

## 黄土台原旱地小麦机械化保护性耕作栽培体系的水分及产量效应

### Soil Water Content and Crop Yield Effects of Mechanized Conservative Tillage-Cultivation System for Dryland Winter Wheat in the Loess Tableland

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英文关键词：dryland wheat; tillage-cultivation system; water use efficiency(WUE); yield-increasing effect; the loess tableland

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中文摘要：

针对黄土台原自然资源特点及农业生产实际，在已有研究基础上，将“高留茬”、“深松耕”和“起垄覆膜沟播”3项技术有机结合，组成旱地小麦机械化保护性耕作栽培体系。研究表明，夏闲期采用高留茬、深松耕可以把夏闲期占小麦全生产年度50%的降水最大限度地蓄积并保存于土壤之中，较传统翻耕法多蓄水约76.2 mm，蓄水率达55%以上；在此基础上，种麦时再应用起垄覆膜沟播技术，既可以把夏闲期蓄积到土壤中的水分最大限度地保住，又可将小麦生育期的降水量最大限度地蓄留，从而使旱地小麦的水分条件明显改善，增产增收效果显著，是黄土台原旱作小麦实现高产、稳产的一种比较理想的模式。

英文摘要：

To aim directly at the natural resource characteristics and agricultural production reality in the loess tableland, high stubble mulching, subsoiling and ridging with plastic film mulching in furrow planting were combined to form mechanized conservative tillage-cultivation system for dryland winter wheat based on the previous researches. The results show that keeping high wheat stubble and subsoiling in summer fallow period can collect almost all the rain in this period and store over 55% in soil, which is 76.2 mm more than that by conventional tillage. On the basis of storing more water in summer fallow period, adoption of the technique of making ridges with film mulching and seeding in furrows in sowing time can also keep rain water in soil as much as possible during wheat growth, which then increases the soil moisture and further increases yield of wheat, as well as income of farmers.

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