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Abstract. This work presents two integral-based methods for evaluating intelligent agricultural greenhouses when the evaluation index data are fuzzy values. From the view of the whole monitoring system of intelligent agricultural greenhouses, an evaluation index system which fully reflects the performance of five related subsystems is identified. We combine Liou and Wang's integral-based method respectively with classic weighting method and TOPSIS (Technique for Order Preference by Similarity to an Ideal Solution) to formulate two integral-based evaluation methods of intelligent agricultural greenhouses with fuzzy information, that is, integral-based weighting method and integral-based TOPSIS method. Numerical results show the effectiveness and advantage of the proposed methods.

Keywords: Intelligent agricultural greenhouses, Fuzzy evaluation, Integral-based methods, TOPSIS