

## 机械化农业生产要素优化组合与技术结构选择理论模型

### A Theoretic Model for Optimum Factor Setting and Choice of Technical Structure in Agriculture Mechanized

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作者	单位
孟繁琪	农业部南京农业机械化研究所
龙振中	农业部南京农业机械化研究所
李伦绩	山东省农业机械管理局
王维佩	山东省农业机械管理局

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中文摘要:

农业机械化的发展,机械化作业项目和机器型号的合理选择,是在生产方式改变、要素优化组合的动态过程中实现的。建立非线性混合整数规划模型,是为了与农业生产投入产出的非线性特征相适应并体现劳动资料(生产工具)技术单位不可分割性原则。通过对苏南地区稻麦生产和华北平原小麦、玉米生产在劳动机会成本和经营(服务)规模均处于变化条件下的生产技术结构进行优化运算和动态考察,具体揭示了生产技术模式转换和机械化发展的经济机理在于要素间相对价格关系的变化,并受到经营服务规模(与社会经济发展、经营主体选择和经济组织发育相关联)的强制约;同时证明“长期费用曲线”为“L”型曲线而非“U”型曲线。

英文摘要:

An optimum choice of mechanization process item and machimery type in development of agricultural mechanization is realized with the change of productive pattern and dynamic course of optimum factor setting. Making up a big non-linear and mixed positive number plan model is to adapt the non-linear character, which is an output out of farming input, and to show the principle of un-divisibility concerning with the technical unit of labour resource-productive tool. The productive technical structure was observated with dynamic and calculated with optimum through the productions of rice and wheat in the regions of southern Jiangsu Province, and wheat or maize in the plains of northern China, under the change conditions of labor opportunity cost and management size-service size. It revealed specifically that the change of productive technical type and economic mechanism of mechanization development is correspondence with the relations of relative cost among factors,. It was also conditioned forcefully by the managed service size, which is related to the development of social economy, the choice of managing subject, and the growth of economic organization. Meanwhile, it proved that "the long-run average costs" is a curve of "L" type, but one of "U" type.

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