

Potassium Fertilization Improves Rice Yield in Aerobic Production System by Decreasing Panicle Sterility

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Abstract : Rice is the second most important staple food in Pakistan after wheat. It is not only a healthy food for the people of all age groups but also a source of foreign exchange for Pakistan. Instead of bright history for Basmati rice production, we are suffering from multiple problems reducing yield and quality as well. Rice lodging and water shortage for an-aerobic rice production system is among major glitches of it. Due to water shortage an-aerobic rice production system has to be supplemented or replaced by aerobic rice system. Aerobic rice system has been adopted for production of non-basmati rice in many parts of the world. Also for basmati rice, significant efforts have been made for aerobic rice production, however still has to be improved for effective recommendations. Among two major issues for aerobic rice, weed elimination has been solved to great extent by introducing suitable herbicides, however, low yield production due weak grains and panicle sterility is still elusive. It has been reported that potassium (K) has significant role to decrease panicle sterility in cereals. Potassium deficiency is obvious for rice under aerobic rice production system due to lack of K gradient coming with irrigation water and lowered indigenous K release from soils. Therefore it was hypothesized that K application under aerobic rice production system may improve the rice yield by decreasing panicle sterility. Results from pot and field experiments confirm that application of K fertilizer significantly increased the rice grain yield due to decreased panicle sterility and improving grain health. The quality of rice was also improved by K fertilization.

Keywords : DSR, Basmati rice, aerobic, potassium

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