**Evaluation of Nepalese rice for drought tolerant characteristics**

Sumitra Pantha, Shambhu P. Khatiwadaand Resham B. Amgai

Nepal Agricultural Research Council, PO Box No. 1135, Kathmandu, Nepal

Email: sumi\_400@yahoo.com (corresponding author)

**Abstract**

Rice is the most important food crop in Nepal. It is cultivated on 1.5 million hectare in Nepal on which half of the area is under drought stress. Drought is the major problem of rice cultivation in Nepal. Some Nepalese rice landraces seems very good under drought condition. Therefore, an attempt has been done to evaluate the drought tolerance related traits of Nepalese rice landraces along with some improved varieties. Forty eight Nepalese rice landraces and 21 rice varieties were used for this program. IR64, IR8, IR24, IR48 and Nipponbare were used as susceptible check while Kalinga III and Kasalath were used as resistance check. Most of the lines take more days to heading in drought condition than in normal irrigated condition. Similarly, drought treatment produced more SPAD reading. Total tiller, effective tiller, plant height, biomass yield, panicle length, spikelet fertility, thousand kernel weight and grain yield were found reduced due to drought treatment in most of the cases. However, Nepalese rice landraces Aanga-hill, Linde Basaha, Rudhuwa-Ilam, Tauli, Thimaha-chobo and Thulo Begani showed non-significant effect with the drought stress for yield and yield attributing characteristics. These landraces also didn’t show the presence of drought tolerant genes as defined by SSR markers RM215, RM511 and RM315; and phosphorus efficient genes as defined by K29-1 and K46-1. Therefore, these landraces could be the efficient source of drought tolerance genes/QTLs.