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THE SCENE; How the rice crop works and why it needs a new engine J.E. Sheehy, A.B. Ferrer, P.L. Mitchell, A. Elmido-Mabilangan, P. Pablico, and

M.J.A. Dionora; Growth phases of rice; The grain yield equation; Plasticity: properties of individuals and community members; Solar radiation and canopy architecture as drivers of canopy photosynthesis; Relationship between leaf photosynthesis, canopy photosynthesis, and yield; Leaf and canopy temperature; Radiation-use efficiency: two

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Altered properties of enzymes of carbohydrate synthesisMitochondrial

Balancing light capture with distributed metabolic demand during C4 photosynthesis J.R. Evans, T.C. Vogelmann, and S. von Caemmerer

Feeding Asia in the 21st century will require a second Green Revolution. However, unlike in the first generation, future yield increases will have to be grown using less water and nitrogen in a world of unfavorable climate change - this can only be done by increasing the efficiency of the photosynthetic system, i.e. developing a C4 rice plant. If and when achieved, it would be the first nonevolutionary example of reconstructing the primary metabolism of a plant. The impact of such a scientific achievement would be undeniable, but it requires either a superb feat of genetic engineering or forc

## Sommario/riassunto