

## 宁南旱区有机培肥对土壤水分和作物生产力影响的研究

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## Effects of organic fertilization on soil moisture and crop productivity in semi-arid areas of southern Ningxia

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**摘要** 通过对宁南旱区连续两年的有机肥定位试验,研究了不同肥力梯度下有机培肥对土壤水分及作物生产力的影响。结果表明,施肥量为高、中、低处理下,第1年种胡麻,成熟期的贮水量在0—100 cm土层分别比对照处理高13%、10%和0.9%,胡麻产量分别比对照处理高11%、10%和5%,土壤水分利用效率分别比对照处理高30%、29%和11%;在第2年种冬小麦,成熟期的贮水量在0—100 cm土层分别比对照处理高16%、14%和7%,冬小麦产量比对照处理高18%、25%、和13%,土壤水分利用效率分别比对照处理高14%、15%和6%。2年结果看出,施用有机肥可提高土壤含水量,利于土壤的扩蓄增容,且对提高作物产量和土壤水分利用效率有显著效果。

**关键词:** 宁南旱区 有机培肥 水分动态 作物生产力 宁南旱区 有机培肥 水分动态 作物生产力

## Abstract:

Effects of organic fertilization on soil moisture and crop productivity were studied using a two year field experiment in semi-arid areas of southern Ningxia. The results show that soil water storages at 0–100 cm layer for the high-fertilizer, middle-fertilizer and low-fertilizer treatments are about 13%, 10% and 0.9% higher than that of the CK at the maturity stage of oil flax, respectively, the oil flax yields of the three treatment are 11%, 10% and 5% higher than that of the CK, and the water use efficiencies are 30%, 29% and 11% higher than that of the CK in the first experiment year, 2007. For the 2008 crop year, the soil water storages are 16%, 14% and 7% than that of the CK at the maturity stage of winter wheat, the yields of winter wheat are 18%, 25% and 13% higher than that of the CK, and the water use efficiencies are 14%, 15% and 6% higher than that of the CK. The two-year study indicates that application of organic fertilizers can improve soil moisture, expand soil water storage capacity, and increase crop yield and soil water use efficiency significantly.

## Keywords:

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