

玉米-小麦一年两熟保护性耕作体系试验研究

Conservation tillage for corn-wheat two crops a year region

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中文摘要:

采用将夏玉米、冬小麦两季作物作为整体来研究适合华北一年两熟地区保护性耕作技术体系, 确定了耕作和覆盖两个因素, 包括免耕、深松、耙地、翻耕4种耕作方法, 以及100%秸秆覆盖, 50%秸秆覆盖和0覆盖3种秸秆覆盖水平。筛选设计了8种保护性耕作和2种传统翻耕共10种体系的试验方案。试验中测定了土壤含水量、容重、地温等参数和根系、产量等作物指标。试验结果表明, 我国华北地区实施保护性耕作有利于节约用水, 提高水分利用效率, 增加作物产量。试验得出最适合的两种保护性耕作体系是: 玉米-小麦全程免耕100%秸秆覆盖体系、玉米深松100%秸秆覆盖+小麦免耕100%秸秆覆盖体系。

英文摘要:

Taking two crops, summer corn and winter wheat, as an integrated system, the conservation tillage system is studied for two crops a year region in North China Plain. Two experimental factors are chosen, one is tillage method, which includes no-tillage, subsoiling, harrowing and moldboard plowing, and the other is crop residue cover rate which consists of 100%, 50% and 0. Eight kinds of conservation tillage systems and two kinds of conventional plough systems are designed. Soil parameters including moisture content, soil bulk density, soil temperature and crop indexes including density of roots, crop yield are measured during the study period. The experimental result shows that application of conservation tillage in North China Plain is benefit to saving water, enhancing water use efficiency and increase crop yield. The two suitable systems of conservation tillage are obtained, they are corn-wheat no-tillage and 100% cover, subsoiling for corn with no-tillage for wheat and both 100% cover.

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