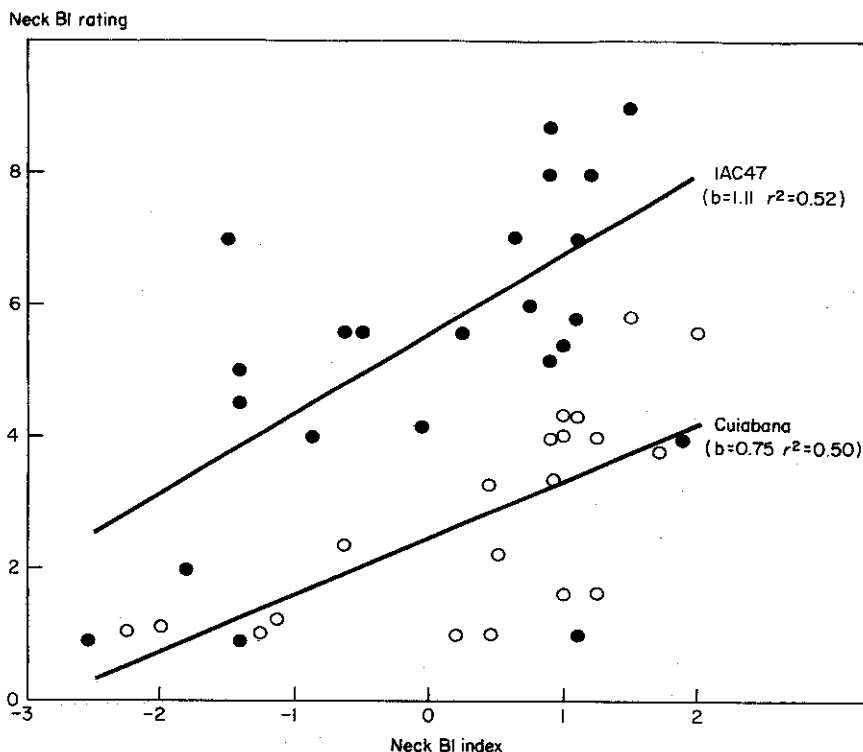
CNA104-B-2-Py43-2 (IAC47/SR2041-50-1), an upland rice developed at the National Center for Rice and Beans (CNPAF/EMBRAPA), has been released as Cuiabana variety by the Mato Grosso State Research Organization for Agriculture and Animal Husbandry (EMPA-MT).

The performance of Cuiabana was evaluated during 1982-83 and 1983-84 growing seasons in 39 advanced yield trials, using widely cultivated upland rice IAC47 as the local check.

In 6 locations, Cuiabana yield increases averaged 9.4% over the local check. Yields ranged from 1.6 to 4.8 t/ha in observations by extension service.

Cuiabana is moderately resistant to leaf and panicle blast (Bl). An average neck Bl incidence of 2.7% was registered, but leaf Bl was negligible.

Bl stability as a function of the integrated effect of environmental and biological factors was evaluated in 23 varietal trials in the states of Mato Grosso, Mato Grosso do Sul, Goiás, and Minas Gerais. The neck Bl rating of the test cultivar in each trial was regressed against the neck Bl index.



Regression of neck Bl rating for IAC47 and Cuiabana on neck Bl index. Mato Grosso, Brazil, 1983-84. Neck Bl was evaluated using the 1980 *Standard evaluation system* for rice scale of 1-9.

The index was calculated by subtracting the mean disease rating of all trials from the average disease rating of that particular experiment. Positive values indicated disease under favorable environmental conditions and negative values indicated disease under unfavorable environmental conditions. The stability of the cultivars' Bl resistance was compared by the slope (b) of the regression line.

Results show that the disease resistance of Cuiabana is more stable across environments than that of IAC47 (see figure).

The average height of Cuiabana is 107 cm in the poor soils of Mato Grosso; in soils with high fertility, it may attain 150 cm and often lodges. The grains are long and slender with high milling and cooking quality. Growth duration is 120-125 d. □