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A comparison of simulation softwares in modelling crop structure management with a stochastic linear programming model

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A stochastic linear programming model was created based on crop structure data. As to determine the optimal structure, an MCMC simulation was performed by using WINBUGS and two other Risk Analysis softwares. Values and coefficients of the goal functions, provided by different softwares, were analysed and compared. A deterministic linear programming solution was also compared to all the results of the stochastic simulations. Evaluating the results WNBUGS proved to be the most suitable software for establishing management decisions in crop structure modelling. In my study I also presented the way for implementing stochastic linear programming models in WINBUGS.

Keywords: Winbugs, Bayessian Statistics, crop structure, risk analysis, Marcov Chain Monte Carlo