Short summary on research activities on controlling water in rice culture in Morocco [On-line]

Lage M.

in

Chataigner J. (ed.).
The new development in rice agronomy and its effects on yield and quality in Mediterranean areas

Montpellier : CIHEAM
Cahiers Options Méditerranéennes; n. 58

2001
pages Available

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Water is a critical input of increased rice production and it is the dominant factor in Mediterranean climate. In Morocco as in several areas where wetland rice is grown, the water requirement of rice is supplemented totally by irrigation. The rice consumption varies between 1700 and 2500 mm a season. Rice cultivation under submerged conditions is currently facing several problems due to water management constraint. Intensifying the rice cropping or increasing its area without proper water management could increase the incidence of water logging, salinity and contamination of underground water by pesticide and nitrogen residues.

The research currently undertaken within the National Agronomic Research Institute in Morocco (INRA) concerning rice culture is directed towards the conservation of the environment while testing the increase in rice yield and quality. Among theses research, resistance to water stress and the effective use of water take a significant place considering the lack of water. In this order, research on new irrigation methods to conduct rice under non flooded conditions were tested. Some important results were find.

For the improvement in rice yield conducted under water stress conditions, the understanding of physiological characteristics have been studied. Many studies showed a presence of a chemical signal, abscisic acid (ABA) involved in the control of a wide range of physiological processes including adaptation to environment stress. Theses studies find a high correlation between plant responses to water stress and ABA. In 1999, we have conducted an experimental work for quantifying ABA in rice roots and leaves under stressed conditions. The aim of that study is to find a relationship between ABA increase and water status in rice roots and leaves during a continuous period of water stress for each growing stage and their interaction with yield. The results are not yet been published.