

Sichuan Academy of Agricultural Sciences' progress on water saving and high efficiency cropping system in mountainous area

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Text

Sichuan Academy of Agricultural Sciences(SAAS), established in 1938, has 60 disciplines, 35 national innovation platforms, 7 national and local joint engineering research centers (laboratories), and 4 international cooperation platforms. Aiming at the terrain and climate characteristics of Sichuan Province, facing the main battlefield of modern agricultural construction, broke through key technologies, SAAS carried out research on high-efficiency water-saving cropping systems in mountainous and hilly area, and has made certain achievements.

In paddy field production system, Since the 1980s, SAAS has gradually put forward the double cropping rotation patterns with wheat– rice or rape – rice, which adapted to mechanized production. Meanwhile, the triple cropping patterns, such as vegetable-rice-vegetable, wheat-rice-vegetable and rapeseed/potato-rice, were constructed with the goal of improving economic benefits, which has promoted the formation of diversified planting pattern in paddy fields.

In dry land, the main intercropping system was winter wheat/spring corn/sweet potato or winter wheat/spring corn/ soybean in the past. After more than 20 years of research from the beginning of the 20th century, our researchers constructed the high-efficiency rotation cropping patterns of winter wheat-summer corn and winter rape-summer corn, and the supporting cultivation technologies of water-saving such as "rainwater collection and supplementary irrigation, soil improvement, mulching and moisture conservation, density and fertilizer regulation" were also studied and applied to new models rotation cropping patterns. Nowadays, the high-efficiency mechanized rotation cropping patterns in dry land has become the first choice of adaptive farming system for large-scale management, which has promoted the reform of dry land farming system in Sichuan Province.

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