Abstract
The use of CROPGRO-Bean in Venezuela has been limited due to the unavailability of genetic coefficients for local varieties. The values of 15 genetic coefficients required by the DSSAT model Version 3.5, as well as a description and assessment of the procedure used to determine and register 7 new cultivars are presented. Coefficients were determined by comparison with 6 sets of experimental data and results judged by various statistical indicators. Use of generic genetic coefficients and unadjusted SLPF produced overestimations of 61% of yield, demonstrating the inadequacies of such approach and highlighting the need to determine adjusted coefficients for local soils and varieties. For validation of simulated yields using adjusted coefficients, means and standard deviations of observed and simulated results were similar; values of mean squared error of prediction (MSEP= 0.05Mg·ha-1), mean absolute error (MAE= 0.16Mg·ha-1), and relative error (E= -1.65%) were low; and values of index of agreement (d= 0.85), coefficient of efficiency (EF= 0.62) and coefficient of correlation (r= 0.84) were high; thus concluding that the procedure and experimental data employed demonstrated an adequate behaviour of the model in 7 of 10 genetic materials assayed. Additional field data is required to calibrate Magdaleno, MEM-02-00-16 and MGM-03-99-06. By using descriptive, difference and correlation based statistics the benefits of calibration for yield simulation of new cultivars are illustrated.