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Agronomic and Physiological Character Response to Shade Stress in Rice

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[Introduction]

Environmental factors play important role of crop growth and development. Recent years, climate change is being challenged and it limits environmental factors. Light, one of environmental factor, involves rice plant photosynthesis system as an important source.

[Materials and Method]

To inform the shading effect on crop growth, we reviewed the paper.

[Results and Discussion]

Low light intensity or shade stress changes plant response in agronomical, morphological, physiological and gene expression as well. Shading effect reduces rice yield as a consequence result of decreasing in tiller numbers, spikelet per panicle, panicle length, primary and secondary branches of panicle, spikelet fertility and grain weight. In addition, shade encouraged rice stem internode elongation and reduction of culm diameter, culm thickness and lignin biosynthesis. It leads to lodging and yield losses. Furthermore, effect of shading reduced net photosynthetic rate, dry matter production, non-structural carbohydrate, sucrose, cellulose accumulation and chlorophyll a and b ratio in rice. Finally, it allows grain yield reduction in rice. Therefore, in this review, we will focus the knowledge on the response of agronomical and physiological characters of rice to shade stress.

Key words: shade, agronomic, physiological, rice

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