

INFORMATION ON DROUGHT-RESISTANCE OF ADAPTED S.R.I. PRACTICES IN SICHUAN PROVINCE, CHINA

Zhou Qu, “Experts advocate land-covered integrated technologies to be widely extended, due to higher yield and water-saving merits.” *Sichuan Daily*, 24 June, 2009.

Integrated technologies with paddy land cover (mulch) have been developed by the Sichuan Academy of Agricultural Science and Technology and the China Agriculture University. These technologies aim to tackle the problem of water-shortage in the Sichuan Bowl lands by saving water and producing high yield and high profits. Since 2001, the technologies have been widely extended to 50 counties and cities in Sichuan. According to several years of experiences, these technologies have proved to be water saving and give high yield, with excellent performance especially in drought seasons.

Report 1: Baizhi Village in Outang Township, Renshou County

According to the village’s Communist Party Secretary: “We have been suffered from the drought for years. We cannot even have enough drinking water, let alone irrigation for the paddy lands. However, this year, we not only planted the paddy fields, but harvested well even in the dry season. We planted 400 mu¹ this year in the village.”

Report 2: Hehu Village in Zhujia Township, also Renshou County

The new technologies have been taken up for three years in this village. The first year, we planted 60 mu, and 200 mu last year, villagers say. **According to local experience, with the new methods, 70% of the water normally applied could be saved per mu, and the yield increase was 30% per mu.** The yield even reached 700 kilograms per mu in some disadvantaged seasons (10.5 tons per hectare) .

The village’s Communist Party Secretary said: “This year we transplanted small (young) seedlings one month earlier than usual. This saved our time, solving the conflicts with other activities, giving us more time for the vegetable planting in the autumn.”

According to the head of the county’s S&C Bureau, the new technology has not been introduced for very long, but it has showed strong evidence of drought-resistance. It is quite adapted to the local situation. “This year, it was adopted in 3,000 mu,” the head stated, “and next year, we plan to extend it to 100,000 mu.”

¹ 1 hectare = 15 mu.

Sheng Li, "A New Technology Saved Millions of the Paddy Fields in Drought Season in Sichuan Province." *Science and Technology Daily*, 26 June, 2009.

Great differences in results have been seen with some new technologies compared on the same kinds of plots in Xiangshui Village in Ziyang City, Sichuan Province. The paddy fields with the new technologies (SRI) have been growing well, while those managed with conventional methods have been water-stressed, almost to death, in the dry season.

Li Junqing, a villager, said: "Xiangshui village is locally famous for its drought season. Normally, even with abundant rainfall, the yield per mu can only be 300 kilograms (4.5 tons per hectare). However, with the new technologies being introduced and adopted, it is easy to have yields that exceed 500-600 kilograms (7.7-9.0 tons per hectare). And the yield of my paddy fields can even reach 800 kilograms per mu (12 tons per hectare)."

According to the reports of the Xiangshui village leader, the new technologies have been fast extended following a farmer-to-farmer approach.

The same reports are heard in Dongxi Township, Jianyang City. Over 6,000 mu of paddy fields have become drought-resistant with the new technology. **According to the calculation of Yuan Yong, head of the township's extension station, the cost of the land-cover per mu was increased by 40 yuan, however, the costs of the weeding, land preparation, fertilizer, and irrigation were decreased by 230 yuan. Moreover, the yield was increased 150 kilograms per mu. In all, one household can increase its income from the paddy field by over 460 yuan per mu (\$1,015 per hectare).**

The new technologies have been taken up by the Sichuan S&T Bureau, the Agricultural Bureau, and the Irrigation and Water Conservation Bureau as one of the key technologies for extension in 2007.

Data from: Lv Shihua, Zeng Xiangzhong, Ren Guangjun, and Zhang Fusuo, "Introduction of the Land-cover Integrated Technologies with Water Saving and High Yield," *Journal of Sichuan Agricultural Science and Technology*, 2009, 2: 23.

The new technology performs well in both normal years and drought years, but relatively better in the latter. According to the statistics from Lv et al.:

YIELD:

In normal year: 150-200 kg per mu increased yield compared to usual practices.

In drought year: 200 kg per mu, and even more, increased yield compared to usual methods of cultivation.

NET INCOME:

In normal year: The net income (profit) from the paddy field will increase from 100 yuan per mu (\$220 per hectare) to 600-800 yuan per mu (>\$1,500 per hectare on average).

In the drought year: The yield in Sichuan highlands has been increased from 400-500 kg per mu with conventional technologies to 600-700 kg per mu with the new methods. Accordingly, the net income in a drought year has also been changed, from negative 200-300 yuan per mu to positive 300-500 yuan per mu (i.e., from a loss of about \$550 per hectare to a profit of \$880 per hectare).