
Direct seeded rice on a mulch

Agroecological Rice Protection

Mathilde SESTER
CIRAD. UPR AIDA
mathilde.sester@cirad.fr

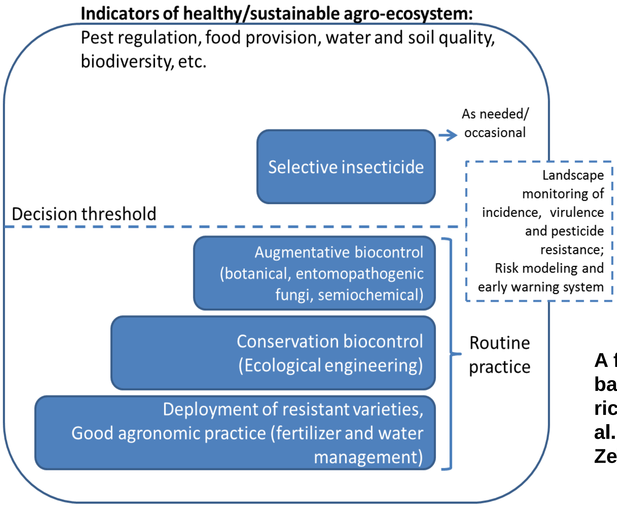
Buyung A.R. HADI
IRRI
b.hadi@irri.org

Chou CHEYTHIRITH
GDA

Florent TIVET
CIRAD. UPR AIDA

Nancy CASTILLA
IRRI

Principles of Agroecological Crop Protection



A framework for ecologically-based pest management in rice production (Heinrichs et al. 2017, modified from Zehnder et al. 2006)

Multi-pest approach

- One pest – many symptoms
- One symptom – many possible causes
- Holistic care of the crop health
- Modeling

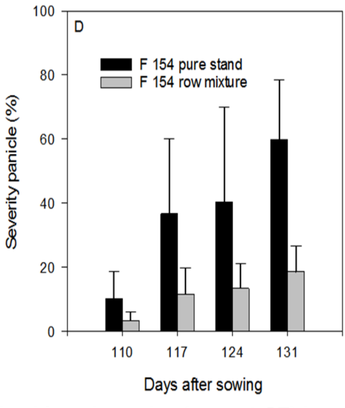
Neck blast

Stem borer (source : IRRI knowledge bank)

Multi-scale approach

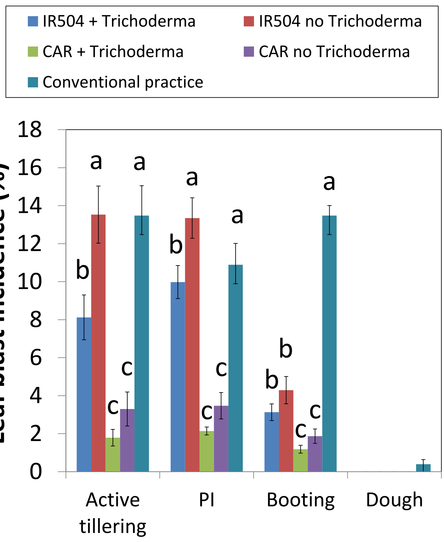
Intra and extra field biodiversity

- Crop rotations
- Introduce biodiversity in the field margins
- Cultivar mixtures
- Manage diversity at the regional level: cultivar heterogeneity
- Enhance natural enemies

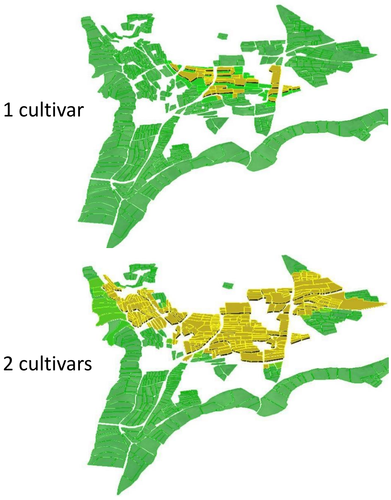


Rice blast dynamics (mean ± SE) in a pure variety or in a variety mixture with 1 row susceptible after 4 rows of a tolerant variety (Raboin et al. 2012)

Multi-tactic approach



Effects of *Trichoderma* application and host plant resistance (CAR 14 is a resistant variety and IR504 is a susceptible variety) on blast incidence (mean ± SE) in Prey Veng, 2017 wet season. In a growth stage, bars with the same letter are not significantly different (*P*<0.05, LSD test).



Disease progress after 5 years simulation if one susceptible cultivar was cropped uniformely (top) or in only 50% of the fields. Yellow fields are contaminated by blast.

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