

Rice production in temperate Africa

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In the tropical highlands of Africa, rice is being produced in areas up to 1900 MASL. This zone includes fertile rolling uplands, high plateau and mountainous terrain in the archipelago stretching from East to South Africa. There are both upland and aquatic rice growing ecologies, however, only less than 7% of rice production activities are conducted in this zone primarily due to low temperatures. Low temperature at reproductive stage causes up to 80% yield loss, while other important constraints include; blast, terminal drought and flood. In an attempt to address the problem several cold-tolerant rice accessions, mostly with japonica genetic background, have been introduced from different countries through IRRI and the TRRC network. Some of the introductions were released through the AfricaRice breeding task force mechanism in few countries, while some others were used as cold tolerance donors to improve the local popular varieties. The generated breeding lines were evaluated in a temperature regulated screen-house as well as several cold-prone locations through a shuttle breeding program. Interesting lines were identified that have: reproductive stage cold tolerance rating equivalent to the donor parents; early maturity by about 30 days, which is important trait to escape terminal drought; high yield with about 1 ton/ ha yield advantage while maintaining consumer preferred grain qualities. Once released these products are expected improve the income of small scale farmers in the region as well as contributing to the food security in the region through expansion of rice production in the available arable lands at high altitude zones, while taking into account environmental concerns.