

Contributions of Varietal Development

Given the interests and accomplishments of the conference's host institution, the Chinese National Hybrid Rice Research and Development Center, there was a lot of concern with how SRI practices might relate to and reinforce the genetic improvements that rice breeders in China and elsewhere have made. The discussion group on varietal development offered the following points for consideration:

- Breeding for high **productive tillering** ability of the genotype is now more important with SRI practices available since these can capitalize upon such potential.
- The development of varieties with **medium growth duration** (120-140 days) is likely to be the most beneficial with SRI, though in Madagascar, the highest yields come with long-duration varieties.
- Breeding should continue to seek to produce varieties with **high panicle weight**. With SRI methods, there are few problems with lodging, so greater panicle weight does not diminish net production. There is no particular advantage in using short-stalked varieties with SRI.
- There should continue to be breeding efforts to develop varieties that have **resistance and/or tolerance for pests and diseases**, such as for leaf blast, sheath blight, and BLB.
- Likewise, breeding efforts should continue to try to achieve **good grain quality** — slender grains, translucent, high amylose content, and good aroma.
- Work should continue for development varieties that have **drought resistance and/or tolerance**.
- Breeding for **lodging resistance in traditional** varieties may be a useful undertaking. With SRI methods, traditional varieties' yields can be doubled or tripled, making them quite profitable where their market price is higher than that for improved varieties. Usually, however, farmers using SRI do not report much of a lodging problem with either traditional or improved varieties, even when yields and panicle size are increased.
- Improvement of traditional cultivars to reduce their **photoperiod sensitivity** could be a useful contribution to the utilization of SRI methods.
- **Synchronization** of flowering among tillers is important for high yield. With SRI methods, even with a much larger number of tillers per plant, this has not been reported to be much of a problem. One explanation could be that the large and intact root system when growing in aerated soil supports simultaneous flowering and maturation. Rice scientists should examine the possible problems and solutions for *non-synchronization* as presented by SRI.