RICE BREEDING STRATEGIES FOR 1990's

GURDEV S. KHUSH
International Rice Research Institute
P.O. Box 933, Manila, Philippines

ABSTRACT

Major advances have occurred in rice production during the last two decades due to large scale adoption of improved varieties and production technology. These advances have averted large scale food shortages and famines which were predicted by several authorities. However, the tempo of rice production has slowed down during the last few years but the population of rice eaters in the world is increasing at a higher rate. If the present trends continue, serious food shortages are likely to occur towards the end of this century. We are therefore focussing our strategies on developing rice varieties with higher yield potential, greater yield stability and superior grain quality for the favorable rice growing environments and varieties with higher productivity, yield stability and tolerance to environmental stresses for the unfavorable environments. Under irrigated conditions direct sowing is becoming popular in Asia. We shall develop varieties with low number of productive tillers, without unproductive tillers, large panicles, sturdy stems and thick dark green leaves. Varieties with such traits may help overcome the present yield plateau under irrigated conditions. We shall use the emerging techniques of molecular and cellular biology for incorporating durable resistance into these varieties. Similar approaches are being adopted to develop varieties for unfavorable environments.