



System of Rice Intensification (SRI) in southeastern lowlands of Amazonia – a viable alternative for smallholder irrigated rice production?

Gehring, C.¹⁾; de Moura, E.G.¹⁾; Boddey, R.M.²⁾

1: M.Sc. Course in Agroecology, Maranhão State University, Brazil.
christophgehring@yahoo.com.br

2: Embrapa Center of Agrobiology, Rio de Janeiro



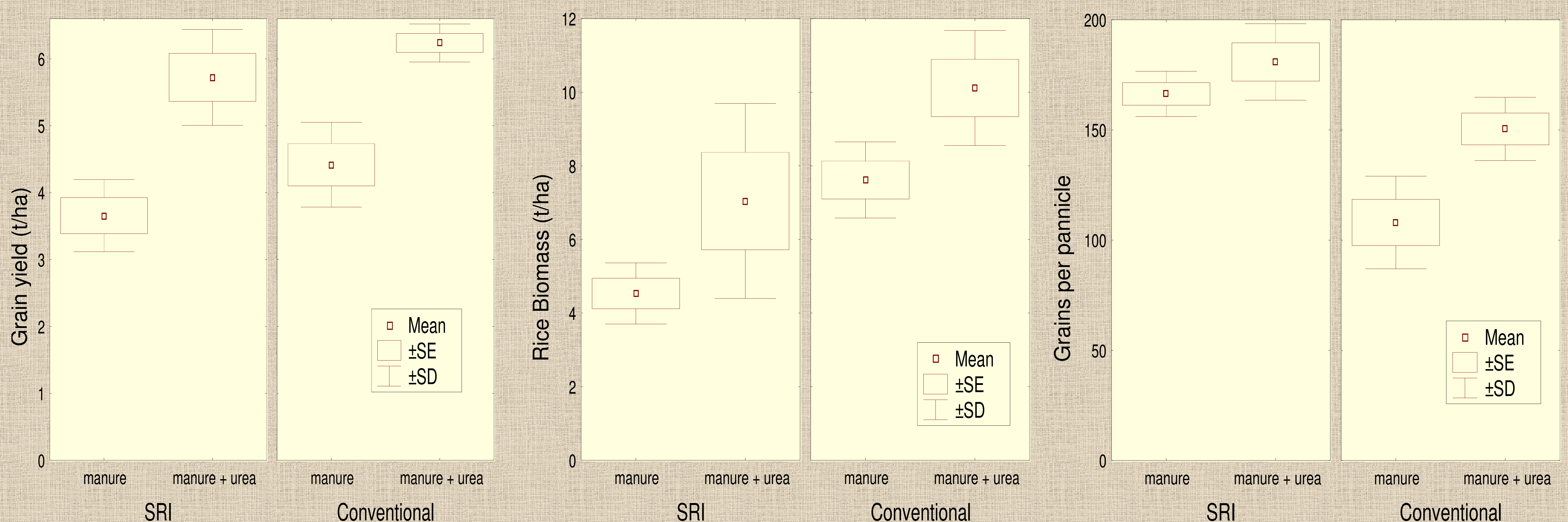
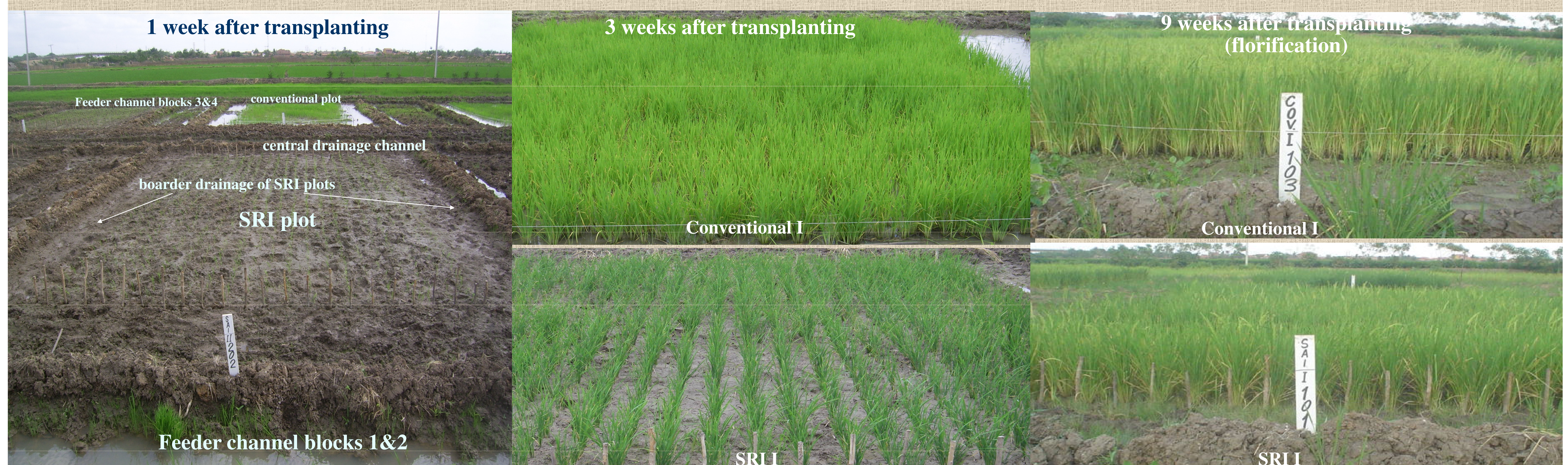
Irrigated rice is (i) the most productive, but (ii) also the most resource-intensive form of land-use. SRI has been proposed as a low-input alternative, based on the following hypotheses:

- though wetland rice is well adapted to anaerobic conditions (flooding), it prefers a moist but aerobic environment, and
- high plant densities unduly increase competition and thus reduce plant vigour and overall yield, and increase susceptibility against pests and diseases.

Conventional	SRI
flooded	constantly moist
direct seeding	careful transplant
500 seeds / m ²	25 plants / m ²

Field experiment:

- SE periphery of Amazonia
- Conventional vs. SRI * 2 levels of N-fertilization:
 - (i) 200kg N/ha (cow manure)
 - (ii) manure + 100kg N/ha (urea)
- Completely randomized block design, 4 replications



Results:

Rice production was slightly but significantly lower in SRI than in conventional treatment. Plant biomass was likewise lower.

However, root biomass and panicle size were higher and the lower plant density was nearly compensated by the strong increase of shoots/plant (data not shown).

Research needs:

- Development of a weeding machine
- Altered nutrient dynamics, danger of N₂O and CH₄ emissions