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Extended Abstract

Iron Responsive Genes in Rice: The Multiple Roles of WRKY Factors †

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The rice crop is one of the most important worldwide. Its cultivation is under constant constraint by climate changes and increasing biotic and abiotic stresses. Brazil is the largest rice producer outside Asia and the rice crop in the country is constantly suffering from different stresses. The five major abiotic stresses affecting rice are cold, flooding, drought, iron toxicity and salinity. Our lab has been working in developing stress resilient lines to these different stresses. The understanding of plant response mechanisms is key to the development of stress resilient crops. WRKY transcription factors (TFs) are responsible for the regulation of genes responsive to many plant growth and developmental cues, and are involved in biotic and abiotic stress responses. Recently, functional genomics studies in model plants have enabled the identification of function and mechanism of action of several WRKY TFs in plants. Our group has been studying the structural and functional similarities and differences among WRKY TFs in order to identify candidate genes for genome editing and breeding for abiotic stress tolerance.