用DEA法的两个模型测算农机化贡献率的算法研究

Approach to estimating the agricultural mechanization contribution rate by two models in the DEA method

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英文关键词：DEA method； C^2R； C^2GS^2； agriculture mechanization； contributive rate； calculation

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中文摘要：

测算农机化贡献率的主要目的是从数量关系上认识农机化对农业增产增收带来的实际作用大小。在实践上有助于从总体上把握农业机械化的发展水平、发展潜力和发展趋势，在理论上研究产业系统单因素的贡献率具有学术意义。该文提出了综合运用DEA法的C^2R和C^2GS^2两个模型，测算农机化贡献率的基本方法。该算法克服了现有DEA算法测算农机化贡献率时无法考虑技术进步所做的贡献而导致农机化贡献率偏大的问题，使测算结果更接近真实情况。

英文摘要：

In order to determine quantitatively how much effect agriculture mechanization had on the agriculture output growth, the contributive rate of mechanization in agriculture was calculated. In practice the calculation is helpful to apprehend the agriculture mechanization developing level, potentialities and trend from overall. In theory the studies of contributive rate of single factor about industry system also have the academic significance. The paper presents the basic method for estimating agriculture mechanization contributive rate by applying a synthetic method of DEA(Data Envelopment Analysis) including two models of C^2R and C^2GS^2. This method overcomes the disadvantage of conventional DEA method in calculating contributive rate, by which the calculation result is bigger than the real ralue without considering technology progress contribution to agriculture growth. Therefore, taking technology progress contribution into account, the new result approaches to the real situation.

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